



# RESEARCH AND PRACTICE IN PHYSICAL EDUCATION

DEBORAH TANNEHILL,  
ANN MACPHAIL, GER HALBERT  
AND FRANCES MURPHY



# RESEARCH AND PRACTICE IN PHYSICAL EDUCATION

Research findings in education can provide invaluable insight into how teaching practice can be improved, but research papers are often inaccessible and hard to digest. This innovative new text is designed to assist physical education pre-service teachers, practising teachers and teacher educators with learning how to read research and to apply it to practice in primary and secondary physical education. The text also provides insights and implications for those working with young people in physical activity and sport settings.

The book presents a clear, step-by-step guide on to how to read and interpret research, followed by a series of short and engaging introductions to contemporary research studies on key topics in physical education, from classroom management and programme design to assessment and social issues. Each study is discussed from the point of view of researcher, teacher educator and primary and post-primary teacher, providing the reader with invaluable insight into how to use research to generate new ideas and improve their teaching practice.

*Research and Practice in Physical Education* is the perfect companion to any course in research methods, current issues, learning and teaching, or pedagogy and curriculum in physical education.

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# RESEARCH AND PRACTICE IN PHYSICAL EDUCATION

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Ger Halbert and Frances Murphy*

*With Lawrence F. Locke and  
Dolly Lambdin*

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**To Larry Locke and Dolly Lambdin for their initial rendition of this book and their considerable energy promoting and applying research for teachers.**

**To pre-service and practicing teachers who constantly strive to do better at providing a positive physical education and physical activity experience to young people.**



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involved with her professional subject association attending conferences and continuing professional development (CPD) events in physical education. In 2002, she completed a Graduate Diploma in Health Education and Health Promotion and this led to a part-time role with NCCA with responsibility to support the development of a framework for Social, Personal and Health Education (SPHE) in senior cycle. She completed a M.Ed. in 2005, which involved an action research project into her own teaching of SPHE. Continuing to teach in a part-time capacity in a large all-girls secondary school, she acted as a part-time NCCA education officer, supporting the development of both the senior cycle physical education framework and the draft syllabus for physical education for those students who wished to study physical education for their Leaving Certificate examination. Ger now works as a full-time education officer and is part of a team supporting the introduction of the new junior cycle framework for junior cycle education in Ireland. Married to John, Ger has two adult children and enjoys travelling, being active and spending time with her family and friends. She can be contacted at [gerhalbert@gmail.com](mailto:gerhalbert@gmail.com).

# INTRODUCTION TO READING RESEARCH

*Deborah Tannehill, Ann MacPhail,  
Ger Halbert and Frances Murphy*

In 2003, Larry Locke and Dolly Lambdin published a gem of a book through Human Kinetics, *Putting research to work in elementary physical education: Conversations in the gym*. Whether working with pre-service, novice or veteran teachers at the primary/elementary or post-primary/secondary level we found this book invaluable for helping professionals learn to read, understand and appreciate research and its application to practice.

Like the first edition, *Research and practice in physical education*, now published by Routledge, is for physical educators. The audience we invite to read this book is similar to the audience for the first edition, including primary and post-primary physical educators, teacher educators and their pre-service teachers, novice researchers and those pursuing graduate study in sport pedagogy, programme administrators and coaches working with young people in physical activity and sport settings, and research scholars. So as not to confuse you, please note that we will refer to primary/elementary or post-primary/secondary interchangeably depending on the research report and the part of the world from which the researchers came. It is our intent to share, report and discuss research in ways that clarify the implications and applications for practice, assisting those interested in quality physical education and physical activity programmes in reading and understanding research in order to apply it in their own practice and subsequently contribute to their continuing professional development. This edition takes a similar format to the first, reflecting a conversation between researcher and veteran teachers, coaches and programme designers, although in our final reading of the text, we seem to take a more practitioner-oriented perspective.

## **Who are we . . . the authors?**

We are four physical educators who have taught in schools at all levels, coached at primary, post-primary, collegiate and disability athletics, worked as a full-

time research fellow, in curriculum development and teacher education, conducted research on teaching, coaching and teacher education, and supervised undergraduate, master's and doctoral research. One of us identifies most with her role as a primary teacher, while another values her research agenda and how it can inform practice. One of our final two authors is most committed to post-primary students and their engagement in physical activity and the other values her work in teacher education across initial and in-service education. Our collective teaching and research remits in education span over 125 years in three countries, the United States, the United Kingdom and Ireland. In describing ourselves we realise that many of our friends and colleagues call us 'nerds' because of our intense investment in our work and never missing an opportunity to discuss it even in social situations. When your work is enjoyable and a passion, can it really be considered work? We not only enjoy teaching, coaching and working with young people but value our discussions of pedagogy and interactions with colleagues in an attempt to improve what happens in the name of physical education and helping others choose a physically active lifestyle.

