

## PEDAGOGY

# Interrogating Assumptions of a Curriculum: Queensland Senior Physical Education Syllabus

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## Abstract

*This study analyzes the 2004 Queensland Physical Education (PE) Senior Syllabus to ascertain to what extent it is developing physically educated students. The 2004 QSPES is a fundamental document relevant to the teaching of PE (in Years 11 and 12 of high school) in the Australian state of Queensland. Kirk's (1988) notion of a physically educated person being an intelligent performer guides the research and frames the discussion. The 2004 QSPES syllabus was examined via content inquiry. The 2004 QSPES included concepts such as intelligent performance and complex environments, and it suggested teaching styles to meet these concept developments. It was found that the development of physically educated students was ill-defined, contradictory, and questionable. It is likely that teachers will have trouble applying, teaching, and assessing the concept of intelligent performance.*

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This study undertook a document analysis of the 2004 Queensland Physical Education (PE) Senior Syllabus—from this point referred to as the QSPES (Queensland Studies Authority [QSA], 2004)—to ascertain to what extent it was providing guidance in developing physically educated students. The syllabus was of great interest to Health and Physical Education (HPE) in Queensland, as it was innovative and transformational in the way that it viewed and suggested that content be delivered. Some (Penney & Kirk, 1998) even argued that there were few better physical education documents in the English-speaking world. Kirk's (1988) notion of a *physically educated* person, as a pivotal underpinning of the syllabus, being an *intelligent performer* guides the research and frames the discussion. The QSPES is a fundamental document relevant to the teaching of PE in the Australian state of Queensland. While viewed historically as positive by some (Kirk & O'Flaherty, 2004; Macdonald & Brooker, 1997a, 1997b), Hay (2008) suggested that little research about its claims, ambitions, and implementation at the classroom level had occurred.

Prior to 1964, HPE did not exist as a subject that contributed toward a score for entry to university in Queensland state secondary schools. The Watson Report in 1961 was a major factor in change and provided a “secondary curriculum comprising compulsory and elective subjects over a 5 year period” (Reddan, 2000, p. 6). In 1964, an HPE course was developed and began for Years 8 to 10. In 1966, the PE branch of the Queensland Education Department published a syllabus for HPE for secondary schools.

The Radford Report of 1970 (which investigated the positives and negatives of public examinations) led to a major reorientation of HPE. In May 1973, a new syllabus in HPE for Years 8 to 12 was submitted to the Board of Senior Secondary School Studies (BSSSS)—the government organization responsible for syllabus development and implementation. Trials began in several schools in 1974, with a review panel appointed to report on these trials. The subject quickly grew in popularity, and this showed in participation rates. In 1975, 112 Year 12 students participated in HPE, and by 1992 the number of students studying HPE had grown to 10,700 students (Reddan, 2000). This figure represented nearly a third of the students enrolled in Year 12 that year in the state of Queensland.

In 1981, the subject advisory committees for all subjects (including HPE) were requested to define the objectives for their subject and to redraft syllabi (Edwards, 1989). The second redraft in 1982 produced major changes, specifically the element “Health Science” was changed to “Health Education.” Allen and Thompson (1984) (as cited in Reddan, 2000) argued that this change indicated a general consensus advocating the separation of a theoretical Health Education from a practical Physical Education. The seeds of the 2004 QSPES were not sown for another decade.

Although the HPE subject grew in popularity among students and teachers, discontent and questioning also grew. The question that started to be asked was, “What does it mean to be physically educated?” (Macdonald & Brooker, 1997b, p. 164). Although this question had been asked before, Macdonald and Brooker (1997b) felt that this was one of the major shortcomings of the Senior HPE syllabus—the fact that it did not seem to clearly articulate this point. Some academics (Arnold, 1985; Kirk, 1988, 1989) sought their own answers to this question, arguing that for a student to be physically educated, “their experiences need to be grounded in movement itself” (Reddan, 2000, p. 112). Others felt that the Senior HPE syllabus had “unintentionally devalued the importance of movement and divided worthwhile knowledge in Physical Education into theoretical and practical understanding” (MacDonald & Brooker, 1997b, p.164). The Queensland Senior HPE syllabus also had a strong emphasis on performance (Macdonald & Brooker, 1997b), and therefore, Kirk’s (1988) notion of a physically educated person being an intelligent performer was underdeveloped in the old Senior HPE syllabus. This concept of *intelligent performance* will be explored in detail later. The concept of intelligent performance should be seen in the context of a revisionist look at earlier syllabi because these notions were not ever part of the view at the time—people seemingly knew what HPE was at this point.

During July 2002, the BSSSS merged with the Queensland School Curriculum Council and the Tertiary Entrance Procedures Authority to form the Queensland Studies Authority (QSA). The QSA has had a further name change and is now the Queensland Curriculum and Assessment Authority (QCAA). This organization was responsible for syllabus development, and according to its website, it

is a statutory body of the Queensland Government. The Queensland Studies Authority's (known as the QSA) peak decision-making mechanism is the governing body, whose members represent teacher, parent, union and higher education groups, and the State, Catholic and Independent school sectors. (QSA, n.d., para. 1)

The BSSSS appeared to be moving in a direction that valued academic excellence (more than physical excellence on its own) in terms of a subject that contributed to university entrance. Macdonald and Brooker (1997b) suggested that the policy whereby the lowest result (also known as the “at least” model) across three criteria determined the final level of achievement was an attempt to transfer the subject toward a more academic emphasis. The three criteria, or *general objectives*, used for assessment were *content*, *process*, and *skill*. The first two of the general objectives referred to theoretical components of knowledge (written work), while the last general objective referred to physical or practical performance.

Some time passed, but the Subject Advisory Committee eventually adopted a model that separated Health Education and PE and created distinct syllabi. The BSSSS desired to raise the academic status of PE. Reddan (2000) suggested,

The concerns for academic status and educationally worthwhile knowledge were influential in the development of the senior PE syllabus, which focuses on the dimension of “learning in physical activity” and “learning about activity” derived from Arnold's model (1985). (p. 115)

From an evaluation of the pilot syllabus in 1998, conclusions were drawn that “there is very little else currently underway in the English speaking world to match developments in Queensland” (Penney & Kirk, 1998, p. 43). With such lofty claims, it is important that key aspects of the 2004 QSPES such as terms, concepts, and teaching styles are examined and that their role in assisting teachers to create physically educated students is ascertained. This paper adopts a similar process to syllabus analysis as that employed by Boss and Drabinski (2013):

1. Gather the artifacts.
2. Develop a set of content questions to guide the document analysis.
3. Author 1 to undertake a calibration conversation with Author 2 about the questions.
4. Application of the analysis questions to the artifacts. This process will be outlined further in the Method section.

## Method

The first step in this syllabus analysis involved gathering the artifacts. This involved the researchers reading and interacting with the 2004 QSPES. One of the researchers, being both a full-time high school teacher and a PhD student at the time of the research, had extensive knowledge of the 2004 QSPES. The next step involved the development of content questions that would allow conclusions to be drawn about the research hypothesis. In undertaking a critical content inquiry of the 2004 PE syllabus and its intentions, claims, and outcomes, the researchers formed a research hypothesis: To what extent are the terms, concepts, and teaching styles outlined in the Senior PE syllabus articulated clearly and relevant to, clearly understood by, and appropriately implemented by teachers of Senior PE in Queensland schools?

