

2015

# The 'integration of theory and practice' as a central focus for senior schooling Physical Education Studies

Andrew Jones

*Edith Cowan University*, [andrew.jones@ecu.edu.au](mailto:andrew.jones@ecu.edu.au)

---

This paper was originally published as Jones, A., & Penney, D. (2015). The 'integration of theory and practice' as a central focus for senior schooling Physical Education Studies. In *Values into Action - A Brighter Future: Edited Proceedings of the 29th ACHPER International Conference*, (pp. 12-22).

Adelaide, April 13-15, 2015.

Original article available [here](#)

This Conference Proceeding is posted at Research Online.

<http://ro.ecu.edu.au/ecuworkspost2013/2352>

# Edith Cowan University

## Copyright Warning

You may print or download ONE copy of this document for the purpose of your own research or study.

The University does not authorize you to copy, communicate or otherwise make available electronically to any other person any copyright material contained on this site.

You are reminded of the following:

- Copyright owners are entitled to take legal action against persons who infringe their copyright.
- A reproduction of material that is protected by copyright may be a copyright infringement. Where the reproduction of such material is done without attribution of authorship, with false attribution of authorship or the authorship is treated in a derogatory manner, this may be a breach of the author's moral rights contained in Part IX of the Copyright Act 1968 (Cth).
- Courts have the power to impose a wide range of civil and criminal sanctions for infringement of copyright, infringement of moral rights and other offences under the Copyright Act 1968 (Cth). Higher penalties may apply, and higher damages may be awarded, for offences and infringements involving the conversion of material into digital or electronic form.

## **The “integration of theory and practice” as a central focus for senior schooling Physical Education**

**Andrew Jones & Professor Dawn Penney**

*Edith Cowan University, Perth & Monash University, Melbourne*

*In February 2007 a new senior secondary Physical Education Studies (PES) was introduced in Western Australia (WA). The course was one of approximately 50 new courses that were developed in conjunction with the introduction of new Western Australian Certificate of Education (WACE). Notably, the rationale for PES claims that the “integration of theory and practice is central to studies in this course” (Curriculum Council of WA, 2009, Physical Education Course Syllabus, p. 2). This paper draws on findings from an ongoing PhD study to examine the notion of integrated theory and practice in the context of senior schooling. It will acknowledge that pedagogy is not a discrete entity, and is influenced by a range of different factors, not least in senior schooling, examinations. The paper initially draws on literature addressing pedagogical practice in physical education (PE) in senior schooling, as a backdrop to the case for “the integration of theory and practice” (in the context of PES in WA) and briefly reports on how this was progressed in the initial course design and then subsequently during implementation. Attention then focuses on a series of case studies which reflect the ultimate aim of the study, that of identifying legitimate and original practice in the field of senior school PES, and specifically integrated theory – prac pedagogy. The paper discusses different ways in which integration has been interpreted and enacted in the case study schools and the factors influencing the various approaches and responses identified. This paper extends insights into the various discourses impacting integration and highlights the need for more work that engages with the complexities of how curriculum and assessment discourses can be effectively mediated through pedagogical practice.*

### **Introduction**

In February 2007 a new senior secondary Physical Education Studies (PES) course was introduced in Western Australia (WA). The course was one of approximately 50 new courses developed in conjunction with the introduction of new Western Australian Certificate of Education (WACE). The changes arose from a review of post-compulsory schooling (later to be renamed Senior Schooling) which identified the need for greater alignment between senior secondary education and Kindergarten to Year 10 curriculum; a broadening of the range of tertiary entrance options and subjects available to students; and a rationalisation of course structures, assessment systems and subject selection criteria in senior secondary education (Curriculum Council of WA, 2002; see also Penney & Walker, 2007). For the first time in WA, achievements in PES would be recognised for tertiary entrance. As discussed elsewhere (Penney & Hay, 2008; Penney, Jones, Newhouse & Campbell, 2012), this presented challenges and opportunities for the new course development, including how to address a

recurring issue in physical education (PE) internationally, of how to effectively integrate *theoretical* and *practical* dimensions of learning and legitimise “multiple ways of knowing” (Brown & Penney, 2013) in senior secondary and/or examination courses<sup>1</sup>.

