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‘We had to do intelligent thinking during recent PE’: students’ and teachers’ experiences of assessment for learning in post-primary physical education

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This study arose in response to a perceived need for additional teacher support for assessment in physical education and the limited focus in physical education pedagogy literature on the impact of Assessment for Learning (AfL), in particular the impact of formative assessment on student learning. The study involved the refinement and evaluation of a post-primary physical education planning framework with assessment instruments for use by teachers. A number of teachers were engaged in the development of assessment and planning materials, the trialling of these in school settings and their subsequent refinement based on the feedback received from the teaching and learning setting. The study was contingent on teachers cultivating a learning culture within their class. Students’ and teachers’ experiences of AfL are reported before highlighting some of the challenges that remain in investigating formative assessment.

Assessment for learning

There has been a dramatic increase in the interest and amount of literature related to formative assessment, and in particular assessment for learning (AfL). A number of organisations with a remit to address school curriculum and assessment within the school sector are promoting AfL as a significant approach, providing publications and web-based resources that detail the philosophy of the approach and provide materials that will support its delivery. Such organisations include the Qualifications and Curriculum Authority in England and Wales, Learning Teaching Scotland and the Australian Curriculum Studies Association (Assessment Reform Group 2002; Learning and Teaching Scotland 2006).

Interest and research in formative assessment (Dann 2002; Centre for Educational Research and Innovation 2005), and more specifically AfL from both the student and teacher perspectives, continue to grow (Shepard 2000; Black et al. 2003; Wiliam et al. 2004; Black et al. 2005; Carless 2005). AfL reflects recent advances in knowledge of how learning takes place and the importance of assessment in the promotion of learning, commonly noted as an ‘alternative assessment’ devoted towards support for learning rather than the measurement of learning (Crossouard et al. 2004). AfL acknowledges that assessment should be part of the teaching and learning process, with information gained from ongoing assessment informing and shaping the process.

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That is, assessment informs the learning process on a daily and weekly basis as opposed to at the end of a unit of work.

AfL emphasises that assessment should be an integral part of the teaching and learning process. A dominant and continuing theme in educational research is the investigation into how young people learn in school settings, focusing on how teachers can best structure the learning environment and content to facilitate student engagement which in turn fosters learning. The central importance of instructional alignment, i.e., the interdependence of instruction, curriculum and assessment (Cohen 1987; Wiggins and McTighe 1998), is frequently underplayed by the use of research approaches that investigate one or two of the constructs without making links to the triad. A constructivist perspective informs AfL, offering only a theoretical perspective on learning, not curriculum or instruction (Rovegno and Dolly 2006). The constructivist perspective places the learner at the centre of the learning process, actively engaged (through interactions between peer learners and contexts) in constructing knowledge and understanding in relation to pre-existing knowledge, the task and the context. This perspective conveys assessment as a socially embedded process (Torrance and Pryor 2001) and positions pedagogical practices not dissimilar to the key principles of AfL (Elwood and Klenowski 2002). Key principles include (1) sharing learning intentions with students (making the objective of the lesson clear), (2) sharing the success criteria (helping students to recognise the standards they are aiming for), (3) involving students in assessing their own learning and (4) providing feedback, which helps students to recognise what they must do to close any gaps in their knowledge or understanding.

Assessment in Irish post-primary schools

The Department of Education and Science (DES) is responsible for education policy for schools in Ireland and is advised on curriculum and assessment issues related to early childhood, primary and post-primary education by the National Council for Curriculum and Assessment (NCCA). Looney (2006, 348) alludes to the fact that reference to assessment in the Irish school curriculum tends to rely on 'generic statements about using a broad range of assessment tools, and some descriptions of the kinds of assessment tools that might be used'. This is evidenced in the junior cycle physical education (JCPE) syllabus to which the project reported in this paper is related. In this instance, the one page allocated to assessment suggests assessment modes of formal assessment and informal observations by the teacher, peer and self-assessment by students and recording individual achievement with a lack of detail on how these approaches might be operationalised in the teaching-learning setting. In Ireland, critical practice-referenced research is limited and there is a lack of clarity on how student progress is to be assessed (Looney 2006).

Recent developments providing support and professional development for classroom assessment practice are evident (Looney 2006). A number of initiatives in Ireland have offered support for teachers in assessment and learning in the classroom, developed classroom-based formative assessment approaches and encouraged schools to use assessment to further the learning and development of individual children. These include the *Junior Cycle Review* (NCCA ongoing), *Assessment in Primary Schools* (NCCA 2005a), *Moving Up, The Experiences of First-Year Students in Post-Primary Education* (NCCA and ESRI 2004) and the initiative in AfL in the junior cycle (NCCA 2005b, 2005c). The latter report provided a range of positive qualitative

judgements related to the effectiveness of AfL approaches in Irish classroom settings. In supporting the AfL initiative the NCCA is keen to provide an extensive database of exemplars of student work, arranged on a subject by subject basis.

The Assessment in Physical Education project

In September 2005, the NCCA, in conjunction with the Junior Cycle Physical Education (JCPE) support service, initiated a pilot project in schools to investigate some key issues relating to physical education assessment. The project sought to further embed AfL within practices already being promoted by the JCPE support service. The JCPE support service has incorporated AfL principles in developing a framework for planning pedagogy and assessment (Figure 1) that has been disseminated through JCPE in-service (Moynihan, Murphy and O'Flaherty 2006). The project intended to identify existing assessment materials, their ease of adoption, potential to change practice and impact student learning. It was anticipated the materials would be developed *in* and *through* practice in the school context (Crossouard et al. 2004). The project reported here focuses on the implementation of AfL approaches in a physical education context only. Subsequently, the implications from the findings inform the delivery of physical education and specifically JCPE. Issues related to the successful expansion of AfL approaches have been considered in the broader NCCA AfL project (NCCA 2005a, 2005b). For the initiative to contribute internationally to the growing practice-referenced research in the area of formative assessment in physical education, it is imperative that its continual evolution and refinement is informed by the experiences of teachers and students and the evaluation of such experiences.