This hypothesis and content question was developed after the authors, as both teachers and researchers, read and interacted with the 2004 QSPES, using critical content inquiry. Content inquiry is “the process of organising information into categories related to the central questions of the research” (Bowen, 2009, p. 32). The analysis of document content involves interpreting recorded material as a way of learning about human behavior or influences on human behavior (Ary, Jacobs, & Sorenson, 2010). In this research, the document content from the 2004 QSPES in large part created the research questions. For example, the 2004 QSPES included concepts such as intelligent performance and complex environments, and it suggested teaching styles to meet these aims. When these terms, concepts, and teaching styles were identified, the researchers further critically reviewed the syllabus to identify where these terms, concepts, and teaching styles were outlined again—in what context and in which parts of the document. This action allowed for further understanding of these terms, concepts, and teaching styles based

on the syllabus. The critical analysis was also looking for alignment and consistency (or inconsistency) with the use of terminology and concepts such as intelligent performance, complex performance environments, and assessment techniques. The researchers took the meaning of terminology as literally as possible and used research on these concepts and terms to further understand and draw conclusions about what would be seen if observations were conducted of Senior PE classes. This method has similarities with constructivist grounded theory in that the researcher's presence was not the focus of the critique or analysis, so it is neither neutral nor undesirable (Mruck & Breuer, 2003). Some literature has suggested that the researcher's voice should be acknowledged explicitly because it shows and talks about the researched area (Charmaz & Mitchell, 1996; Clarke, 2005). Ramalho, Adams, Huggard, and Hoare (2015) suggested that in constructivist grounded theory, the researcher will sometimes review literature first and that this reading "will be the one that guides the choice of the area to be researched and the method to be used" (5. Ensuring Groundedness section, para. 2). This method was used as the researchers read the syllabus (as the literature), and it guided questions that the researchers were asking: "Is this happening?", "What does literature say about this concept/idea?", or "How can that be achieved"? These questions guided the researchers' inquiry of the 2004 QSPES.

In the third step of this syllabus analysis, the researchers had calibration conversations about the questions, discussing whether the developed questions would allow a conclusion to be drawn about the research hypothesis. After agreeing that the questions would, the authors proceeded to explore the 2004 QSPES, using a narrative analysis relying on evaluation, judgment, and language skills to synthesize the document content and provide a summary of the evidence (Lyle, 2014). In adopting this approach, the authors recognize that "evidence" in this context consists of a "persuasive argument" (Lyle, 2014).

The final step began with the application of analysis questions to the artifact. Through this analysis of the document, certain identified categories or themes emerged. In many respects, the process undertaken bears some of the hallmarks of a concurrent triangulation whereby the researcher collects quantitative and qualitative data to determine convergence, differences, or a combination (Creswell,

2013). In this study, the researchers were, in some cases, triangulating and, in other cases, comparing against other places in the document the various ideas and concepts in the 2004 QSPES and then analyzing the document for congruence or contradictions. As can be observed, the researchers used some, but not all, aspects of grounded theory. According to some opinions, this is common, as “many authors label their work ‘grounded theory’ but do not follow the basics of the methodology” (Sbaraini, Carter, Evans, & Blinkhorn, 2011, p. 1).

## Discussion

The *rationale* of the 2004 QSPES states that PE “involves the study of physical activity and engages students as intelligent performers learning in, about and through physical activity” (QSA, 2004, p. 1). The terms (*in, through* and *about*) are based on Arnold’s (1979) three dimensions of movement, and the QSPES acknowledges that the dimensions “are not mutually exclusive but overlap and interrelate with each other” (QSA, 2004, p. 1). The QSPES suggests that integrating the three dimensions is “central to the construction of learning experiences in physical education” (QSA, 2004, p. 1). These integrated learning experiences are expected to generate intelligent performers capable of “rational and creative thought at a high level of cognitive functioning” (QSA, 2004, p. 5) and to involve “students as decision makers engaged in the active construction of meaning through processing information” (QSA, 2004, p. 5).

## Intelligent Performance

The QSPES continues by describing the notion of intelligent performance as movement that will “involve rational and creative thought at a high level of cognitive functioning” (QSA, 2004, p. 1) and engage students as not only performers but also analysts, planners, and critics “in, about and through physical activity” (QSA, 2004, p. 1). The 2010 QSPES—a revised and current version of the 2004 QSPES—still includes, in the Rationale section, the concept of “learning in, about and through physical activity” (QSA, 2010c, p. 1). However, the revision does not include the longer and more detailed explanation of intelligent performance. Instead, what once had definitions and examples has been reduced to one line containing no reference to the notion of *creativity*. Later, this document,

under the General Objectives heading, states that “intelligent performance is characterised by high levels of cognitive functioning, using both rational and creative thought” (QSA, 2010c, p. 3). Kirk (1983) explained the concept of intelligent performance, suggesting that PE needs a “means of conceptualizing physical performance in sports contexts which allows us to begin to reveal with a high degree of adequacy and relevance, the nature of sports performance” (p. 40). Kirk (1983) developed this point further, suggesting numerous characteristics of an intelligent performer such as intention with actions, the ability to read a skill into an appropriate context, knowledge of facts about performance, and the ability to go beyond these facts to “forge connections between propositions and actual instances of their occurrence” (Kirk, 1983, p. 42). Kirk’s (1983) concept of the intelligent performer takes PE students beyond a subject that can deliver numerous health benefits or purely a recreational pursuit. He suggested that the concept may conflate the mind and body dichotomy and represent

the sports performer, not as I believe he has been misrepresented and misunderstood in some circles as a mindless agent reacting to external stimulation, but rather as an holistic being who within pre-determined and agreed constraints acts on his environment and responds to its challenges creatively and intelligently. (Kirk, 1983, p. 43)

Kirk (1983) seemed aware that his concept may face some opposition. For example, he clearly explained that his concept was not intended to make claims “for the educational status of physical education as a school ‘subject’” (p. 40). Nor was he proposing “that sports performance is an intellectual pursuit, but rather, that such performance can be usefully and aptly described as ‘intelligent’” (Kirk, 1983, p. 40). In other words, sport may not require superior intellect to take part in it, but it may require thinking behavior or, at times, a quick mind.

For students of the 2004 QSPES to receive an *A* or *B* standard overall, they need to achieve an *A* or *B* standard in the general objective of *evaluating*, despite equal marks weighting for all three of the general objectives—this determination regarding evaluating is a distortion of the weighting attributed to each general objective. To

achieve these levels of achievement, students need to be able to solve problems or make decisions in “new or unrehearsed contexts within complex environments” (QSA, 2004, p. 55). These descriptors reflect that the 2004 QSPES values and grades students on this concept of creative thought (i.e., producing new ideas or thoughts). These requirements mean that students who achieve either an *A* or *B* for this descriptor have performed motor programs (skills) in a situation or environment unknown to them. This descriptor, highlighting new or unrehearsed contexts, requires that students not have had the opportunity to practice or rehearse the performance at all; otherwise, it would not be “new,” but would be recall.

