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AUTHENTIC LEARNING TASKS AND ASSESSMENT IN PHYSICAL EDUCATION TEACHER EDUCATION

Tareas de aprendizaje y evaluación auténtica en la formación del profesorado de educación física

Tarefas de aprendizagem e de avaliação autêntica na formação de professores de educação física

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Abstract

Traditionally, physical education teacher education programs (PETE) prepare pre-service PE teachers through various separate courses and by providing authentic teaching-learning situations where learned knowledge and skills can be applied. However, within this fragmented educational approach a lack of transfer of what is learned in university and what is asked during authentic teaching situations can be observed. In order to better prepare students to become effective PE teachers, Fontys University completely redesigned their PETE program by placing authentic learning tasks at the center of the curriculum. As a consequence, in our assessment program we cover various levels of Miller's pyramid and make high stakes (summative) decisions at the end of a unit only when preceded by and based on multiple low-stake assessment data points. The low stake data-points inform students on their development and also inform teacher educators on the effectiveness of the educational program and/or their scaffolding or guidance.

Keywords: *Physical education teacher education; 4C/ID model; learning tasks; formative assessment; programmatic assessment*

Resumen

Tradicionalmente, los programas de formación de profesorado de educación física (FIPEF) preparan a los profesores de EF en formación mediante diferentes asignaturas y facilitando situaciones de enseñanza-aprendizaje auténticas, en las que se pueden aplicar los conocimientos y habilidades adquiridas. Sin embargo, en este enfoque educativo fragmentado se puede observar una falta de transferencia entre lo que se aprende en la universidad y lo que demandan las situaciones de enseñanza auténticas. Con el fin de preparar mejor a los estudiantes y que se conviertan en profesores de educación física eficientes, la Fontys University rediseñó completamente su programa de FIPEF, al colocar las tareas de aprendizaje auténticas en el centro del currículo. Consecuentemente, en nuestro programa de evaluación cubrimos varios niveles de la pirámide de Miller y tomamos decisiones importantes (sumativas) al final de una unidad de enseñanza solo cuando están precedidas y basadas en muchos momentos de evaluación de menor importancia. Estos momentos informan a los estudiantes sobre su desarrollo y también informan a sus formadores educadores sobre la efectividad del programa educativo y/o de su trabajo de andamiaje u orientación.

Palabras clave: *Formación del profesorado de educación física; modelo 4C/DI; tareas de aprendizaje; evaluación formativa; evaluación programática*

Resumo

Tradicionalmente, os programas de formação de professores de educação física (PFPEF) preparam professores estagiários de EF através de várias disciplinas onde são promovidas várias situações autênticas de ensino-aprendizagem em que podem aplicar o conhecimento e habilidades aprendidas. No entanto, a fragmentação dentro das abordagens educativas torna visível a falta de transfer do que é aprendido na universidade e o que é pedido durante as situações de ensino autênticas. De forma a preparar melhor os seus alunos para que se possam tornar professores de EF competentes, a Fontys University alterou completamente o seu PFPEF, colocando as tarefas de aprendizagem autênticas no centro do currículo. Como consequência, o nosso programa de avaliação abrange vários níveis da pirâmide de Miller e as decisões de aprovação ou não (sumativas) são tomadas no final da unidade apenas quando precedidas e baseadas em vários registos de avaliação de menor importância. Estes

registos informam os alunos sobre o seu desenvolvimento e também os professores sobre a eficácia do programa de formação e/ou da sua mentoria ou orientação.

Palavras-chave: *Formação de professores de educação física; modelo 4C/DI; tarefas de aprendizagem; avaliação formativa; avaliação programática*

Authentic learning tasks and assessment in physical education teacher education

Teaching physical education (PE) is a complex profession. PE teachers are not only expected to ensure the development of various competencies within their pupils (e.g. movement skills, knowledge, fair-play and cooperation), but also to monitor pupils' progression and evaluate the effectiveness of the PE program overall. To achieve these outcomes, teachers should be able to design and teach challenging, fun and appropriate lessons for all pupils. Traditionally, PE teacher education programs (PETE) prepare pre-service PE teachers for these complex tasks through courses in which various separate subjects (e.g. pedagogy, psychology, physiology, teaching games, gymnastics) provide students with the necessary knowledge and skills. At varying stages in the curriculum students then engage in teaching-learning situations (in university, or during school placement) where they are expected to successfully integrate and apply the learned skills and knowledge. However, within this educational approach various complex tasks are broken up into distinctive elements without taking their interaction and coordination into account (Van Merriënboer, Clark, & Croock, 2002). Consequently, this might lead to situations where students, although equipped with ample knowledge and skills, are not able to transfer these to a 'real life' teaching situation (Clark & Estes, 1999).