Modes of inquiry

The study developed and promoted the use of 'rich tasks', (Moynihan, Murphy and O'Flaherty 2006) which are particularly useful in the teaching of physical education as they lead to an integrated learning experience that represents learning outcomes in a practical environment. Rich tasks contribute to 'authentic assessment' in physical education through being embedded in movement, hoping to 'capture the cognitive and psychomotor processes involved in the competent performance of physical activities' (Hay 2006, 317). The rich tasks used in this study are derived from similar constructs commonly referred to as rich assessment tasks (Luke 1999). The rich task presents substantive, real problems for the students to solve, based on a range of learning outcomes, and may be used as an organisational framework for the design of a unit of work (see example given in Figure 1). The task is deemed to be 'rich' when it is authentic for the student and relevant to the learning outcomes in question. It should also contain transparent criteria and standards, encompass more than one learning outcome, involve acquiring, applying and evaluating knowledge, and provide opportunities for students to demonstrate subject knowledge, skills and understanding. The rich tasks used here are characterised by a predominant focus on pedagogy whereas previously used rich assessment tasks had a much stronger emphasis on assessment and evaluation. Such a pedagogical emphasis shares a social constructivist foundation with AfL in that it encourages teachers 'to shift from their conceptualizations of learning away from the isolated performance of skills to the understanding of learning as a social construct situated in specific learning contexts' (Azzarito and Ennis 2003, 195). There is little cause for tension between the 'rich task' assessment and the key

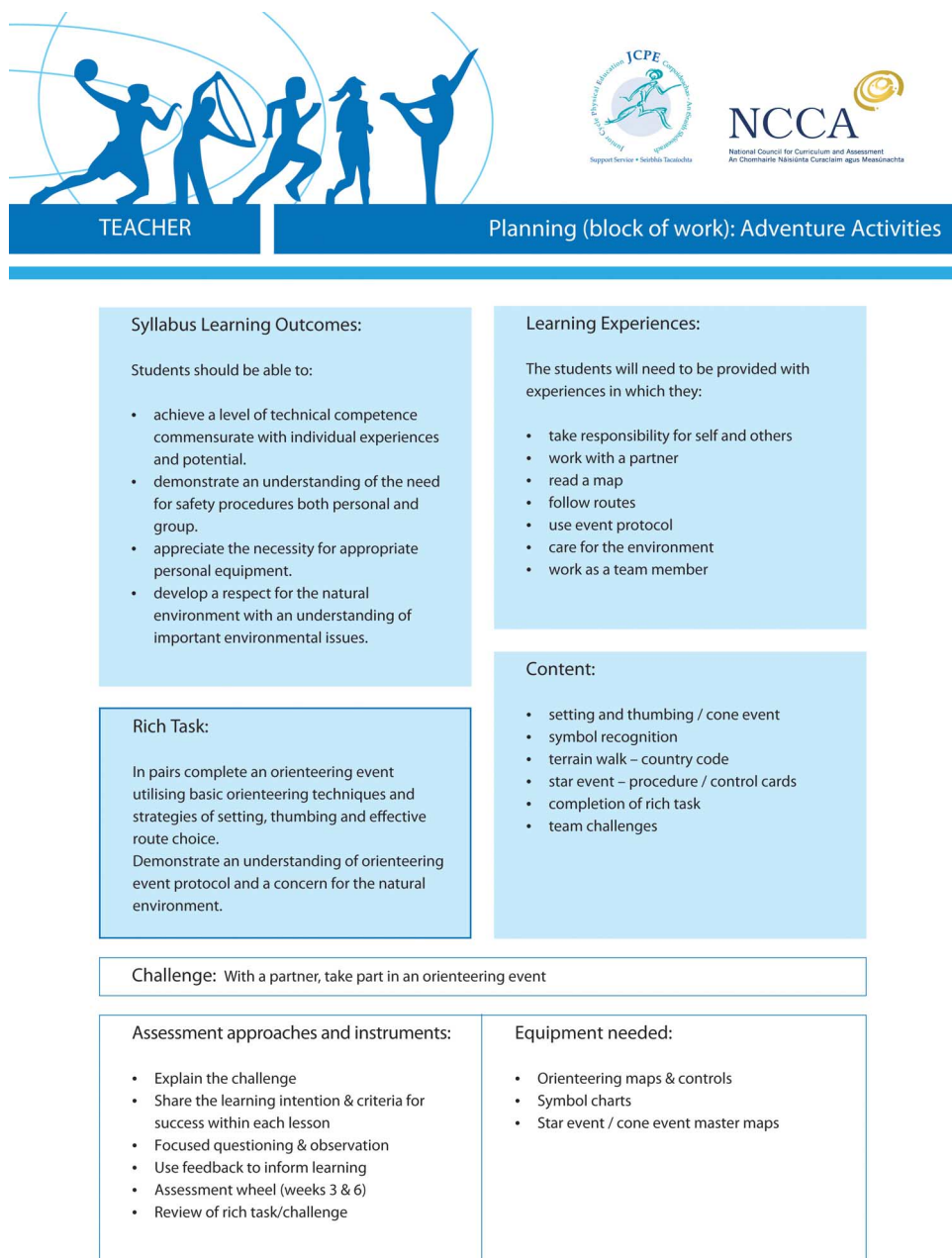


Figure 1. Framework for planning pedagogy and assessment.

principles of AfL if the latter are embedded and continually revisited in encouraging and directing students to successful completion of the rich task.