When Glasby (1999) compared the 2004 QSPES, the Queensland Health Education Syllabus, and the P–10 Physical Education Syllabus (1999), she suggested

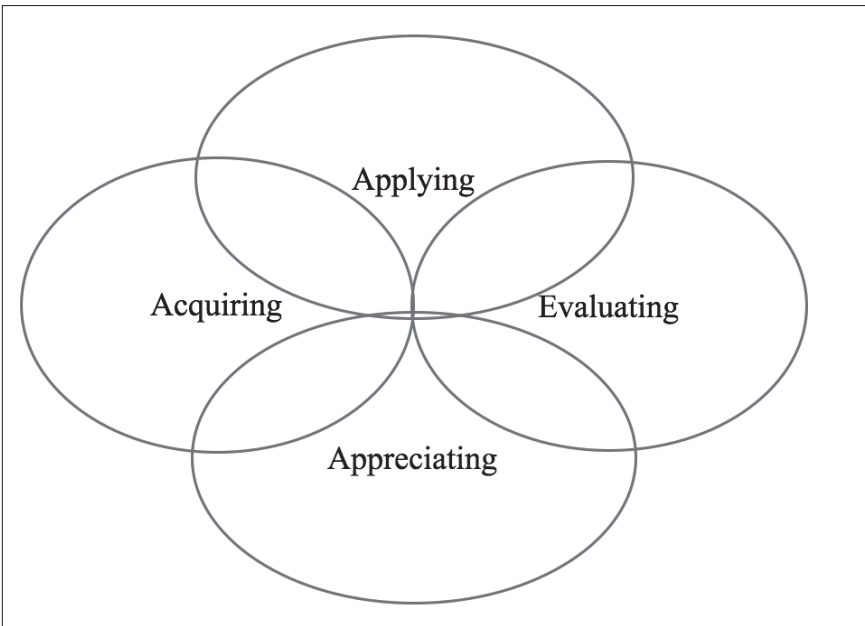
that, regardless of the differences in either curriculum model, syllabus structure or language, all three documents have drawn on aspects of Bloom’s Taxonomy of Educational Objectives (1956) and/or the information processing theory (Gagné 1985) as a “shorthand” for expressing what is expected of students cognitively (p. 6).

The assumption that students develop complex thinking skills because they participate in physical activity is vague and unconvincing. Participation in a learning experience with any of the learning objectives does not ensure that the learner develops complex thinking skills. The claim that students will learn complex thinking skills such as evaluating or creativity because they participate in sport or a physical activity, without a clearly stated objective and learning experience based on this objective, is questionable. As noted, the general objective of evaluating is at the apex of intelligent performance in the 2004 QSPES framework and a final grade of *A* or *B* is only possible when a grade of *A* or *B* is achieved in evaluating (QSA, 2004).

A few assumptions can be made about thinking as a complex skills. Thinking is similar to any complex skill in PE; it requires intensive physical conditioning or repetitive practice for the student to reach a high level and specific practice for the student to maintain this level. If the individual does not practice, it is unlikely that he or she will develop the skill to an extent at which he or she can

perform it with maximal certainty and maximal efficiency. In the case of thinking, intensive mental conditioning or practice of the specific cognitive skill or operation enables an individual to reach a high level. Nickerson, Perkins, and Smith (1985) suggested that “high level thinking skills can be improved by training, and it is not safe to assume that such skills will emerge automatically as a matter of development or maturation” (p. 59). This point, that training or practice can improve high-level thinking skills, starts to challenge the notion of an *A* or *B* overall achievement grade only being assigned to evaluating that occurs in a new or unrehearsed environment or involves creativity. If a student has practiced something, it is no longer new or unrehearsed, but recall.

Another confusing aspect of the 2004 QSPES is its suggestion for teachers to use Bloom’s Taxonomy to specifically teach thinking skills—the 2004 QSPES condensed Bloom’s six educational objectives of knowledge, comprehension, application, analysis, synthesis, and evaluation into the categories of *acquiring*, *applying*, and *evaluating*, with an additional category of *appreciation* not assessed. See Figure 1.



**Figure 1.** The 2004 QSPES categories.

But with the imprecision of the 2004 QSPES, it is confusing how teachers are supposed to apply Bloom's Taxonomy. The 2004 QSPES does not stipulate when, how, or which learning objectives teachers should use. This is one criticism of Bloom's Taxonomy in general. Further, it has sometimes been described as "too broad, vague and overlapping to provide a foundation for focused instruction in thinking" (Swartz & Perkins, 1990, p. 56), and it does not provide specific information about how to reach higher order thinking levels. Often verbs are provided about what is done at these levels (e.g., *arrange*, *appraise*, *predict*, and *validate*), yet "a thinking skills program that only aims at asking higher order questions . . . is not grappling with the real challenge of developing students' thinking" (Swartz & Perkins, 1990, p. 56). An example of this is evident in the 2004 QSPES in the General Objectives section. The section attempts to outline or define each of the general objectives. For evaluating, the 2004 QSPES lists a string of verbs to assist teachers in assessing evaluating or to help teachers know what evaluating looks like. The 2004 QSPES suggests that "evaluating is achieved through processes such as problem solving, hypothesising, synthesising, justifying and appraising information from sources such as books, journals, videos, databases and websites, engagement in physical activity and observation of performance in physical activity" (QSA, 2004, p. 6). Remember that the 2004 QSPES is not a thinking skills program, but it does suggest that Bloom's Taxonomy be used to teach the "thinking skills required to allow students to achieve the four general objectives" (QSA, 2004, p. 27). The Taxonomy may be helpful for having a common assessment language for teachers so there is some sense of certainty regarding what two or more people are speaking about. The use of Bloom's Taxonomy in this way provides that common language. However, prescribing Bloom's Taxonomy as a method to teach thinking skills and not providing guidance about how or when it is to be used is questionable.

Regarding the general objective of applying, the 2004 QSPES states that "applying refers to the ability to apply knowledge, understanding, values, attitudes, capacities and skills in, about and through physical activity" (p. 5). Bloom's Taxonomy lists a similar thinking skill category in the Taxonomy: *application*. This category thoroughly highlights the difference between comprehension and application,

suggesting that “a problem in the comprehension category requires the student to know an abstraction well enough that he can correctly demonstrate its use when specifically asked to do so” (Anderson & Sosniak, 1994, p. 20). Application, however, requires a step beyond this. For example, if “given a problem new to a student, he will apply the appropriate abstraction without having to be prompted as to which abstraction is correct or without having to be shown how to use it in that situation” (Anderson & Sosniak, 1994, pp. 20–21). It may be suggested that what Bloom refers to as application goes beyond what the 2004 QSPES defines it as. For instance, Anderson and Sosniak’s concept of application refers to a new problem. Based on the 2004 QSPES exit criteria, this would mean evaluating at an *A* or *B* standard, as the problem is new or unrehearsed. It is not surprising that differences exist in definitions between Bloom’s Taxonomy and the 2004 QSPES. Some of these differences are not helped by poorly articulated definitions in the 2004 QSPES and may create confusion for teachers of Senior PE. The differences between Bloom’s definition of application and 2004 QSPES general objective of application have occurred because the two categories of Bloom’s Taxonomy have been combined. Because Bloom’s definition resembles in some ways the general objective of evaluating more than application, imagining such confusion among readers is not difficult. Because teachers use these general objective descriptors to make judgments about students’ achievements levels, it is imperative that these descriptors are clear and not ambiguous.