## **Who are you . . . the reader?**

We often lament the fact that researchers tend to talk to researchers, and while their findings may indeed be intended to impact practice, the practitioners are not those with whom they share, discuss and build relationships around application. This text is intended to be accessible to a diverse group of readers, share an assortment of research studies that have relevance to teaching primary and secondary physical education internationally and will not require readers to possess a highly technical vocabulary, advanced scientific knowledge, or a detailed background concerning research methods. Rather than expect every research paper to have a companion pedagogical publication it is our hope that this work will assist the practitioner in reading and applying research to their own practice. Keep in mind that researchers do not publish in scholarly journals just to boost their egos but due to the requirements set by universities to maintain their positions, and to affect practice by informing colleagues of pertinent findings. One caution, however, we do not claim that our interpretations of the selected research are accurate from the original researchers' perspective, or even from how you will interpret it . . . these are our thoughts, which have resulted from our reading and extensive discussions, so use them as you may.

## **How the book is organised**

The content of the selected 22 research papers are grouped into four categories:

- 1 student engagement and experiences;
- 2 instruction, learning and assessment;



- 3 curriculum models;
- 4 continuing professional development.

These categories are explained at the beginning of each section prior to presentation of the selected research papers. As with the first edition, each study is briefly described (from our viewpoint) and commented on from a research perspective. However, we then provide a response from a teacher educator, primary and post-primary teachers and, in some cases, a shared response, or only a shared response. With each of us coming from the varied backgrounds described above, development of our responses was collaborative and shared in most instances. On a few occasions you will see us use 'I' rather than 'we' and in those instances one or the other of us felt strongly about a particular issue or point and took it on from an individual perspective. We would read the paper, come together and discuss what it meant, problems we saw in the study design or interpretation, how it might inform practice in teacher education or when working with young people in schools, and then formulated an action plan for writing our perspective. One of us would be typing comprehensive notes during our discussions to guide all of us in framing and communicating our thoughts in the text.

Each chapter is broken down in a similar format with the following headings: **The study**, which provides a basic description of the research (purpose, participants, design and methods, and results), **Research perspective**, which tended to tackle our initial reactions to the research reported, and a **Teacher educator, Primary and Post-primary response** to the study and how it might be applied in practice. Which of us wrote each section of our response varied from study to study as, with our varied and overlapping experiences in teaching physical education, it was not clear cut who should take responsibility where. We drew on one another's ideas, squabbled in some cases and built our thoughts as a collective, bringing the response to fruition often using a final category of **Shared response**, or in some cases only providing a shared response, which allowed us to react as a collective when most appropriate. In the end, we read and re-read each other's writing, making constructive changes as we saw fit.

What fun we had reading selected papers, meeting for discussions, interpreting methods and findings, brainstorming ideas and applications, disagreeing on some issues and enthusiastically welcoming others. There were times when one of us would come into the day's discussion grumbling over an article that was a struggle to get through and suggesting it not be used when another of us would excitedly say, 'this was it . . . this article really rattled my cage, the best one we have read so far'. We cannot emphasise enough how much we learned from one another and our discussions of research and practice.

As our discussions evolved we found the different education hats we have each worn over the years affecting our understanding and interpretations of the research and how it might be applied to practice. Our diverse perspectives, developed in different countries, sometimes resulted in misunderstandings due to

cultural nuances and language idiosyncrasies, yet we often found that once we interpreted one another we shared similar viewpoints. Don't misunderstand us . . . we did not always agree and you will see in some of our responses where we diverged. Our writing is personal, speaks from the heart and may or may not resonate with your own viewpoints at times. We invite you to learn from these chapters on how to read and interpret research, consider our perspective and interpretation of the studies shared and use what you can to have an impact on your own understanding and practice.