Formative assessment is intended to enhance student learning through frequent opportunities for students to evidence their understanding, which in turn will identify ways to help individual students progress. While formative assessment tends to inform the teacher about student involvement, AfL extends to informing students about their

own learning, acknowledging that they are decision-makers in their own learning. That is, students learn about achievement expectations from the beginning and ‘come to see and understand the scaffolding they will be climbing’ as they strive to manage their own progress (Stiggins 2005, 327). This study introduced a formative assessment instrument related to the rich task, the ‘assessment wheel’, supporting the constructivist perspective in which students take greater responsibility for what is learned and how it is represented. The assessment wheel (Figure 2) is a simple form of student

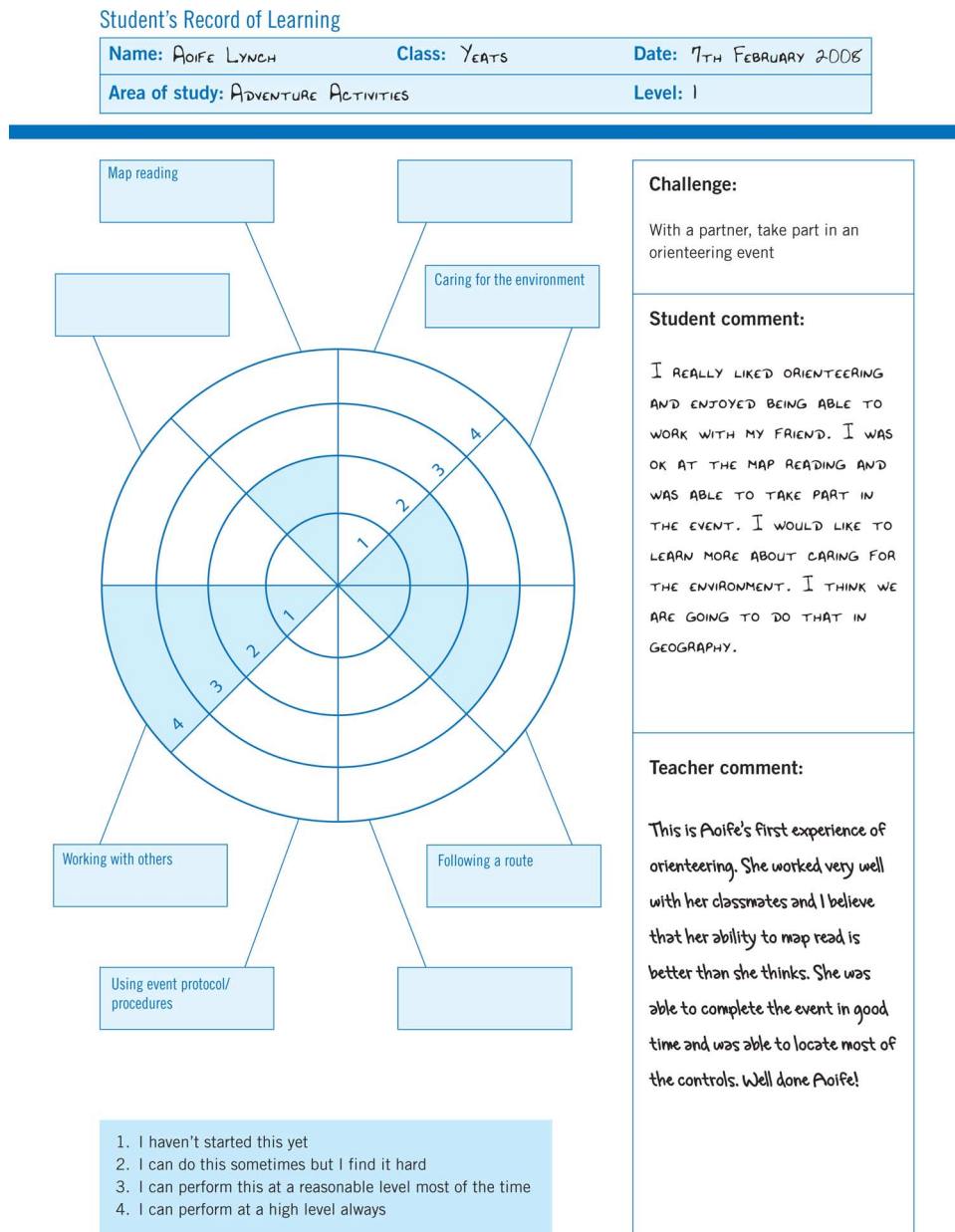


Figure 2. Assessment wheel.

self-assessment that does not depend solely on language to communicate student understanding. It encourages the student to record, reflect on, and map their learning related to the rich task and to assess their progress towards a pre-set goal. It also identifies any learning gaps that may exist and enables students to plan for the next phase of their learning as well as providing a context for feedback, (i.e., inform discussion between student and teacher). The wheel was used during this research to track progress and at the end of the unit of work as a means of documenting student learning.

Methods

The project established three teacher networks throughout Ireland. For the purposes of testing, the applicability of approaches to formative assessment in JCPE schools was drawn from the cohort of schools involved (or previously involved) in the JCPE national programme of in-service provision. Schools ($n=20$) nominated one physical education teacher to be involved in the year-long project. Criteria for school selection included a geographical spread of schools, the nominated teacher being a qualified physical education teacher (not another subject teacher who was delivering physical education), a range of number of years' teaching experience, and differing school type. Teachers were encouraged to work with one particular junior cycle class per week targeting students who were in their first three years of post-primary education and aged between 12 and 15 years. Teachers were asked to focus on one area of study in physical education, and to incorporate project materials into this class through planning, teaching, and learning experience. Requirements of each teacher included that they use the rich task framework in planning for lessons, share planning and content related issues with other teachers, and accommodate evaluation visits. Before the invitation to be involved in the project was formally sent to the school principal, the research team had identified a geographical representation of physical education teachers who had previously been supportive of learning of ways in which to improve their practice. While none of the teachers were familiar at the start of the project with the 'rich task' concept it was evident that some teachers' current practice was aligned with, and subsequently more easily accommodated, the use of a rich task. An initial teacher seminar was held where all teachers to be involved in the study were brought together to discuss suggestions on how best to use the prepared project materials.