The 2004 QSPES defines the third general objective of evaluating as “the ability to evaluate knowledge, understandings, values, attitudes, capacities and skills in, about and through physical activity” (QSA, 2004, p. 6). In contrast, Bloom defines it

as the making of judgments about the value, for some purpose, of ideas, works, solutions, methods, materials, etc. It involves the use of criteria as well as standards for appraising the extent to which particulars are accurate, effective, economical or satisfying. The judgments may be either quantitative or qualitative, and the criteria may be either those determined by the student or those which are given to him. (Anderson & Sosniak, 1994, p. 25)

That there are differences between definitions between the two documents is not so unusual. Other definitions of evaluation have been developed over the years. These have attempted to explain the functions that take place when a person attempts to evaluate. For example, Halpern (1996) noted that “evaluation is also a creative act because the problem solver must be able to recognise when a good solution has been obtained” (p. 372). At other times, evaluation has been closely linked to critical thinking. Again, Halpern (1996) posited,

When we think critically, we are evaluating the outcomes of our thought processes—how good a decision is or how well a problem has been solved. Critical thinking also involves evaluating the thinking process—the reasoning that went into the conclusion we’ve arrived at or the kinds of factors considered in making a decision. (p. 5)

Once again, another discrepancy between cognitive definitions of evaluating emerges. This definition does not refer to creativity, but rather more to *memory*, as the thinker or student does this thinking after the event. Others have also suggested this concept or definition of evaluation as requiring creativity or original thought. For example, Maier “used the terms reasoning or productive behaviour in contrast with learned behaviour and reproductive behaviour” (as cited in in Lewis & Smith, 1993, p. 132). He believes that learned behavior comes from “contiguous experiences with previous repetitions of the relationships involved in the learned behaviour pattern” (as cited in in Lewis & Smith, 1993, pp. 132–133). In contrast, reasoning or productive behavior is behavior integrations made up of two or more isolated experiences that are qualitatively different; “they arise without previous repetition and consequently are new. This constitutes reasoning” (Lewis & Smith, 1993, p. 133). Newman (1990) also clearly distinguished between lower and higher order thinking, defining lower order thinking as “only routine or mechanical application of previously acquired information such as listing information previously memorised and inserting numbers into previously learned formulas” (Lewis & Smith, 1993, p. 133). Higher order thinking is different in that it “challenges the student to interpret, analyse, or manipulate information” (Lewis & Smith, 1993,

p. 133). Newman (1990) posited an interesting point, suggesting that “higher order thinking is relative—a task requiring higher order thinking by one individual may require only lower order thinking by someone else” (as cited in in Lewis & Smith, 1993, p. 134). Lewis and Smith (1993) extended on this point:

Whether or not an activity requires higher order thinking will depend upon the intellectual history of the learner. If it is possible for a learner to achieve his or her purpose through recall of information and without the need to interrelate or rearrange this information, then higher order thinking does not occur. (p. 136)

The QSPES does not distinguish between points such as whether the knowledge is new or original for the student in its definition of evaluating (QSA, 2004, p. 6) or if the learner has had previous intellectual history with the task. However, the exit criteria sheet (which outlines the requirements of achievement at different levels) introduces the concept of new or unrehearsed contexts (QSA, 2004, pp. 54–55). A point worthy of note is that the exit criteria sheet only applies this concept to the Physical Performance and not the written work or Focus Areas. Table 1 outlines the components of Physical Performance and Focus Areas.

**Table 1**

*Physical Performance and Focus Areas of the 2004 QSPES*

Physical Performance	<ol style="list-style-type: none"> <li>1. Direct Interceptive</li> <li>2. Indirect Interceptive</li> <li>3. Performance Activities</li> <li>4. Aesthetic Activities</li> </ol>
Focus Areas	<ol style="list-style-type: none"> <li>1. Learning Physical Activities</li> <li>2. Processes and effects of training and exercise</li> <li>3. Sport, physical activity, and exercise in the context of Australian society</li> </ol>

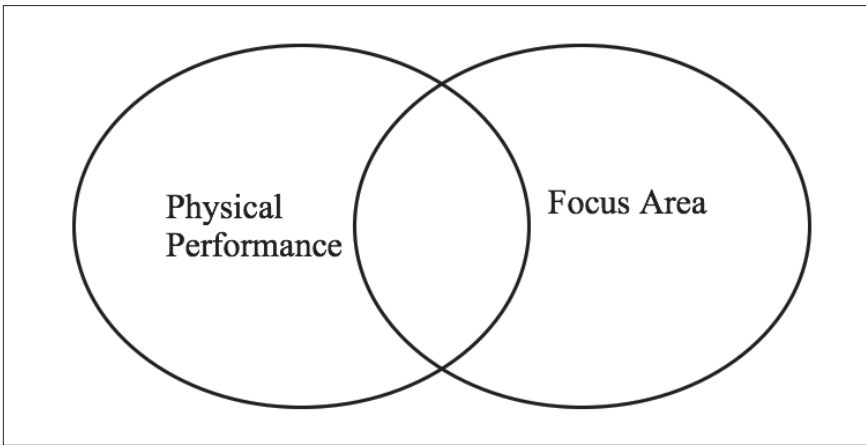
The Focus Area is sometimes referred to as the *theory* work. A key aspect of the syllabus is the integration of the Focus Area and Physical Performance while allowing these aspects to have

components taught or undertaken separately. Exploring the extent and success of this intent is difficult, as is exploring aspects associated with guidelines and consistency in the provision of a grade for physical activity performance—and despite a moderation process for results.

An essential feature of Queensland syllabi is school-based internal assessments to be monitored at district-level moderation meetings—a process that presents challenges in interpreting assessment guidelines and comparability between schools. The 2004 QSPES does not explain this difference in the assessment of evaluating. It is contradictory that a new or unrehearsed environment is important for achieving an *A* or *B* standard in performing a motor program (Physical Performance) yet not when evaluating an application of principles or facts not relevant in another (Focus Area). This difference suggests that, regarding the Focus Area, evaluating involves recall of known information or the evaluation of known facts or concepts and is, by definition, a task that requires memory. The 2004 QSPES does not justify or explain this. Neither of these words was mentioned in the descriptors for an *A* or *B* standard for evaluating, in the 2004 QSPES exit criteria, which were examined for assessing the Focus Area. It can also be suggested that having these two assessment criteria for the same cognitive process or general objective contradicts the concept of the intelligent performer and that the concept of using a cognitive taxonomy descriptor for a motor-learning behavior cannot be done. The point has previously been made that higher order thinking (including evaluating) is contextual and, if the evaluating of a situation has been done previously, and if the student is asked to perform such a task repeatedly, it becomes recall. If evaluating has been performed as described in the syllabus, then it has become a memory or reproduction task and is not a new task. Therefore, evaluating (and other higher order thinking skills) can be done as reproduction and as production thinking.