## **Scope of this book**

To clarify what this book is and what it is not . . . let us explain. It does not aim to teach you how to design and conduct research, nor does it intend to provide you with 'how to' teach physical education or physical activity in various settings. It does not suggest programme design guidance or how to improve teaching based on research. What it does do is provide you with our insights on research and our discussions on what that research said to us, the implications we drew from each study for our own teaching practice and how you might read and interpret research to meet your own needs and those of your students. As noted previously, we tended to focus more on how the research caused us to think outside the box and make practitioner decisions on how to apply what we read. We hope that you can learn from the dialogue that took place between us and how we sorted through what we were able to draw from the various research papers. If you do get involved in your own discussion groups, enjoy them, draw as much as you can from each other and learn from one another's insights but most of all be open to what you can gain from research that has been conducted and published to inform our practice of teaching physical education.

## **Characteristics of research included in this book**

As with the Locke and Lambdin edition, to be included as research in this book, each study required all of the following:

- Development of a question, which may have been as narrow as 'How frequently does that happen?' or as broad as 'What's going on here?'
- Explanation of how the question fit into what we already know (literature review) and why it was worth asking (rationale).
- Design of a carefully specified method for collecting accurate information (data) bearing on the question – information that may have been collected as numbers or words.
- Recording and preserving of data in a careful and systematic way.
- Analysing of the data in a manner that maintained its integrity while clarifying its meanings.

- Specification of exactly how the data related to the original question (findings).
- Presentation of the investigator's interpretation of what the findings may have meant when considered in light of the entire study (discussion and conclusions).
- Preparation and submission for review by other researchers (a procedure commonly called 'peer review') and subsequent publication of a reasonably complete account of each of the steps above (the research report).

Research tends to be messy, is not always linear and may portray the researcher in different ways from a participant observer to one who is in charge of interview transcriptions or statistical analysis of questionnaire data. No two research studies will look the same, from the context to the participants and from the research design to the results. In some cases the researchers may develop a set of recommendations for an extension of the conclusions into practical applications, or they may even include a discussion of alternative interpretations of the findings. Those, however, vary from study to study. As you read our descriptions of the studies you will find that we have made the decision on what to include and what to overlook . . . this is a decision we made that we believe will assist you in understanding the research reports we selected to share. Did we make the correct choices? Perhaps not, but we did the best we could on the task and we have used what we share to guide our discussions and interpretations.

By noting what we have included as research papers you should also be able to see what we have excluded. There were instances where we selected a research report, read it, learned from it and then, when we convened for discussion, one of us would remark, 'we can't use this as it does not meet our criteria'. While disappointed in some cases we stuck to the guidelines we drew in making our selections, which means we did not include popular journal articles, theoretical pieces by noted scholars or practitioner descriptions of teaching strategies or programme design. This is not a condemnation of these types of papers or in any way speaks to their quality or value – just that they did not fit the criteria for reading and applying evidence-based research to practice. As stated so well by Locke and Lambdin in the first edition:

For our purpose, within this book, we focus entirely on assertions about teaching physical education that are supported by evidence from research. We made that choice precisely for the following reason: What researchers have to say in their reports differs substantially from the assertions of practicing teachers, authors, journalists, philosophers, and theoreticians. Unlike teachers, researchers are trained 'outsiders' who can step back from the buzzing confusion of a busy classroom, sometimes catching a clear glimpse of the whole forest, rather than the nearby trees. Unlike novelists, researchers are not constrained to tell a good yarn at the expense of describing the sometimes tedious nature of school life. Unlike journalists,

researchers do not have to meet deadlines and thereby rush past a part of the whole story. Unlike philosophers, researchers have to ground their descriptions in the hard stuff of actual observations, rather than on the foundations of persuasive logic. And, unlike theoreticians, researchers must deal with how things did happen, rather than with predictions of how they are likely to happen.

All the studies we selected for this text are examples of educational research that deal with pedagogy and with programmes in physical education and general education in one instance. Noting that each research study has undergone the peer review process, all represent reasonable levels of adherence to standards for careful planning, sound data collection, thoughtful analysis and appropriate conclusions. While this does not suggest that any of the studies or subsequent publications is without its limitations, we have judged the decisions of the review boards to be sound, and where we question some aspect of the research we note that in the 'Research perspective'. On the other hand, we found that in some cases, while we questioned aspects of the research itself, we found the reports compelling, thought provoking or that they prompted us to question our own understandings of research and its application to practice.