In the time that was available, 14 schools were visited with the aim of supporting teachers in the work of the project and providing an opportunity for discussion on issues pertinent to the implementation of AfL in physical education. Areas of discussion included: (1) the process of planning, (2) how planning was influenced by the use of rich tasks and AfL approaches, (3) implementation issues such as practicalities and time, and (4) the response of students. Teacher network meetings allowed teachers to meet three or four times during the project to report on their progress and to discuss any related issues/concerns. Similar to the situation in Torrance and Pryor's (2001) study of developing formative assessment in the classroom, although teachers were part of a teacher network, they remained immersed in their own school practice. As part of each school visit and teacher network meeting, the facilitator recorded teachers' discussions. This informed the emphasis and direction that the study took and verified a number of points raised by other data sources, such as prompt sheets, teacher interviews and student focus groups.

This research was informed by Nominal Group Technique (NGT) methodology (MacPhail 2001). This involved sending prompt sheets to each school encouraging students and teachers to complete short, concise responses to a question. For students this question was, 'In what ways have the physical education lessons you have been involved in most recently been different from other physical education lessons?' and for teachers, 'What are your observations on the effectiveness of assessment for learning within the physical education context?' Responses were received from over 700 students and 13 teachers. Data collected informed subsequent teacher interviews and student focus groups.

Two case study schools were identified as contrasting examples presenting the possibilities of working with AfL irrespective of previous teaching and learning preferences. The physical education teachers in both schools agreed to share thoughts on their experience with the AfL methodology and assessment instruments formally. Teacher and school names are pseudonyms. Aoife teaches in a single-sex girls' school (St. Mary's) and she believes her established teaching methodologies have been largely consistent with AfL approaches, including sharing the learning intention and criteria for success. Mark teaches in a single-sex boys' school (St. John's) and indicated that AfL was a departure from his usual physical education pedagogy. Both teachers were interviewed in their own school in December 2005 on completion of Phase 1, and again in May 2006 on completion of Phase 2. With permission from each teacher, interviews were recorded. The structure for both Phase 1 and 2 interviews was deliberately similar to encourage commenting on the extent to which experience in Phase 1 had informed the delivery of Phase 2. Two student focus groups were conducted in each school, one at the end of Phase 1 and the other on completion of Phase 2. The focus group was to be informed by the pattern of responses from the NGT phase particular to that group of students with a focus on investigating issues related to students' experiences of the assessment instruments. Focus group interviews were recorded with permission from the students and subsequently transcribed. Data from the focus groups were limited by the extent to which students engaged with the questions. An example of questions posed at the teacher interviews and student focus groups are included in Table 1.

The study, which extended over an academic school year, involved students and their teachers in trialling materials within the school setting. This supported teachers' involvement in an action research approach that might be used to bring about changes in classroom assessment practices:

For teachers to be able to develop new approaches to formative assessment and relate them to different theories of learning, they must be able to investigate and reflect upon their classroom practices [...] An action research approach seems particularly suited to high-quality development work on the interface between, teaching, learning and assessment. (Torrance and Pryor 2001, 629)

The importance of student engagement and of seeking their perceptions and experiences of learning is widely supported (Flutter and Rudduck 2004; Cowie 2005; Munns and Woodward 2006).

Data analysis

All data (school visits, teacher networks, NGT prompt sheets, teacher interviews and student focus groups) were entered into Word documents and similar to the constant

Table 1. Examples of teacher interview and student focus group questions.

Selection of questions	
Teacher interview	
Phase 1	How did you set about planning and preparing for introducing the assessment instruments and an assessment for learning framework? To what extent have the prepared assessment instruments been successful? To what extent do you believe the assessment instruments pursue authentic assessment in a physical education context? Are there strategies that you believe could enhance the delivery (by teachers) and completion (by students) of assessment instruments?
Phase 2	How did your experience before Christmas inform your use of the assessment instruments and assessment for learning framework this time? Was the planning and preparation easier second time round? To what extent have the assessment instruments developed your, and the students', understanding of authentic assessment? Have you discovered strategies that enhance the delivery (by teachers) and completion (by students) of assessment instruments?
Student focus groups	
Phase 1	To what extent, and in what way, do you feel more involved in the more recent lessons? Have you had opportunities to assess your own performance and that of others during these lessons? If so, do you enjoy these opportunities? How do they make you feel?
Phase 2	In what way have the more recent lessons developed your involvement in the physical education class? Have you had opportunities to assess your own performance and that of others during these lessons? Does this develop the way you were involved in assessment before Christmas?

comparative method of analysing data the comments were manually reviewed, and repeatedly and continually coded, seeking similarities and differences, groupings, patterns and items of particular significance (Rubin and Rubin 1995). The main components of AfL – sharing the learning intention, criteria for success and offering feedback – were used to direct the coding of data initially. Further categories of comments were constructed on the incidences of particular words and phrases related to teacher and student involvement in the project. Those discussed here are: (1) planning, structure and focus of lessons, (2) AfL assessment instruments and rich task, (3) appreciation of learning, (4) student involvement through feedback and (5) teacher professional development and satisfaction. The spelling, grammar and style of the quotes are reported as they appeared on the student or teacher prompt sheets.