In summary to this point, based on the concept of the intelligent performer and the criteria for assessing students, the Focus Area (or theory) and the Physical Performance (or practical) are assessed in different ways. No explanation is given for this, but it seems that some literature (Halpern, 1996; Lewis & Smith, 1993) supports how the physical performance is assessed (with evaluating as a higher order thinking skill requiring a creative or an original thought and

not recall or a memory task) and how the 2004 QSPES views evaluating. Regarding how the Focus Area is assessed and the descriptors that teachers are asked to use, some literature indicates that the use of previously known information for evaluating is appropriate and that evaluating does not have to create new knowledge. The contradiction that emerges here with the 2004 QSPES is a difference between how the two (Focus Area and Physical Performance) are assessed, yet the 2004 QSPES stresses that integrating the Physical Performance and Focus Area assessments (the practical and the theoretical) is central to the construction of meaning in PE (see Figure 2).



**Figure 2.** Focus Area and Physical Performance integration.

The phrase “new or unrehearsed” (QSA, 2004, p. 55) is not included in the statements that describe the standard for awarding a grade of *A* or *B* in the assessment of the Focus Area. Regarding definitions of general objectives, there also seems to be some incongruence between the 2004 QSPES definitions and Bloom’s Taxonomy. Unless these general objectives are clear and concise, there are going to be difficulties with assessment, difficulties creating learning experiences to teach the general objectives, and difficulties creating assessments to measure the general objectives. The ambiguity of terms and definitions and the general objectives being assessed as the 2004 QSPES suggests would add some confusion for those who use the syllabus.

## The Intelligent Performer: A Questionable Concept

The syllabus suggests that a student should “demonstrate the ability to select and use information in order to evaluate and enhance learning in, about and through physical activities” and “demonstrate the application and evaluation of movement concepts and principles to performance in physical activities” (QSA, 2004, p. 4).

This reference to using information and the application of movement means the student must already have this knowledge to use or apply it. Consequently, this indicates that the student will recall this knowledge from memory. Presuming this is a memory task, then it is not higher order thinking as defined by the 2004 QSPES. The alternative concept to accept is that the earlier definition is not correct and evaluating can be a memory task and a creative task done in a new environment.

This ambiguity of terms must be questioned, as these two assumptions perhaps cannot be accurately assessed via the 2004 QSPES criteria. An examination of literature from the field of cognitive psychology can shed more light on this seemingly contradictory terminology within the 2004 QSPES. For example, Masters, Poolton, Maxwell, and Raab (2008) taught two novice groups a table-tennis shot explicitly or implicitly. Explicit training involved step-by-step instruction about movement patterns, while implicit training involved analogical instruction (e.g., “swing your racquet in an arc”). The researchers found two interesting results that seem to contradict what it means to be physically educated in 2004 QSPES terms.

First, when participants were asked to perform in a time-constrained environment (i.e., little time to perform a skill and make a decision), those who had been instructed implicitly showed “characteristics that normally are not evident in perception—action behaviour until the performer is much farther along the road to expertise” (Masters et al., 2008, p. 78). The second interesting result was that “analogy learning resulted in less movement-related knowledge than did explicit learning, suggesting that a smaller amount of movement information was accessible to working memory for online control of movement” (Masters et al., 2008, p. 76). Put simply, learners taught with an analogy did better than learners taught explicitly in performing a table-tennis skill and decision making at the same time. Yet they knew less about explicit knowledge “relevant

to the mechanics of the movements” (Masters et al., 2008, p. 76). While the implicit or analogy group performed better, they knew less about the mechanics of their movements. Ironically, if a teacher assessed these students based on the QSPES, they would be termed to be less physically educated, because they would not be able to “use information in order to evaluate and enhance learning in, about and through physical activities” (QSA, 2004, p. 4).

This phenomenon, known as implicit learning, has been researched in other areas besides physical activity related to sport. For example, Berry and Broadbent (1984) asked participants to learn a complex task that involved a sugar production factory keeping a specified level of sugar output. The participants learned and performed the task efficiently, but could not explain the principle underlying their performance.

Similarly, Howard and Howard (1992) required participants to observe a screen divided into four equal sections. An asterisk would appear in one of the sections on the screen. Under each of these four equal sections was a key. The task required the participant to press the key corresponding to the position of the asterisk as quickly as possible. The position of the asterisk was following a complex pattern. The participants showed evidence of learning the pattern, as their response speed improved over time. However, when they were asked to predict where the asterisk would appear next, their performance was not indicative of knowing explicitly.

From this research, it appears that some students in PE classes can learn and perform skills, yet be unable to explain concepts or lack the ability to speak about the knowledge they used to perform a skill. This phenomenon clearly contradicts and questions the concept of the intelligent performer being “analysts, planners and critics in, about and through physical activity” (QSA, 2004, p. 1). While this type of performance by 2004 QSPES standards may not be considered intelligent performance, the problem could arise when it comes time for awarding grades or levels of achievement. If the above phenomenon occurred, where Student A outperformed Student B, yet knew less about his or her performance, then by 2004 QSPES definitions, the teacher would have to assign a lower grade to Student A than Student B, who in fact performed the skills at a lower standard.

## Teaching Styles

The 2004 QSPES stipulated that “learning experiences should draw on a range of pedagogical approaches” (p. 30) such as guided discovery, inquiry, cooperative learning, individualized instruction, games for understanding, and sport education. It is assumed that the 2004 QSPES decided to mention these six teaching styles because they would be helpful and integral in meeting the syllabus objectives and aims. One problem, though, is that the 2004 QSPES seems to have made many assumptions. First, it does not suggest when or for which of the general objectives these teaching styles would be appropriate. Although it does say that “learning experiences should not be related to a specific objective but, where possible, should encompass all objectives” (QSA, 2004, p. 30). It offers no guidance for teachers or definitions of what guided discovery, an inquiry approach, or cooperative learning are or how to do them. The assumption of the 2004 QSPES is that teachers will know what these styles mean and how and when to apply them to assist in creating learning experiences that meet the general objectives. The 2004 QSPES also mentions Multiple Intelligence Theory and Bloom’s Taxonomy, yet neither of these are models or descriptions of teaching styles. The fact that the 2004 QSPES mentions such a variety of teaching styles would mean that it would be expected a variety of teaching styles would be used in learning episodes that allow students to achieve the general objectives. While the 2004 QSPES suggests a variety of teaching styles to be used and some models that can assist in the direct teaching of thinking skills, it does not offer logistics of how or when this might occur. One aim of this research was to ascertain if the 2004 QSPES provided Senior PE teachers with enough guidance to use the suggested teaching styles effectively. In the lack of guidance, teachers could use Mosston and Ashworth’s (2008) Spectrum of Teaching Styles to judge which of the suggested teaching styles are appropriate to use.