This paper draws on findings from a doctoral research study that is investigating this issue amidst ongoing curriculum change and reform, specifically in the context of the initial years of implementation of the new PES course in WA. Following MacPhail (2004), Bernstein’s (1990) model of the social construction of pedagogic discourse has been used as a framework to locate and position teachers in relation to other stakeholders in the design process and implementation phase. The study comprises three phases that have addressed different sites of influence upon teachers’ thinking about prospective integration of *theory and prac* in the new PES, and explored how integration is being developed in practice. Previous presentations (Jones & Penney, 2013) and work in progress has directed attention to issues and influences surrounding the development of the PES official course text. This paper pursues the case study phase of data collection, where the focus has been on teachers’ interpretations and enactment of the new PES course.

The paper necessarily begins by providing some essential background to the research, specifically in regard to the new PES course and the theoretical frame for the study. We discuss selected literature in PE associated with senior schooling as a backdrop to a presenting a definition of integrated theory and practice. Details of the methodology and data gathering methods employed are provided, before drawing on data from a series of case studies, to discuss the different ways in which 'integration' has been interpreted and enacted in schools and the factors influencing the various approaches and responses identified. Finally, discussion returns to further explore the various discourses impacting integration and highlights the need for more work that engages with the complexities of how curriculum and assessment discourses can be effectively mediated through pedagogical practice.

### **Background and development of the new PES course in WA**

Published in 2002, the document “*Our Youth Our Future. Post-Compulsory Education Review*” (Curriculum Council of Western Australia, 2002) provided recommendations that became the key point of reference for the reform of senior secondary schooling in WA and development of some 50 new courses, including PES. The process of producing the new PES official text reaffirmed the political and contested nature of curriculum development. This paper does not pursue the official text development but rather, is concerned with interpretation and enactment of the new PES course.

The PES course content was outlined in relation to three content areas: (i) movement, skills, strategies and tactics; (ii) physiological dimensions; and (iii) social dimensions. A notable feature of the PES course in WA (particularly in relation to the interest in prospective

integration of theoretical and practical knowledge) is that all units of study address each of the three content areas. The design thus sought to prompt teachers and students working at any level to explore connections between the three content areas, with depth and complexity increasing in more advanced units.

Assessment arrangements play a critical role in shaping teachers' thinking about the nature and content of the teaching and learning experiences they will develop within a senior secondary PE context. The new PES course in WA prescribed three types of assessment to be used in school based assessment:

1. Performance/Response: The assessment of students engaged in an activity, on-the-spot evaluation of performance and student reflective response about their forms and settings;
2. Investigation: Investigation of own and others' current participation in physical activity, participation potential, physical activity issues and social contexts; and,
3. Response: Students apply their knowledge and skills when analysing and responding to a series of stimuli or prompts. (Curriculum Council of Western Australia, 2008, p.9)

The external examination comprised a written paper with a weighting of 70% and a practical examination weighted 30% of the total mark. School based assessment marks are scaled against the external examination score, highlighting the importance of the examination component. The course document did not prescribe the physical activity contexts through which course content should be taught and/or assessed for the school-based component of assessment. Hence, from a teaching and learning perspective teachers were left to make local decisions about the sporting and physical activity contexts that they would use to illustrate and explore content, both practically and theoretically. The nature of the units (incorporating multiple areas of content) and the assessment types identified above clearly established potential for the integration of theoretical and practical dimensions of learning in PES. Specifications developed for the practical element of the external examination in 2008 did, however, detail 14 sports that students could select from as the context for their "performance assessment" in the examination. This could be the same activity as that featuring in the units studied at school, or a different activity.

This research study has addressed the following three research questions:

*Q1. What were the discourses that formed the policy principles from which the PES was designed, and why was there a particular "central" focus on the "integration of theory and practice"?*

*Q2. What texts and “local translations” (Fullan, 1999) of the PES central focus, to integrate theory and practice, have been made at “intermediary sites” (Hargreaves, 1986) during initial implementation?*

*Q3. What integrated “theory and prac” pedagogical practice has emerged from the implementation process?*

This paper reports on data pertaining specifically to questions 2 and 3.