Findings and discussion

Planning, structure and focus of lessons

While the planning framework (Figure 1) provided by the research team assisted and enhanced planning skills, it also aided the teaching process by encouraging teachers to 'think a lot more about content of lessons which resulted in more efficient and more effective classes' (Teacher, School 4, Phase 2). The increased level of planning was associated with developing a structured, organised unit of work and related lessons, with a clear focus on learning, teaching methods and clarity of outcomes:

It alerted me to go back to planning modules and individual classes with more precision [...] It provided a clearer framework for my teaching [...] It allowed me to be focused on my objectives for each class. (Teacher, School 6, Phase 1)

I found that my P.E. lessons were much more structured at all times we were working towards something. (Teacher, School 19, Phase 2)

Many teachers reported that better planning resulted in lessons being easier to manage and organise, allowing them to focus on their effectiveness in progressing students toward achievement of stated lesson goals. Teachers also reported that establishing clear goals and assessing these goals aided students in the learning process. Teachers were of the view that students took on a level of ownership of the lessons and students acknowledged and appreciated being given more responsibility for their own learning.

A number of student comments reflected the changed structure of lessons from previous physical education experiences. Many students reported that the lessons were more organised and included increased discussion time. They also noted more involvement in class cooperative lessons, working in pairs, in teams, and even more independently: 'It was more organised and it was more explained more' (Student, School 16, Phase 2) and, 'You have more say in what you do in class – everybody has an opinion' (Student, School 6, Phase 2). Students were appreciative of teachers sharing lesson objectives within the classes, commenting, 'We spent more time at the start of the class talking about our lessons and what we want to learn' (Student, School 6, Phase 1) and, 'In each lesson we had a goal to achieve unlike before when we didn't plan to achieve anything' (Student, School 15, Phase 2). The structure of these more recent physical education lessons was perceived to be like a 'normal class' where you learn something as opposed to previous physical education lessons where students were not told how to improve. Students enjoyed having targets to aim toward and recording their progress in achieving them. Consequently comments were favourable about starting a lesson by sharing learning intentions and having a 'task'/'challenge' to complete by the end of a unit of work.

AfL assessment instruments and rich task

The assessment wheel was seen as easy to understand and required a relatively short period of time to administer. Accordingly its use did not intrude on class time devoted to physical activity. Many teachers indicated using the assessment wheel two or three times throughout a unit of work, usually in the second or third week and again at the end of the unit. The main attraction of this assessment appeared to be that it allowed students to record personal progress that they could revisit to assess how they had learned: 'The wheel is a written testament to what they [students] have learned' (Teacher, School 11, Phase 1) and, 'Students had an opportunity to identify current positions and review own performances (assessment wheel)' (Teacher, School 8, Phase 1). Aoife was supportive of the assessment wheel, particularly in relation to ease of use for students and its lack of infringement on the time spent within a physical education lesson being physically active:

They were very easy to fill in, very quick ... that was their biggest benefit. It wasn't time consuming. It was easy to explain. Once they have done one you will never have to explain it again. ... the wheel worked very well for me. I wouldn't change that for the

world. I think it's one of the best things that have come across in years. You know I can see myself using that for everything. (Aoife, December interview, 2005)

Many student comments conveyed familiarity with the assessment wheel. The attraction to the assessment wheel was that it allowed students to assess themselves and record their progress: 'I think the assessment wheel is a great idea so we can see how much progress we've made but you don't have to tell anyone else' (Student, School 4, Phase 1) and, 'The wheel was a really good idea because I was able to see from what I started off as to now' (Student, School 9, Phase 2). Students in St. John's were articulate in conveying their support and understanding of the assessment instruments, explaining how the assessment wheel was to be completed by the students: 'I thought they were a very good help ... if you see where you are this week you'll want to improve it more and more ... instead of staying on the same level' (Student, Focus group, January 2006).

The rich tasks were introduced and explained on the first day of each unit. This not only helped contextualise the learning intentions for the unit of work but also alerted students to what they were expected to do on completion of the unit, completing different tasks as they progressed. While the students were not familiar with the 'rich task' terminology, they conveyed some level of understanding in relation to a 'final challenge', 'assignment' or 'performance' that was to be completed in the final lesson: 'We were told everything we were going to have to do [during] the weeks. So it was just a test at the end' (Student, Focus group, May 2006).

Appreciation of learning

Many students commented on their perception of an increased focus on learning. Students were conscious of 'learning differently' in AfL lessons, noting the lessons allowed them to be more involved and thus experience a sense of ownership.

Teachers suggested that the AfL approach provided a 'pathway' for students to learn, with the implication that learning in physical education had become more meaningful for students: 'Students much more aware of the educational value of subject – [...] they were learning through activity rather than just participating' (Teacher, School 4, Phase 2). Teachers supported the value of sharing the learning intention at the start of class as a welcomed, and easy, change to make to their practice. Doing so resulted in students having a clear picture of what they had to do in a lesson and how they were going to do it. Students also appreciated the teacher sharing the learning intention at the beginning of lessons, conveying that this led to an appreciation of learning: 'We learnt a lot more because we knew what we were doing' (Student, School 10, Phase 2).

Mark recorded his surprise at how students on the whole had responded to the new format of learning within physical education reporting that they 'feel that they are more part of it' (May interview, 2006). Student comments focused on learning more about the structure of the activity, learning new skills and in general spending more time learning in physical education than previously:

There has been alot more learning involved in these new P.E classes. (Student, School 10, Phase 2)

They were more intresting as i lernt more skills becouse of them. (Student, School 3, Phase 1)

We had to do intelligent thinking during recent PE. (Student, School 10, Phase 2)

These physical lessons have been a lot different from the previous lessons because a lot of lessons have been about using your head. (Student, School 10, Phase 2)

Some students perceived the increased focus on learning resulted in less physical activity and more 'class work'.