The first teaching style that the 2004 QSPES suggests teachers should use is Guided Discovery. Whether this is Mosston and Ashworth’s (2008) Guided Discovery style is not specified (though not likely), and this lack of clarity is a recurring theme in parts of the 2004 QSPES. According to Mosston and Ashworth (2008), Guided Discovery is a style characterized by the logical and sequential design

of questions that lead the student to discover a predetermined concept, principle, or relationship. It is the first style from the *production* cluster, meaning that it is the first time that the learner or student will be producing knowledge that is new to the learner. From these characteristics (producing new knowledge), it can be concluded that this style would be appropriate for teachers who are designing learning experiences that allow the student to demonstrate behavior or thinking that fall under the general objective descriptors for evaluating in the 2004 QSPES. Although the 2004 QSPES has not drawn on this information, it seems that Mosston and Ashworth's (2008) definition highlights that guided discovery is not appropriate for reproducing knowledge and therefore not appropriate for the 2004 QSPES general objective of acquiring.

Inquiry is the next teaching style that the 2004 QSPES suggests for creating appropriate learning experiences. As with many of the other teaching styles, the 2004 QSPES does not define inquiry, suggest when to use it, or suggest the general objectives for which it would be appropriate—any information would need to be sourced from elsewhere. However, the 2004 QSPES presumes that teachers know what it is and have a shared understanding of it. This ambiguous use of the term *inquiry* is common, according to Mosston and Ashworth (2008), who suggest that

this pedagogical term is inconsistently used in the literature and the classroom. Some examples of inquiry teaching (based on the decision and content design) represent the Practice style (guided practice), while others are examples of a divergent process representing either the Practice style or the next style—Divergent Production. Since the general term *inquiry* does not indicate a specific cognitive operation, it could apply to many different teaching-learning behaviours. (p. 222)

Cuevas, Lee, Hart, and Deaktor (2005) suggested, with regard to inquiry learning, that giving a commonly accepted definition is difficult if not impossible. Considering this, it seems unlikely that teachers of 2004 QSPES would have their own common definition and understanding of inquiry learning and how to implement it.

The 2004 QSPES also suggests that learning experiences should draw on the pedagogical approach known as *cooperative learning*. As with many teaching styles, cooperative learning is difficult to define in a consistent way. For example, Johnson and Johnson (2001) defined cooperative learning as “the instructional use of small groups so that students work together to maximise their own and each other’s learning” (p. 455). Similarly, Shoval (2011) suggested that it is children in small groups being “asked to perform external interactive activities, such as performing experiments, demonstrating ideas to their peers, helping each other and talking to each other” (p. 453). As with the mentioned teaching styles, this teaching style lacks clear definition in the 2004 QSPES, which gives no explanation and does not suggest with which general objective it can be used. Mosston and Ashworth (2008) offered their thoughts on the use of this term when they suggested that “the label ‘cooperative learning’ does not carry a fixed decision structure; therefore, the decision within the group situations must be determined before learning conclusions can be made” (p. 111). Again, it appears that the 2004 QSPES presumes a shared common definition and understanding of teachers’ knowledge about when to use such styles, how to use them, and for which general objectives they are appropriate. Clearly, clarity of definitions is needed, but unfortunately this is lacking.

Literature relating to earlier mentioned educational theories and models (Marzano’s Dimensions of Learning and Gardiner’s Multiple Intelligences) will not be examined in greater detail, as this is not one of the aims of this research. However, the 2004 QSPES proposes that teachers can use aspects of Marzano’s Dimensions of Learning, Gardner’s Multiple Intelligences, and Bloom’s Taxonomy to teach the thinking skills required to meet the four general objectives. Note that Gardiner’s Multiple Intelligences (sometimes referred to as MI theory) was not developed as a thinking skills project or a way to teach. In fact, Armstrong (2000) states that “it is a tempting project to want to relate MI theory to any number of learning style theories” (p. 10), but this is difficult because MI theory has a “different type of underlying structure than many of the most current learning-style theories” (p. 10). Armstrong goes further, saying that MI theory is a “cognitive model that seeks to describe how individuals use their intelligences to solve problems and fashion products” (p. 10) and

that it is not “process oriented” (p. 10). On the other hand, Marzano’s Dimensions of Learning is a thinking skills program that is process oriented and, at least, designed to teach thinking skills.

### **The 2010 QSPES**

A new, and still current, Senior PE syllabus for Queensland was published (QSA, 2010c) and with it, some noticeable changes. First, the exit criteria were renamed as *dimensions*. However, the three assessed dimensions remain as acquiring, applying, evaluating (and appreciating), and the exit criteria from the 2004 QSPES of appreciate become *attitudes and values* (QSA, 2010c). Many of the issues identified as being of concern, including many found in this research, were addressed in some capacity—to the credit of the QSA (now Queensland Curriculum and Assessment Authority, QCAA). Most noticeable is that the terminology *new or unrehearsed performance environments* has been removed from the standards matrix and from the 2010 QSPES. Gone also is a section explaining what constitutes a *complex performance environment*. The removal of the terminology *new or unrehearsed* means that *discovery* and *creativity* are no longer necessary to be used as the conscious thought process within the exit criteria (in the 2010 QSPES now known as dimensions) of evaluating.

Similarly, the exit standards (previously exit criteria) reflect this new focus by describing the standards associated with an A level in evaluating:

The student work has the following characteristics:

- consistent and discerning reflection and decision making that enhances physical responses and outcomes in or about authentic performance contexts
- consistent and effective initiation of change or modification of personal and/or team strategies to solve problems in or about authentic performance contexts. (QSA, 2010c, p. 31)

The term *complex performance environments* has been removed and appears to have been replaced with the terminology “authentic performance contexts” (QSA, 2010c, p. 31). These are defined as “contexts that are applicable to the performance of that activity” (QSA, 2010c, p. 35). The way that evaluating is defined remains

largely unchanged from the 2004 QSPES. This definition is congruent with recognizing the cognitive operation of evaluating can be completed with memory as the conscious thought process. These changes make the 2010 QSPES definitions regarding evaluating more congruent than the 2004 QSPES definitions.

Unfortunately, shadows of the inconsistencies in terminology remain regarding evaluating and the 2004 QSPES need for discovery and creativity to be used or assessed. The Physical Performance section of the 2010 QSPES suggests that “performances involve the creative input of students and the application of technical skill in solving a problem or providing a solution” (QSA, 2010c, p. 25). Similarly, in a sample assessment unit for Year 11 Aerobics provided by the QSA, the task asks the students to

Create a 90 second Sport Aerobics routine to your selection of one Sport Aerobics music track of 152–155 beats/minute. The complete performance should reproduce the compulsory elements (high kicks, push-ups and jumping jacks) and skill elements (static strength, power, flexibility and dynamic strength) within the time and space (7×7m) constraints of a Sport Aerobics routine. (QSA, 2010b, p. 1)

The criteria for this task do not allow creativity (in the sense of the word meaning new to the student) to be assessed. Equally, the task asks for reproduction (second line of task) to be used, which clearly necessitates memory as the conscious thought process. Clearly, there is still some confusion with cognitive terminology or intent. All of this is of no consequence though if the *exit standards* no longer define evaluating as the 2004 QSPES did.