### **Conceptual Framework - Bernstein’s (1990) model of the social construction of pedagogical discourse**

The questions above reflect that the study has drawn upon Bernstein’s (1990) model of the social construction of pedagogical discourse, with the intent of extending understanding of the discourses, processes, texts and “translations” that formed course design and implementation, and in turn planning for teaching, learning and assessment. The findings reported in this paper relate to actions and influences relating to the development and enactment of the new PES course that are associated with what Bernstein (1990) termed the Official Recontextualising Field (ORF), the Pedagogic Recontualising Field (PRF), and the “secondary field”. In the context of PES, the recontextualising fields centre on organisations and agencies such as the Curriculum Council of WA (now the School Curriculum and Standards Authority (SCSA), various educational systems and sectors and the States Tertiary Institutions. Other agencies active in these fields include ACHPER WA, commercial textbook providers, and local Health and Physical Education (HPE). School based teachers are considered the prime agents in the “secondary field”. Bernstein stresses that the actions, negotiations and decisions within the recontextualising fields and between those fields and the secondary field, are critical in gleaning a true understanding of pedagogical practice. The emphasis is that discourses flow between fields and are changed in this process. Time and space precludes further exploration of Bernstein’s model but the authors lent heavily on the work of Bernstein (1990), MacPhail (2004), MacPhail and Halbert (2005), Penney (1998, 2013), Penney & Chandler, (2000), and Penney and Evans, 1999, in framing this study.

### **Integrated and interrelated practice in Physical Education**

Past studies in senior secondary physical education (Penney & Kirk, 1998; Thorburn, 2007) have noted that amidst curriculum changes, teachers typically felt comfortable in using familiar pedagogy practices and/or were slow to evolve, or adapt existing pedagogies. A key issue in this regard is the pedagogical linkage of knowledge and understanding to and in practical settings. Macdonald and Brooker (1997), Hay and Penney (2009), Brown (2013), Brown and Penney (2013), Thorburn (2007) and Thorburn and Collins (2003) all recognise Arnold’s 1979 and 1985 work as continuing to be a useful reference point for “situating physical activity as a site for learning and assessment, and promoting integrated thinking

about content and contexts of learning in PE” (Hay and Penney, 2009, p.393) and pedagogy to support it. Space prevents a detailed review of Arnolds conceptualisation of “in, through and about” movement, but we support Brown’s (2013) call for his original work to be revisited. Importantly for this study, Arnold emphasises that there is a connection between participation *in* movement (through the body) and understanding it (through rational knowledge). In the context of this paper and the broader study, it is this connection or *integration* that forms the basis for a working definition of integrated theory and practice as; an understanding *about* theoretical knowledge and principles developed and utilised *in* and *through* practical activities, contexts and situations. As such theory and practice are *interrelated* and *integrated*. Hay and Penney (2009) similarly referred to the “interrelatedness of knowledge, process (cognitive and motor), skills and the affective domain” (p.395). This study has explored the ways in which this notion has been expressed in the development of the new official curriculum text for PES in WA, and in subsequent interpretations and enactment of the text.

## **Methodology**

Qualitative, interpretative, naturalistic and subjective methods have been utilised in the study. Document analysis and semi structured interviews were used to explore research questions one and two (above). A series of school based case studies, utilising documentary and interview data were undertaken for research question three.

The selection of case study schools emerged from preceding phases of data collection and analysis. In particular, interviewees were asked “Where do we see legitimate and original integrated ‘theory – prac’ pedagogical practice”? Various, interviewees were able to offer some teacher or school names, with notable duplication of names offered occurring. Based on these purposeful sampling was used to approach four schools (note at the time of writing only three of the four case studies had been completed. For the purpose of this paper they are referred to as **Schools A, B and C**). In accordance with institutional ethics approval that had been previously granted, consent for participation was gained from relevant Principals and PES teacher(s). The sample schools represented a cross section of system and sectors (State Government, Catholic and Anglican), and included three metro and one country WA school. One teacher from each school was represented. Documentary data comprised unit plans, assessments and tasks, including marking keys and/or rubrics. Semi-structured interviews with teachers were recorded and field notes were also taken.

Data analysis has centred on the question, *What integrated “theory and prac” pedagogical practice has emerged from the implementation process?* The following section reports findings from three case study schools and focuses on the ways in which “integration of theory and practice” (Curriculum Council of WA, 2009, Physical Education Course Syllabus,

p. 2), has been interpreted and enacted, and the factors influencing the various approaches and responses identified.

### **What is integrated theory and practice?**

All case study school teachers were asked to clarify their understanding of the phrase “Integration of theory and practice”. Importantly the reader should understand that the PES syllabus, while claiming that the “integration of theory and practice is central to studies in this course” (Curriculum Council of WA, 2009, Physical Education Course Syllabus, p. 2) does not define this phrase or provide any specific guidance to its role in course design, assessment or teaching and learning practices in the syllabus. In interviews teachers were able to articulate their understanding of the phrase.