Questioning and feedback

Questioning and feedback were two aspects of AfL that were mentioned by many teachers as increasing students' involvement in the lesson and positively influencing students' engagement within physical education. Students appeared positively predisposed to a changed approach to questioning which in turn assisted them in reflecting on their work:

Questioning led to much more interaction with students and very effective in helping students improve performance [...] Focused feedback also helped improve students performance. (Teacher, School 8, Phase 1)

Involving students in evaluating their own, and peers', work was seen to positively impact students and was informative for teachers: 'A lot of personalities came out when assessing each other or [in] a class group situation' (Teacher, School 17, Phase 2) and, 'Involving students in rating / evaluating their own learning has been informative (not as what I expected)' (Teacher, School 4, Phase 1). Students appeared to enjoy helping each other and were more involved in 'the learning experience' (Teacher, School 18, Phase 1), leading to increased peer learning and cooperation.

Aoife conveyed the extent to which the group of girls embraced peer feedback and consequently her support for peer evaluation:

They seem to take it [feedback] very well and they seem to be quite sensitive to each other's feelings as well (...) they like giving each other feedback and I think it's because they are girls and it's a social thing (...) it's second nature to them and they really enjoy having their social element and they realise they are also helping each other to learn which gives them more ownership of the whole thing. (May interview, 2006)

Aoife was surprised at the quality of answers that the students offered in response to her questioning. Questioning was a strategy that Aoife had always employed in her class and she was of the opinion that this allowed her to adopt and sustain an AfL approach more easily. Mark was less confident with questioning, 'That area [questioning] wouldn't have been part of my normal teaching experience' (December interview, 2005). He feared that questioning would encourage a less tightly structured lesson, which in turn would result in his losing control of the class. However, after working on questioning in his lessons he observed that in fact students responded positively to being challenged.

Student comments related to feedback focused primarily on working in groups: 'We watched how other people did it and told them how they could improve' (Student, School 16, Phase 2) and, 'Its more fun when your working in groups and can discuss what we could improve on' (Student, School 4, Phase 2). The girls in St. Mary's identified working with a partner or in groups and providing feedback as being new experiences in physical education. They acknowledged that peer feedback allowed

them to identify what they were doing well and how they could improve. While students appreciated that self-assessment allowed them to record information without sharing it with anyone else, they found it difficult to self-assess. The boys in St. John's were aware of the change in the level of interaction between themselves and the teacher as well as the changes in questioning and feedback adopted by Mark. The students were keenly aware that the pair work and peer feedback in which they had been involved was a departure from the practice of previous physical education lessons. There was strong evidence of students' awareness of directing and assessing their own (and each other's) learning and that such practices reduced the amount of 'physical activity time' in the lesson: 'Assessing and evaluating by writing takes away from exercise time and physical work' (Student, School 15, Phase 2).

Teacher professional development and satisfaction

Teachers were highly motivated and energised by the AfL/rich task assessment framework and related materials, reporting that the standard of teaching, learning and assessment in their physical education lessons had improved greatly. Through teacher interviews there was a noticeable variation in the rate at which teachers adopted the approaches. This arose as a result of variations in school context, nature of the students involved and the extent to which adoption of the framework represented a change to or modification of previous practice.

There was evidence that teachers' involvement in the project had been challenging and led to enhanced professional satisfaction: 'I enjoyed the experience [...] and found myself challenged, which in any situation is good' (Teacher, School 17, Phase 2). Another teacher commented on his/her intention to maintain their professional development:

Really enjoyed being involved in project. I am a better teacher as a result [...] I need to develop this further – practice. It is difficult not to revert to what I have always done but I also feel that this was good practice. (Teacher, School 14, Phase 1)

Some teachers commented that they had experienced a shift in their role to that of one of administering or facilitating, being able to make 'judgement calls' as the class progressed in consultation with the students. They also commented that there was a need on their part for absolute clarity of intention. Mark reported that following the specifics of the AfL framework was not complicated, admitting that the AfL framework was very different from how he had previously taught physical education. He admitted that it took some time to realise the potential impact of 'for learning' as opposed to 'of learning':

It took a good while to get my head around exactly what we were looking for. [...] it was only about three weeks ago that the penny dropped that 'for' was the key word in that statement [AfL]. I always consider assessment as being the summative so it was a complete change for me. (December interview, 2005)

Challenges confronting formative assessment

In presenting a continuum of views of learning, mind, and assessment, Elwood (2006a) shows how differing views of each can be represented, acknowledging that in moving from 'students in isolation context', to 'students in social context' to 'students

in cultural context' there is a shift in how we look at the three concepts. In challenging the 'paradigm shift' that AfL claims to promote through different forms of assessment practices, Elwood (2006a) believes that the AfL associated view of 'mind' still sees the student as separately analysable after the learning has taken place. That is,

formative assessments are still really measuring something that is the property of the student even though that property (i.e., their learning) has been co-constructed. Their learning may well take place in the social but it is still very much seen as being located within the student. (Elwood 2006a, 5)

Elwood argues that for a 'paradigm shift' in understanding assessment practice to be considered, mind and learning need to be seen as occurring 'outside the head', between individuals. Subsequently, assessment outcomes can only be seen as descriptions of the relationships between those individuals and contexts contributing to the assessment practice. This is supported by the data from this project where students reinforce the experience of learning from, and with, their peers.