One final aspect of the 2010 QSPES is not in the document but provided as support material. The document is titled *Physical Education (2010): Advice for Teachers—Highlighted Standards October 2010*. The document has been produced to “help teachers implement the syllabus in their school setting. The tables that are included in this document highlight:

- different aspects in the standards
- how these aspects vary across the different standards” (QSA, 2010a, p. 2).

The *quality* words and the *cognitive* words have been highlighted in these tables. In some cases, the highlighting of cognitive terms has been done correctly; however, the highlighting of words such as *combination*, *initiate*, and *choice* is questionable. In this case, identifying the cognitive intent of these words in these situations is difficult. The purpose of this article was not to examine and critique the 2010 QSPES and its clarity, but it is further evidence of syllabi with unclear terminology and information for teachers to understand.

Regarding the suggested teaching styles (i.e., guided discovery, inquiry, cooperative learning, individualized instruction, games for understanding, and sport education) in the 2004 QSPES, a cursory examination of teaching practice in Queensland schools by the authors, as teachers and researchers, suggests that few, if any, of the teaching styles suggested were implemented in schools. Certainly, any that were implemented were often not conducted in a manner that typified an effective approach. There are many reasons for this ranging from a preoccupation with known or existing teaching direct styles to a lack of information about teaching styles and their implementation. The syllabus indirectly suggests that the range of suggested teaching styles can help students to develop appropriate thinking skills and be more successful in achieving the general objectives at high levels. However, the suggested teaching styles listed in the syllabus were not particularly helpful or supportive to teaching practice. The 2010 QSPES does not suggest any of these teaching styles, and the syllabus now instructs the teacher to see the QSA website for examples of learning experiences. This move was applied to Queensland syllabi for most teaching areas. All syllabi, it is hoped, evolve over time and perhaps during the development of the 2010 QSPES, it was realized that these concepts were no longer relevant to assisting teachers in implementing the syllabus. This may be the case, but all teachers, irrelevant of subject matter, will use a teaching style to implement syllabi. In this case, it appears that the QCAA has concluded that teachers need no help with this matter, while some research (SueSee, 2012) suggests otherwise with evidence demonstrating that teachers self-reported using a range of teaching styles, yet when they were observed they were not.

With the 2010 QSPES published, and with a further review of this Senior PE syllabus for Queensland students under consideration, it

will be interesting to see if a document emerges that lacks ambiguity. Writers of any new PE syllabi, in Queensland or any other Australian state, need to base their documents on research, not assumption or yet-to-be-proven theories or concepts. They also need to be written with consultation of PE teachers and include relevant professional development. The ability to assess the concept of the intelligent performer evaluating in a complex environment (see new or unrehearsed) as defined by the 2004 QSPES has been strongly questioned using Mosston and Ashworth's (2008) *Teaching Physical Education* and other research from the field of motor learning and cognitive psychology. The 2004 QSPES, as an example of what may typify many syllabi, provides clear examples of terms, concepts, and teaching styles that were not explained well. At the least, doubts were cast about whether the intelligent performer concept holds or can be assessed in the way the 2004 QSPES suggests. Queensland is not alone in its attempts to have integrated PE, but if other states or countries are facing similar challenges to the ones exposed in an examination of the 2004 QSPES, let us look at how they are addressing them with clarity and foresight (based on innovative best practice).

## **Conclusion**

As an example of a syllabus that was inadequate in providing the necessary guidance and understanding for teachers, the 2004 QSPES was built around three points that appear questionable, contradictory, and vague. The situation where a student can only achieve an *A* or *B* grade under the learning objective of evaluating if movement is performed in new or unrehearsed contexts within complex environments (i.e., if evaluating only uses creativity or involves the production of knowledge) is the first point that is questionable. Evaluating can use creativity and produce knowledge, but it can also use memory and involve the reproduction of knowledge.

Another questionable cornerstone around which the 2004 QSPES was built was the concept of intelligent performance. Some of the literature (Berry & Broadbent, 1984; Howard & Howard, 1992; Masters et al., 2008) questions the concept of intelligent performance. It seems likely that there can be (and are) students who are the most skillful yet experience difficulty verbalizing or communicating what

they are doing. Yet they seem to be able to apply this information to improve their performance and take it to a high level. Ironically, if assessed by the 2004 QSPES, they would not attain a high mark, as they have not displayed intelligent performance. In both of these cases, it appeared as if a presumption had been made that teachers had sufficient knowledge to be able to implement vaguely outlined concepts, learning experiences, and teaching styles for which little useful information was given. Any syllabus built around such foundations will most likely find difficulty in its application, teaching, implementation, and assessment. It can be argued that if these three principles are cornerstones of the 2004 QSPES, and if they are ill-defined, contradictory, and questionable, then teachers will likely have trouble applying, teaching, and assessing it. If a syllabus is not clear about what it aims to do, how to do it, and how to assess its educational objectives, then its outcomes will not be what it originally desired. This research was not designed to specifically outline solutions to the concerns raised, although some broad suggestions have been given. It does highlight how a syllabus was written with some conflicting messages, structures, and assessment rubrics, which, when critically examined and compared to research, proved to be questionable and ultimately led to a document that perhaps failed to meet its own expectations.

## References

- Anderson, L. W., & Sosniak, L. A. (Eds.). (1994). *National Society for the Study of Education Yearbooks: 93rd, Pt. 2. Bloom's Taxonomy: A forty-year retrospective*. Chicago, IL: University of Chicago Press.
- Armstrong, T. (2000). *Multiple intelligences in the classroom* (2nd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.
- Arnold, P. (1979). *Meaning in movement, sport, and physical education*. London, England: Heinemann
- Arnold, P. (1985). Rational planning by the objectives of the movement curriculum. *Physical Education Review*, 8, 50–61.
- Ary, D., Jacobs, L. C., & Sorenson, C. (2010). *Introduction to research in education* (8th ed.). Belmont, CA: Cengage.

- Berry, D. C., & Broadbent, D. E. (1984). On the relationship between task performance and associated verbalizable knowledge. *Quarterly Journal of Experimental Psychology A: Human Experimental Psychology*, 36, 209–231. <https://doi.org/10.1080/14640748408402156>
- Boss, K., & Drabinski, E. (2013). *Looking for information literacy: Syllabus analysis for data-driven curriculum integration*. In S. Kurbanoglu, E. Grassian, D. Mizrachi, R. Catts, S. Špiranec (Vol. Eds.), *Communications in Computer and Information Science: Vol. 397. Worldwide commonalities and challenges in information literacy research and practice* (pp. 352–358). Cham, Switzerland: Springer. [https://doi.org/10.1007/978-3-319-03919-0\\_46](https://doi.org/10.1007/978-3-319-03919-0_46)
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27–40. <https://doi.org/10.3316/QRJ0902027>
- Charmaz, K., & Mitchell, R. (1996). The myth of silent authorship: Self, substance, and style in ethnographic writing. *Symbolic Interaction*, 19, 285–302. <https://doi.org/10.1525/si.1996.19.4.285>
- Clarke, A. (2005). *Situational analysis: Grounded theory after the postmodern turn*. Thousand Oaks, CA: Sage. <https://doi.org/10.4135/9781412985833>
- Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage.
- Cuevas, P., Lee, O., Hart, J., & Deaktor, R. (2005). Improving science inquiry with elementary students of diverse backgrounds. *Journal of Research in Science Teaching*, 42, 337–357. <https://doi.org/10.1002/tea.20053>
- Edwards, A. (1989). *School based assessment and curriculum change in Queensland health and physical education*. Brisbane, Australia: University of Queensland.
- Glasby, T. (1999). *Health and physical education: Links between years 1–10 and the senior school*. Brisbane, Australia: Queensland Studies Authority.
- Halpern, D. (1996). *Thinking critically about critical thinking*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Hay, P. (2008). *The social construction of abilities and conduct of assessment in Senior PE* (Unpublished doctoral dissertation). University of Queensland, Brisbane, Australia.