With this background and infused by educational theory and developments within higher education and primary and secondary school PE, Fontys School of Sports Studies decided to completely reform its PETE curriculum. In order to avoid the fragmentation and compartmentalization described above we employed the Four Components Instructional Design Model (4C/ID model; Van Merriënboer et al., 2002, 2010, 2018) as a theoretical background to design the new curriculum. Within this model learning tasks form the backbone of the curriculum and are defined as concrete, authentic, whole-task experiences (Van Merriënboer et al., 2002). Therefore, a first step in redesigning the PETE curriculum was to identify all the complex tasks that a PE

teacher performs in practice and to identify the underlying skills and knowledge needed to perform these tasks. Then, a skill hierarchy was composed, which allowed us to transform these skills and knowledge into sets of distinct learning tasks to be presented to students within the curriculum. An example of a learning task might then be '*assess your pupils during an invasion games unit by employing formative assessment*' or '*design and teach a gymnastics lesson concerning the theme 'balancing' in which you differentiate for the various skill levels in your class'*. In order for students to be able to successfully perform these learning tasks, they are provided with supportive information (information helpful for problem-solving, reasoning, explaining, etc.) and procedural information (just-in-time information prerequisite for performing routine aspects of learning tasks) (Van Merriënboer et al., 2013). Based on this model, a distinctive feature within our curriculum is the importance of school placement. Each year of the Fontys PETE four-year bachelor consists of four 10-week thematic units of education in which students spend two days per week in their work placement school. During school placement they are working on the same (thematic) learning tasks as in university, thus ensuring a transfer of knowledge and skills into practice.

The assessment framework within our PETE curriculum is based upon Miller's (1990) pyramid. Within this framework, the lower levels in the pyramid are primarily focused on cognitive aspects (Knows & Knows How; e.g. knowledge tests, written exams) while the higher levels are focused on behavioral aspects (Shows How & Does; e.g. skill performance, teaching). Assessment tasks in the lower levels of Miller's pyramid tend to have higher levels of reliability and lower levels of validity, while assessments tasks in de higher levels tend to have high levels of validity and lower levels of reliability. To overcome this challenge, we employed a programmatic assessment approach (van der Vleuten et al., 2012). An integral approach to the design of an assessment program with the intent to optimize its learning function, decision-making function and curriculum quality-assurance function (Van der Vleuten et al., 2015). This implies covering various levels of Miller's (1990) pyramid in our assessment programs and making high stakes (summative) decisions at the end of the course, program or year only when preceded by and based on multiple low-stake assessment data points. The low stake data-points serve the purpose of formative assessments, providing students with information on their development while also

informing teacher educators on the effectiveness of the educational program and/or their scaffolding or guidance.

Within this approach we embedded the basic principles of formative assessment (Wiliam & Leahy, 2018); (1) communicating learning goals and success criteria at the onset of each new unit, (2) providing feedback to students on their progression towards these goals, and (3) providing feed-forward to students to determine their next step. Also, we frequently employ (4) peer-assessment and (5) self-assessment in order to activate students as sources of learning for each other and themselves. Also, since students differ in terms of their capabilities (e.g. movement skills, speed of learning), we take into account individual student differences within the movement domains (games, gymnastics, dance, etc.) by employing assessment forms that meet these differences.

Within our curriculum we also prepare our students for their own future assessment tasks as a PE teacher. Therefore, we have developed a 10-week unit in which students learn the basic conditions for good-quality PE-assessment (e.g. constructive alignment, validity & reliability, transparency, etc.), what elements constitute an assessment (assessment situation, instruments and communication), learn about assessment for learning (e.g. formative assessment, peer-assessment, etc.) and the impact of assessment on student motivation. Through various learning tasks, students deliver two assessment products within this period. The first product is analysis of an existing assessment within their school placement based on the basic conditions of a good-quality assessment. In the second product students develop a fully worked out assessment for a self-chosen PE unit. The emphasis on school placement during this period provides students with a meaningful and authentic environment to learn about, experiment with, and design a PE-assessment. At the same, since our university students provide supervisors at the schools with examples and new insights with regard to PE assessment they learned in university, we contribute to further professionalization of the PE field on this topic.

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