Extending Elwood's (2006b) conviction that it is the interactions between the learner and the teacher and the learner and other learners that lead us to understand learning through any assessment, Amade-Escot (2006) explains that the *didactique* tradition of education research studies teaching and learning processes with a special focus on the content knowledge taught, making the assumption that the content knowledge to be learned and taught is the crucial element of the interactions between student and teacher. The *didactique* tradition of research examines the transformation processes that take place between knowledge to be taught and the knowledge learned by students (didactic transposition) and the negotiations between teacher and students about the content related to a specific task (didactic contract). This extends the work of the evaluation study reported here that we intend to pursue in the near future, examining what constitutes knowledge for the learner and teacher in a physical education lesson (Tinning 2002; Ayers 2004).

A number of authors have critiqued and questioned the extent to which the adoption of formative assessment is effective in helping all types of student, irrespective of race, class and gender, to improve their work. Differences between children in the same class can be dependent on their 'perceptions of the implicit social rules of the classroom, their understanding of the nature of the learning tasks [...] and their orientation to achievement goals' (Torrance 2001, 27). Elwood is also concerned with more equitable teaching and assessment practice, stating that more research is needed to understand the fundamental relationship between formative assessment and equity (Elwood 2006b). While her focus is on gender achievement, investigating the extent to which assessment techniques are related to gender-related differences evident in assessment outcomes (Elwood 1995; Murphy and Elwood 1998), she proposes that a less relational positioning of 'boys versus girls' would enable students' educational successes or underachievement 'to be viewed in the context of their own goals and expectations' (Elwood 2005, 389). Through student focus groups this study provides an overview of students' experiences of formative assessment but fails to examine the extent to which such experiences matched a student's individual aspiration.

It is not possible to isolate the learner (including their pre-existing knowledge and experience, disposition and beliefs), the teacher, school, cultural and social factors that impact on learner cognition (Elwood 2006a; Rovegno 2006; Solomon 2006). Subsequently, accounting for equality, developmentally appropriate activities and gender issues with respect to an individual's readiness for learning results in who is to be

assessed, what is to be assessed and how the assessment is to occur, differing according to context (Hay 2006). The study design did not encourage the depth of information that is necessary to examine such a relationship. Individual in-depth case study scenarios from a sample of students would be a starting point for examining such intricate relationships.

Conclusion

Supporting the findings from a recent review of changing classroom assessment practices (Tierney 2006), the study reported here does give credence to movement in the area of classroom assessment and indicates that there is a considerable effort to effect change in classroom assessment practice. The study also contributes to a discussion on practices, and their consequences, in evolving the role of assessment in classrooms with a focus on students managing their own learning. A number of favourable comments were made related to the use of the AfL methodology and the related assessment instrument, with teachers and students conveying a shared understanding of the nature and purpose of the latter. In providing a pathway for students to learn, both teachers and students appear strongly of the view that the quality of student learning in physical education has improved. Students appreciated being given more responsibility for their own learning and teachers believed that the use of questioning and feedback increased the number of students positively engaged in the physical education class. Sharing learning intentions at the start of the lesson not only allowed teachers to focus on their effectiveness in progressing students toward achievement of stated lesson goals but was also appreciated by students who articulated that they aided the learning process. The rich tasks helped contextualise the learning intentions for the unit of work and alerted students to what they were expected to do on completion of the unit. The shift in student perception of the physical education subject discipline, i.e., that physical education is concerned with learning, brought about by a change in teacher practice, is an important finding and supports the need for further examining what constitutes knowledge for the learner and teacher in a physical education lesson.

The significant investment in teacher time in planning and preparing for the use of a new methodology and the perceived reduction in lesson physical activity time arising from the introduction of AfL instruments emerged as key concerns. While many teachers reported that initial planning was time-consuming there was consensus that better planning resulted in lessons being easier to manage and organise. Teachers reported that the standard of teaching, learning and assessment in their physical education lessons had improved greatly although there was a noticeable variation in the rate at which teachers adopted the AfL approaches.

Supporting the findings of the Centre for Educational Research and Innovation report: 'Formative assessment: improving learning in secondary classrooms' (2005), the majority of the teachers in this study felt that the administration implications of implementing formative assessment in all (physical education) classes would be so significant as to make it impractical. This may only be a concern when written feedback is required and teachers' understanding of the various ways in which formative assessment can be implemented within a class requires further investigation. Difficulties associated with whole-school application of the approaches can only be expected. Most teachers were of the view that a reduction in the volume of paper-based tasks associated with planning, a continuation of teacher networks and an opportunity for sharing ideas (Kirton et al. 2007) are essential if it is to be sustainable.

We acknowledge that this study focused on the practice of assessment with some indications as to the impact that assessment had on student learning. There is considerable evidence supporting the contention that AfL leads to the enhancement of the students' educational experience and their valuing of a changed learning environment and an appreciation of the opportunity to monitor their own progress (William et al. 2004). However there is limited data in this evaluation study to allow us to comment on whether students' level of knowledge and understanding increased. As Elwood (2006a) advises, we cannot review a system of assessment without acknowledging its relationship to the view of learning and of the learner underpinning it. Further work is necessary to explore the connection between the assessment used and its impact on the nature and extent of learning in physical education. We must also recognise the need for specific research on the reality of learning (including difficulties and obstacles) encountered by diverse learners (Amade-Escot 2006). Transfer of learning to other contexts is also acknowledged as a further area of study (Hay 2006).