- Howard, D. V., & Howard, J. H. (1992). Adult age differences in the rate of learning serial patterns: Evidence from direct and indirect tests. *Psychology and Ageing*, 7, 232–241. <https://doi.org/10.1037/0882-7974.7.2.232>
- Johnson, D., & Johnson, R. (2001). Cooperation and conflict: Effects on cognition and metacognition. In A. L. Costa (Ed.), *Developing minds: A resource book for teaching thinking* (3rd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.
- Kirk, D. (1983). A new term for a vacant peg: Conceptualising physical performance in sport. *Bulletin of Physical Education*, 19(3), 38–44.
- Kirk, D. (1988). *Physical education and curriculum study: A critical introduction*. London, England: Croom Helm. <https://doi.org/10.1080/0022027880200505>
- Kirk, D. (1989). Cultural research and educational praxis. *Curriculum Perspectives*, 9(4), 41–50.
- Kirk, D., & O’Flaherty, M. (2004, September). *Learning theory and authentic assessment in physical education*. Paper presented at the annual conference of BERA, Edinburgh, Scotland.
- Lewis, A., & Smith, D. (1993). Defining higher order thinking. *Theory Into Practice*, 32, 131–137. <https://doi.org/10.1080/00405849309543588>
- Lyle, J. (2014). Reviewing the literature. In L. Nelson, R. Groom, & P. Potrac (Eds.), *Research methods in sports coaching* (pp. 66–75). New York, NY: Routledge.
- Macdonald, D., & Brooker, R. (1997a). Assessment issues in a performance-based subject: A case study of physical education. *Studies in Education Evaluation*, 23(1), 83–102. [https://doi.org/10.1016/S0191-491X\(97\)00006-0](https://doi.org/10.1016/S0191-491X(97)00006-0)
- Macdonald, D., & Brooker, R. (1997b). Moving beyond the crisis in secondary physical education: An Australian initiative. *Journal of Teaching in Physical Education*, 16, 155–175. <https://doi.org/10.1123/jtpe.16.2.155>
- Masters, R. S. W., Poolton, J. M., Maxwell, J. P., & Raab, M. (2008). Implicit motor learning and complex decision making in time-constrained environments. *Journal of Motor Behavior*, 40, 71–79. <https://doi.org/10.3200/JMBR.40.1.71-80>

- Mosston, M., & Ashworth, S. (2008). *Teaching physical education* (1st online ed.). Retrieved from [https://www.spectrumofteachingstyles.org/pdfs/ebook/Teaching\\_Physical\\_Edu\\_1st\\_Online\\_old.pdf](https://www.spectrumofteachingstyles.org/pdfs/ebook/Teaching_Physical_Edu_1st_Online_old.pdf)
- Mruck, K., & Breuer, F. (2003). Subjectivity and reflexivity in qualitative research—The FQS issues. *Forum: Qualitative Social Research*, 4(2). Retrieved from <http://nbn-resolving.de/urn:nbn:de:0114-fqs0302233>
- Newman, F. (1990). Higher order thinking in teaching social studies: A rationale for the assessment of classroom thoughtfulness. *Journal of Curriculum Studies*, 22, 41–56. <https://doi.org/10.1080/0022027900220103>
- Nickerson, R. S., Perkins, D. N., & Smith, E. E. (1985). *The teaching of thinking*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Penney, D., & Kirk, D. (1998). *Evaluation of the trial-pilot senior syllabus in physical education in Queensland secondary schools*. Brisbane, Australia: Board of Senior Secondary School Studies Queensland.
- Queensland Board of Senior Secondary School Studies. (1998). *Queensland senior physical education*. Brisbane, Australia: National Library of Australia Cataloguing-in Publication Data.
- Queensland Studies Authority. (n.d.). About us. Retrieved May 22, 2013, from <http://www.qsa.qld.edu.au/607.html>
- Queensland Studies Authority. (2004). *Physical education senior syllabus*. Brisbane, Australia: Author.
- Queensland Studies Authority. (2010a). *Physical education 2010: Highlighted syllabus standards* [Table]. Retrieved from [https://www.qcaa.qld.edu.au/downloads/senior/snr\\_physical\\_ed\\_10\\_syll\\_standards.pdf](https://www.qcaa.qld.edu.au/downloads/senior/snr_physical_ed_10_syll_standards.pdf)
- Queensland Studies Authority. (2010b). *Physical education (2010): Sample assessment instrument and student response*. Retrieved from [https://www.qcaa.qld.edu.au/downloads/senior/snr\\_physical\\_ed\\_10\\_as\\_response.pdf](https://www.qcaa.qld.edu.au/downloads/senior/snr_physical_ed_10_as_response.pdf)
- Queensland Studies Authority. (2010c). *Physical education senior syllabus*. Brisbane, Australia: Author.

- Ramalho, R., Adams, P., Huggard, P., & Hoare, K. (2015). Literature review and constructivist grounded theory methodology. *Forum: Qualitative Social Research*, 16(3). Retrieved from <http://nbn-resolving.de/urn:nbn:de:0114-fqs1503199>
- Reddan, G. (2000). *Teacher curriculum decision-making in senior physical education* (Unpublished doctoral dissertation). Griffith University, Brisbane, Australia.
- Sbaraini, A., Carter, S. M., Evans, R. W., & Blinkhorn, A. (2011). How to do a grounded theory study: A worked example of a study of dental practices. *BMC Medical Research Methodology*, 11, 1–10. <https://doi.org/10.1186/1471-2288-11-128>
- Shoval, E. (2001). Using mindful movement in cooperative learning while learning about angles. *Instructional Science*, 39, 453–466. <https://doi.org/10.1007/s11251-010-9137-2>
- SueSee, B. (2012). *Incongruence between self-reported and observed senior physical education teaching styles: An analysis using Mosston and Ashworth's Spectrum* (Doctoral thesis, Queensland University of Technology, Brisbane, Australia). Retrieved from <https://eprints.qut.edu.au/60945/>
- Swartz, R. J., & Perkins, D. N. (1990). *The Practitioners' Guide to Teaching Thinking Series. Teaching thinking: Issues and approaches* (Rev. ed.). Pacific Grove, CA: Midwest Publications, Critical Thinking Press and Software.