**School A** understood the “integration of theory and practice” to be “about experiences”, and the “consistent application and practice of content through experiences, as well as written consolidation. Students need to experience it and then put it into practice”. **School B** shared the emphasis on practical experience, activity and application but clarified that “theory is the content of the syllabus, therefore integration of theory and practice is activity that supports the students understanding of the content” and importantly “motivates them to learn the syllabus content”. Similarly for **School C** practical application is central, adding, however, that integration is a two way process, stating, “theory is knowledge, practice is practical application. It’s doing and applying knowledge to doing and vice versa. It’s theory to practice and practice to theory”. Importantly for this school understanding is not limited to syllabus content alone. They made the point that “the theory does not have to be syllabus content.....I am interested in the kids viewing this course from a number of lenses which are content based, but also “what do the examiners see when you perform or write something done? I want my kids to understand the examination process as well and apply that knowledge to their written and practical performance”.

### **The “Integration of theory and practice” in course design, assessment and pedagogical practice**

While there are some synergies between the above understandings of the phrase “integration of theory and practice”, the articulation of these in teachers’ course design, assessment and pedagogical practice, differed considerably.

The teacher from **School C** indicated that the integration of theory and practice was a “fundamental feature in planning considerations” and stated, “the unit is mapped out to include syllabus content, aligned to a practical illustration or a practical session”.

Pragmatically and to promote flexible practice, students were required to come to PES in PE uniform even when timetabled in a classroom. “Free space” around the school, such as the unused corner of an oval, pool stand or spare tennis court, were used on an ad-hoc basis. The



teacher felt that this flexible approach to location reflected and supported the integration of theory and practice. Pedagogically, “I think I do it day in day out. I start most, but not all, lessons with a practical based example of what I am going to focus on. It might be a few balls spinning out in the yard or a bit of You Tube in class or quickly on my ipad. Whatever, it’s something practical that they see or do”. The teacher was keen to point out that their approach is firmly grounded in student’s needs but also has a pragmatic aspect in that, “it’s not the (exam) paper itself that requires theory into practice, that’s not solely why I teach the way I do. I am not teaching to the test, I simply think my students learn best like this. Also, it’s like raising the dead some time, so getting them up doing something is a necessity as well”.

Broadly, the assessment schedule at **School C** included aspects of the integration of theoretical and practical components of the syllabus. For example, on two occasions practical performance tasks act as both assessments of practical skills, and also a data gathering exercise for a separate task. Another required students to use two performance analysis models and, in short, collect data, analyse self and others, apply theoretical “subdisciplines” and design an intervention applied through identified relevant coaching methods.

In **School B**, articulation of the phrase “integration of theory and practice” typically manifested itself by “flip flopping between theory and practice”. This took two forms; firstly, adhoc “flip flopping” where interrelated principles such as exercise physiology and motor learning are linked. Secondly, through the timetabling of classes where across a week, one theory/prac lesson per week is scheduled, alongside two “theory” lessons and one practical performance session. In this way a conscious attempt was made to integrate theory/prac, not necessarily in relation to content strands (e.g. Biomechanics to Exercise physiology) but in teaching and learning approaches, such as unassessed lab activities. The assessment schedule in **School B** had a heavy bias on examination style tasks for students, including “investigations”. Typically, assessment tasks had a discrete focus. Practical stimulus and examples of performance based data were used for most exams and investigation tasks, but they were not related to practical movement experiences and/or to school based practical performance sessions.

In **School A**, there was little evidence of planned integration of theory and practice or theoretical content strands, either in the unit outline, pedagogical practices or assessments. There were plenty of examples of practical or “sport” based examples used to illustrate propositional knowledge or to act as a prompt in a task or a stem to an exam (for example; the Olympics and Soccer World cups in different continents as contexts for a tasks on competing in varying environmental conditions) or test style question (for example; photographic stills of a Badminton serve as a basis for a question on segmental interaction). Practical performance sessions in Volleyball were used on an ad hoc basis to illustrate “theory” covered elsewhere, but this was not embedded in the unit outline. Practical

performance tasks were typically skills based, reflecting the tasks within the practical examination. Typically, “response style” or examination focused questions featured in written assessment. For “investigations” students were given questions to research, before answering short and long answer questions in class.

