

Project title: Information Technology in Coaching / Teaching and Assessing Invasion Games Concepts:
A Case Study

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Purpose

The purpose of this study is to explore the use of Information Technology (IT) in authentic assessment of Games Play in Physical Education (GPA), with particular reference to the Tablet PC, in the teaching, learning and assessment of Physical Education and the underlying principles of games play. According to a report commissioned by Becta for the use of Tablet PCs in UK (**Twining, 2005**), a school was highlighted for the use of Tablet PCs in evaluation and performance analysis during PE lessons. It reported how the Tablet PCs with Digital Video technologies were used in PE lessons, providing feedback to the pupils on positive aspects and areas that needed practice. Students were asked to analyse their performance and how they could improve / change / correct their practice and as a consequence performance. The report highlighted the ease of facilitation of the technology for qualitative skills analysis. In this project we take advantage of Tablet PCs for games play analysis and use the technology to provide data to determine if the use of Tablet PCs enhances the teaching, learning and assessment of games/ PE in schools. We believe that the use of such technology (Tablet PCs) can positively impact the learning and assessment of a range of broader outcomes in PE and games play. Specifically, our objectives are:

- To introduce and evaluate innovative pedagogies in physical education teacher education.
- To nurture trainee teachers / school pupils' ability to reflect, think critically, stimulate inquiry and contextualize learning / assessment in teaching PE by providing opportunities in collaborative work by means of web-blogs and scaffolded face to face and on-line discussions.
- To learn physical skills (in invasion games) and principles of attack and defence, underlying skills to analyze games play movement (via freeze play, coach analysis, animations, visuals and cueing strategies) and hone NIE trainee teacher and school pupils observational powers using inking technology of the tablet PCs.
- To build an e-portfolio to demonstrate learning / assessment across all three learning domains (cognition, affective and psychomotor). This will be an alternative means of assessment in games teaching and PE.

With the current emphasis of teaching less and learning more, the aspect of innovation and enterprise in teaching and learning becomes paramount especially in today's technology infused world. Previous work at PESS involved the use of video and motion analysis in teaching gymnastics and e-learning in Biomechanics. The application of IT was found to enhance understanding of technique and principles and facilitated the development of skill. The purpose of this initiative is to explore the use of Information Technology (IT) in the teaching, learning and assessment of Physical Education and related principles. We

will endeavour to use Tablet PCs to facilitate the teaching of skills analysis and skills development as well as the physics of human movement, in a collaborative blogging environment in which portfolios of a student's work can be stored digitally, reviewed, appraised and shared. Scaffolding will be used to guide the discussions so that any learning, understanding or misconceptions can be highlighted. The significance of this work lies in the opportunity for students to develop their knowledge base and understanding through peer review and reflection, so that learning becomes more constructive and engaged and assessment is authentic. It is unique because, often times, the notion of PE being a physical activity creates the mindset that the subject does not lend itself well to the use of IT, particularly e-learning.

1. To introduce and evaluate innovative pedagogies in physical education teacher education.
2. To nurture students' ability to reflect, think critically, stimulate inquiry and contextualize learning in teaching PE by providing for opportunities in collaborative work by means of web-blogs through scaffolded discussions.
3. To learn physical movements and principles underlying skills, analyze movement (via animations, visuals and cueing strategies) and hone observational powers as a using inking technology of the tablet PCs.

To build an e-portfolio to demonstrate learning, both cognitively as well as in the movement skills (video clips, qualitative analysis report of a skill of choice) as an alternative means of PE assessment.

The following research questions will guide the study:

1. Can the use of technology (DV Coach and video cameras, and PC tablets) influence: The teaching / assessment beliefs, methods of instruction / assessment of teacher PE trainees?
2. What influence does the application through web interfaces, of information processing theories and computer-supported collaborative learning /assessment have on the teacher trainees instructional and feedback strategies and content knowledge development?
3. Can teacher trainees of physical education be involved in implementing innovative instructional design employing DV Coach?
4. Does employing IT in games play provide improved pupil inclusiveness and the learning of boarder learning outcomes to include strategies , tactics and affective outcomes traditionally difficult to promote with traditional pedagogy?
5. Can an assessment tool be developed employing pupil use of video analysis and recording on PC tablets
6. Reference to GCA study

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