There have been frequent concerns over whether research on teaching can actually be conducted, at least through systematic and empirical methods of investigation. Others suggest that while research on teaching and learning in schools can be conducted using various research methodologies, interpreting the results and pointing to why something did or did not occur is problematic. We argue that there is much to be learned from varied research methodologies studying practicing teachers, perspectives of pupils, diverse teaching strategies and curricular innovations. Your task is to keep an open mind as you read research, drawing conclusions and applications that you can utilise in your own context with your diverse group of learners. Use the research to question, explore and grapple with your understanding of teaching and pupil learning. You may be surprised by what you take away from reading research.

## **Purpose for this book**

In recent years there has been ongoing debate between practicing teachers and researchers about the relevance of pedagogical research for teaching young people in schools. As Locke and Lambdin (2003) originally noted, research findings in education do not provide assurance that something will always occur, in all settings and with all students, but they do provide insight into how things might be adapted or revised to improve practice. As we noted previously, research is not always reported in ways that clarify these implications and applications for teachers. As teacher educators we must help teaching professionals learn to read, understand and apply research findings to their teaching settings so that they might better

impact and facilitate student learning. In other words, instead of separating theory from practice, we must help pre-service and practicing teachers see the connection between the two, interpret what research is telling us about practice, and find ways to adapt and revise it for our own practice. Like Locke and Lambdin, we anticipate that this textbook will assist pre-service teachers, practicing teachers and others working with children and youth in physical activity settings to value research and use it to improve practice and challenge learners in physical education.

# GUIDELINES FOR READING RESEARCH

*Lawrence F. Locke and Dolly Lambdin*

The following 12 guidelines are intended to help you get started with the task of reading the annotated research reports that form the 22-chapter core of this book. They include simple advice about how to do it, what to look for and how to think about what you discover. There is no instruction about technical matters (none will be needed), and much that we have to say should closely match your own common-sense ideas about how to approach the task. The guidelines do, however, reflect a particular set of assumptions on our part, which in turn reflect our understanding of who the readers are likely to be and why they might find value in research.

We have assumed that our advice should be directed specifically to people who are seeking information and ideas that might illuminate the work of teaching elementary/primary and secondary/post-primary physical education. As you will see when reviewing the guidelines, our choice of the word *illuminate*, rather than *improve*, was deliberate, and it reflects one of the perspectives we urge you to adopt. Also, to the extent that the guidelines were devised to serve the needs and interests of a particular audience, the advice they contain differs in content and emphasis from what we might counsel for people with other backgrounds and needs.

We have tried to think about what you might find helpful. Please give the guidelines your close attention, read a few chapters, then make your own judgment about how well they have served your needs.

## **Guideline number 1: Take your time**

Notice the small things, and wonder about the unexpected. Pause to reflect on your own experiences, and then compare them to the observations and assertions of the investigators. What is valuable in a study may lie as much in the thoughts

it provokes as in the conclusions it asserts. We can't guarantee that you will encounter a career-altering revelation within the 22 annotations that follow, but an open mind is prepared ground. Who knows what amazing ideas might take root? None of that will be possible, however, if you turn the reading task into a race.

When you think you understand the contents of a chapter, you will more likely find those contents useful and retained in memory if you take the time to reflect on what you learned, how it fits with your experiences and where it might serve your own purposes. If it is possible to do so, give your new insight an informal trial run in one of your classes and by all means, share the study with others.

The same general caution applies to the pace at which you proceed through a series of studies. Try to limit yourself to one study per sitting. Ploughing through four or five chapters at a time will overload your memory, dull your sense of adventure and mush many important details and distinctions into a single amorphous heap. Like any substantial meal, a good research study requires time to consume – and digest.

## Guideline number 2: Use the headings and proceed step by step

As arcane as they may seem at first, research reports are nothing more than elaborate stories – or, to be more precise, histories. As such, they must address a familiar set of questions: What? Why? Who? Where? How? and With what result? The headings inserted into each chapter mark the locations where you will find the answers.



*The study* – the *what* and *why* of the study;

- *Participants* – *who* the subjects were and *where* the study was conducted;
- *Design and method* – *how* the study was designed and implemented;
- *Results* – *what* was found and reported in the results.

The remaining sections of each chapter consist of individual and joint comments on the story laid out in the annotation:



*Research perspective* – Critical points that we as researchers found interesting in this study;



*Teacher educator response* – Our thoughts on how this study might impact our practice in physical education teacher education;



*Primary response* – Insights on how this study might impact practice in primary physical education;



*Post-primary response* – Insights on how this study might impact practice in post primary physical education;



Shared response – Issues or insights drawn from this study that cross over teacher education, primary and post-primary physical education.