### **Factors influencing the approaches and responses identified.**

This section provides a synopsis of some factors influencing the approaches to the delivery of PES in WA, and more specifically the integration of theory and practice in the case study schools. The influence of time considerations, the syllabus design, content and requirements, and the external Australian Tertiary Admissions Rank (ATAR) examination for PES are discussed. This is not an exhaustive list of influences and reflects limitations of space. The influence of other factors including professional development, text books, sample exams, support materials and individual school imperatives are acknowledged and will be discussed elsewhere.

#### ***Time***

Time (**School A and B**) was an overriding feature in all facets of PES planning, including time to plan lessons, prepare resources, mark work, and to get through syllabus content. Significantly, integrated theory and practice is considered time consuming in terms of time taken to teach and prepare. There was a significant emphasis on “teaching to the (ATAR) test” in terms of the approach taken to planning, sequencing content and the nature of assessment tasks. Propositional knowledge in the syllabus was taught in order of perceived degree of difficulty, as related to the students, with the easiest content given least time and taught early in the year and the hardest given most time and taught as close to the exam as possible (**School A and C**).

#### ***The PES syllabus***

The PES syllabus emerged as a major sticking point in the promotion of an integrated theory and practice approach (**School A, B and C**). Reasons for this included, firstly, a major emphasis placed by the School Curriculum and Standards Authority (SCSA, formerly the Curriculum Council of WA) on testing the PES syllabus content. Teachers felt that despite the rhetoric in the course Rationale, the syllabus does not require students to integrate theory and practice (**School A and B**). Further, the syllabus does not provide specific guidance or sign-posts to teachers towards the integration of theory and practice. Hence, schools often do not approach it in that way (**School A, B and C**). Secondly, assessment types can be broadly interpreted and adapted (e.g. **School A** where “investigations” are turned into tests). The integration of theory and practice is not seen as a central feature of assessment and the rationale is a part of the syllabus that is not read widely (**School A and B**). As a consequence, teachers feel compromised and favour pragmatic considerations in their design of assessment.

### ***The PES ATAR Examination***

The PES ATAR exam was considered a “knowledge based” (**School C**) one, which requires students to “hit the marks” (**School A**) by using key syllabus based terminology. Many school assessments are overtly designed to reflect the fact that students will ultimately take the PES ATAR exam (**School A, B and C**). Consequently, maximum weightings are offered to “response” (**Schools A, B and C** all offered a maximum 50% weighting to “response”), while aspects of investigation also reflect test like conditions (**School A and B**), variously taking the form of in class essays to simulate the ATAR exam and “save time” (**School A**).

### **Discussion**

Space precludes detailed analysis of the findings above with reference to the theoretical frames used in this study, or in-depth discussion of data in relation to different understandings of “integrated theory and practice” in PES in WA. The following discussion points are necessarily selective and are intended specifically to support professional engagement with issues pertinent to senior secondary physical education teaching in schools throughout Australia and internationally.

The data highlights that broadly speaking, in Arnold’s terms, teachers see the “integration of theory and practice”, in the following terms: theoretical knowledge (syllabus content) *about* movement (practical) should be taught *in* and *through* practical activities and examples. This recognises some possibilities presented by Arnold’s conceptualisation, but at the same time overlooks other pedagogical possibilities and echoes Thorburn’s (2007) and Brown and Penney’s (2013) call for further exploration of the application of Arnold’s work to thinking about curriculum, pedagogy and assessment in senior secondary physical education.

Secondly, the data highlights that it is naïve to believe that the philosophical basis of a course such as the PES in WA will take precedence over pragmatic and accountability features, such as the ATAR exam and Syllabus adherence. Teachers’ pedagogy is no “island” and is clearly impacted on by many influences. Teachers (often in response to administrators and parents) in this study were quite openly and understandably seeking to reconcile classroom practice with the needs of their students, in the context of the end game, namely the ATAR exam.

### **Conclusion**

Locating the findings presented here within the broader study, we point to the need for pedagogic practice to be seen in and amidst complex contexts of curriculum development, negotiation and interpretation. In WA we have seen clear tensions emerge between the reform intent, the PES syllabus, guidance and advice issued by various stakeholders, and the format and content of the ATAR exam. The data presented reflects that currently, there is a lack of clarity for teachers in relation to what the pedagogical intent of the new PES is, and further,

there are several factors seemingly inhibiting the development of “integration” as articulated in the course rationale as a central facet of the new PES in WA.

## References

- Arnold, P. (1979). *Meaning in movement, sport and physical education*. London: Heinemann.
- Arnold, P. (1988). *Education, movement and the curriculum*. London: Falmer.
- Bernstein, B. (1990). *The structuring of pedagogic discourse. Volume IV. Class, codes ad control*. London: Routledge..
- Brown, T. D. (2008). Movement and meaning-making in physical education. *ACHPER Healthy Lifestyles Journal*, 55(2/3), 1–5.
- Brown, T. D. (2013). A vision lost? (Re)articulating an Arnoldian conception of education 'in' movement in physical education. *Sport, Education and Society*, 18(1), 21-37.
- Brown, T. D., & Penney, D. (2013). Learning 'in', 'through' and 'about' movement in senior physical education? The new Victorian Certificate of Education Physical Education *European Physical Education Review*, 19(1), 39-61.
- Curriculum Council of Western Australia (2002). *Our Youth, Our Future. Post-Compulsory Education Review*. Perth: Curriculum Council of Western Australia.
- Curriculum Council of Western Australia (2009). *Physical Education Studies*. Perth: Curriculum Council of Western Australia.
- Hay, P., & Penney, D. (2009). Proposing conditions for assessment efficacy in physical education. *European Physical Education Review*, 15(3), 389-405.
- Jones, A. Penney, D. Newhouse, P. & Campbell, A. (2009). Digital assessment in high stakes Physical Education practical examinations. In T. F. Cuddihy & E. Brymer (Eds.), *Creating Active Futures. Edited Proceedings of the 26<sup>th</sup> ACHPER International Conference* (pp.217-232). Brisbane, Australia: Queensland University of Technology.
- Jones, A., & Penney, D. (2013). News from WA.....(more than just iron ore and great footy teams) – policy principles to course design. In J. Quay & A. Mooney (Eds.), *A defining time in Health and Physical Education: Proceedings of the 28th ACHPER International Conference* (pp. 64-73). Melbourne, November 27–29, 2013.
- Macdonald, D., & Brooker, R. (1997). Assessment issues in a performance-based subject : A case study of physical education. *Studies in Educational Evaluation*, 23(1), 83-102.
- MacPhail, A. (2004). The Social Construction of Higher Grade Physical Education: The Impact on Teacher Curriculum Decision-making, *Sport, Education and Society*, 9(1), 53–73.
- MacPhail, A. & Halbert, J. (2005). The Implementation of a revised Physical Education syllabus in Ireland: Circumstances, rewards and costs. *European Physical Education Review*, 11:287- 308:056769

- Penney, D. (2013). From policy to pedagogy: prudence and precariousness; actors and artefacts. *Asia – Pacific Journal of Health, Sport and Physical Education*, 4(2), 189-197
- Penney, D. (2008). Playing a political game and playing for position. Policy and curriculum development in health and physical education, *European Physical Education Review*, 14(1), 33\_50.
- Penney, D. (2013). Points of tension and possibility: boundaries in and of physical education. *Sport, Education and Society*, 18(1), 6-20.
- Penney, D. & Evans, J. (1999). *Politics, Policy and Practice in Physical Education*. London: E & FN Spon.
- Penney, D., & Hay, P. (2008). Inclusivity and senior physical education. Insights from Queensland and Western Australia. *Sport, Education and Society*, 13(4), 431-452.
- Penney, D. & Kirk, D. (1998). Changing thinking, changing practice in curriculum development. Paper presented at the *ICHPER Conference*, London, 14–19 July.
- Penney, D. & Mr. Walker (2007). Senior secondary schooling in Western Australia: Transforming curriculum, lives and society? *Curriculum Perspectives*, 27(3), 22\_35.
- Penney, D., Jones, A., Newhouse, P., & Cambell, A. (2012). Developing a digital assessment in senior secondary physical education. *Physical Education and Sport Pedagogy*, 17(4), 383-410.
- Thorburn, M. (2007). Achieving conceptual and curriculum coherence in high-stakes school examinations in Physical Education, *Physical Education and Sport Pedagogy*, 12(2), 163\_184.
- Thorburn, M. & Collins, D. (2003a). Integrated curriculum models and their effects on teachers' pedagogy practices, *European Physical Education Review*, 9(2), 185-209.
-