The headings used in the annotation actually represent an abbreviated version of a longer checklist that was designed for use in reading full reports in their original published form. If you are interested, that tool for reading and studying can be found in *Reading and understanding research* by Locke, Silverman and Spirduso (2010). As you will be reading only brief annotations here, however, the smaller set of basic headings should be sufficient to keep the unfolding story organised in your mind – provided you take things one step at a time and resist the temptation to try to comprehend too much, too quickly.

One by one, you can accumulate each part of the study's history. You need not be concerned about grasping the whole picture; it will become clear at the end. This is an instance in which part/whole learning is an effective strategy. After you have concluded a first tour through the annotation, if you sense that something is missing, just go back to the heading where it should be found. In most cases you can quickly track down what you missed. In some instances, however, you may not find the fugitive fact because of an editorial decision that the particular bit of information was not essential to the story – that is, it was simply left out (remember that annotations are by nature much abbreviated versions of longer stories).

Finally, please note that when preparing the annotations for this text, the story-like qualities of the original reports are emphasised. There was no attempt to write equal amounts of prose under each heading – some are paragraphs long and others consist only of a single sentence. Also, what the authors chose to write about often reflects their thoughts on what you would find interesting or useful, rather than what the researchers had elected to emphasise. Accordingly, the original was freely edited in an attempt to maintain both clarity and a good story.

### **Guideline number 3: Use your study skills**

Whether in the form of an abstract, an annotation or a full report most accounts of research have to be studied, not just read. Perhaps one in a hundred readers can start at the title of an investigation and read straight through to the end – and really finish with a clear picture of the entire story. If you are not one of those lucky few, then you must be like the rest of us. You will actually have to study research, which means doing things such as initial skimming to get an overview of the study; skipping forward and back in the text to puzzle through difficult points; underscoring, highlighting and writing in margins to give emphasis to key points; and creating mental summaries as you go along. Most beginning readers quickly identify a number of such personal study strategies that improve efficiency and maximise comprehension. Those processes represent active studying, not just passive reading.



Reading research is often interesting, frequently provocative, sometimes satisfying and, on memorable occasions, even exhilarating. To be completely truthful, though, much of it is work – wholesome, respectable and productive – but work nonetheless. Even with carefully devised research summaries, nobody is promising you a stroll in the park. With a modest investment of time and effort, however, this is work you can learn how to do (and do probably far better than you expect).

#### **Guideline number 4: Don't panic if you can't understand everything**

It has been our experience that published research reports rarely contain defects that are absolutely fatal to the reader's understanding. That said, it also is true that failures to achieve complete clarity in the explanation of an investigation are fairly commonplace. Such problems are not surprising, given the complexity of a task that requires crafting a report that will be fully transparent with regard to every detail (to the eyes of every potential reader). The question here is, how are you going to feel when one of the annotations is not transparent to you? We have some firm advice on that matter.

When you find yourself confused, you will need to exercise some good mental hygiene. That healthy response begins with one simple rule – *Don't panic!*

Two valid reasons exist for not getting into a panic that will ultimately undermine your confidence. First, the problem may not be yours; it may be the authors' (or the annotator's). Key bits of a story do get lost, writers do make unfortunate word choices that mislead the reader, and complexity itself sometimes obscures prose that seemed perfectly lucid to authors, editors and annotators. What you have to remember is that *the person who is out of step may not be you!* Sometimes a report may be unintelligible for the simple reason that it is unintelligible and would be so to any reader. That is the way things are, and sometimes we truly do have to just live with it.

The second reason not to get into a panic is that you simply may lack some particular bit of background that is critical to understanding the material, or maybe you simply find this kind of reading more difficult than other intellectual tasks. It would be a surprise, in fact, if any of us failed to have problems when navigating in unfamiliar waters. If any of these are the case, believe us, it is neither the end of the world nor is it an indication that you will fail to glean something valuable out of what you have read. And it most certainly is not an indication that nobody can help you (they usually can) or that you won't be able to understand the next chapter perfectly well, even without assistance. Through all of this, our advice remains constant – *Don't panic!*

We have sound reason for persisting with such an injunction, and it comes from years of our own reading experiences in the research literature, as well as those of our students. The rule is simple: *missing a specific piece of a study almost*