Formative assessment requires time to be integrated by each teacher (Black et al. 2005) and an investment in further refinement of materials and reporting options will inform and also help direct assessment within physical education. Through this study AfL principles have been promoted and teachers and students have conveyed a level of understanding of AfL. The case studies have illustrated how different school environments and the conditions of teachers' work impact on teachers' and students' experience of AfL. This study addresses the need for a move towards substantiating AfL theory within a physical education context (Hay 2006). While the context and performance-based nature of physical education lend themselves to the key principles included in AfL, they also offer a different lens to that of classroom-based subjects through which to scrutinise AfL. Within physical education, where learning outcomes are represented in a practical environment, it could be argued that through observing and a kinaesthetic awareness, students are aided in gaining information that, on a daily and weekly basis, informs and directs their learning. Interactions between peer learners and contexts is a main component of a number of curriculum models promoted for use through physical education, including Cultural Studies, Personal and Social Responsibility, Teaching Games for Understanding and Sport Education (Lund and Tannehill 2010). It is also challenging to investigate the principles of AfL in a practical subject area where students were conscious of not only learning but 'learning differently'.

For the study to contribute internationally to the growing practice-referenced research in the area of formative assessment in physical education, it is imperative that continual evolution and refinement of assessment frameworks and instruments within these schools are informed by the experiences of teachers and students and the evaluation of such experiences, providing longitudinal case studies for best practice.

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References

- Amade-Escot, C. 2006. Student learning within the *didactique* tradition. In *The handbook of physical education*, ed. D. Kirk, D. Macdonald, and M. O'Sullivan, 347–365. London: SAGE.
- Assessment Reform Group. 2002. *Assessment for learning: 10 principles – research-based principles to guide classroom practice*. Assessment Reform Group. <http://www.assessment-reform-group.org/>.
- Ayers, S.F. 2004. High school students' physical education and conceptual knowledge. *Research Quarterly for Exercise and Sport* 75, no. 3: 272–88.
- Azzarito, L., and C.D. Ennis. 2003. A sense of connection: Towards social constructivist physical education. *Sport, Education and Society* 8, no. 2: 179–97.
- Black, P., C. Harrison, J. Hodgen, B. Marshall, and D. Wiliam. 2005. Dissemination and evaluation: a response to Smith and Gorard. *Research Intelligence* 93: 7.
- Black, P., C. Harrison, C. Lee, B. Marshall, and D. Wiliam. 2003. *Assessment for Learning: Putting it into practice*. Berkshire: Open University Press.
- Carless, D. 2005. Prospects for the implementation of assessment for learning. *Assessment in Education* 12, no. 1: 39–54.
- Centre for Educational Research and Innovation. 2005. *Formative assessment: improving learning in secondary classrooms*. Paris: OECD.
- Cohen, S.A. 1987. Instructional alignment: Searching for a magic bullet. *Educational Researcher* 16, no. 8: 16–20.
- Cowie, B. 2005. Pupil commentary on assessment for learning. *Curriculum Journal* 16, no. 2: 137–54.
- Crossouard, B., D. Hamilton, U. Jonsson, J. Pryor, B. Roos, A. Steinwall, H. Sundstrom, S. van Tittelboom, and H. Torrance. 2004. Assessment for Learning: What have we learned from our Minerva Project? Internet-Based Assessment. www.onlineassessment.nu (accessed 23 August 2007).
- Dann, R. 2002. *Promoting Assessment as Learning. Improving the learning process*. London: RoutledgeFalmer.
- Elwood, J. 1995. Undermining gender stereotypes: Examination and coursework performance in the UK at 16. *Assessment in Education* 2, no. 3: 283–303.
- Elwood, J. 2005. Gender and achievement: what have exams got to do with it? *Oxford Review of Education* 31, no. 3: 373–93.
- Elwood, J. 2006a. Views of assessment, learning and mind: exploring the links and implications for emerging trends and perspectives on assessment, paper presented at 32nd Annual Conference, International Association for Educational Assessment, May 21–26, in Singapore.
- Elwood, J. 2006b. Formative assessment: possibilities, boundaries and limitations, Review Essay. *Assessment in Education* 13, no. 2: 215–32.
- Elwood, J., and V. Klenowski. 2002. Creating communities of shared practice: The challenges of assessment use in learning and teaching. *Assessment and Evaluation in Higher Education* 27, no. 3: 243–56.
- Flutter, J., and J. Rudduck. 2004. *Consulting pupils. What's in it for schools?* London: RoutledgeFalmer.
- Hay, P.J. 2006. Assessment for learning in physical education. In *The handbook of physical education*, ed. D. Kirk, D. Macdonald and M. O'Sullivan, 312–25. London: SAGE.
- Kirton, A., S. Hallam, J. Peffers, P. Robertson, and G. Stobart. 2007. Revolution, evolution or a Trojan horse? Piloting assessment for learning in some Scottish primary schools. *British Educational Research Journal* 33, no. 4: 605–27.
- Learning and Teaching Scotland. 2006. LTS Corporate Profile. AiFL – Assessment is for Learning. Learning and Teaching Scotland. http://www.ltscotland.org.uk/Images/profile_aifl.tcm4-376876.pdf (accessed 14 December 2009).
- Looney, A. 2006. Assessment in the Republic of Ireland. *Assessment in Education* 13, no. 3: 345–53.

- Lund, J., and D. Tannehill. 2010. *Standards-based physical education curriculum development* (2nd ed.). Sudbury, MA: Jones and Bartlett.
- Luke, A. 1999. Education 2010 and new times: Why equity and social justice still matter, but differently. Paper prepared for Education Queensland online conference, October 20.
- MacPhail, A. 2001. Nominal Group Technique: a useful method for working with young people. *British Educational Research Journal* 27, no. 2: 161–70.
- Moynihan, C., G. Murphy, and M. O’Flaherty. 2006. Future designs – planning for a quality physical education experience. Paper presented at *British Educational Research Association*, September 6–9, University of Warwick, UK.
- Munns, G., and H. Woodward. 2006. Student engagement and student self-assessment: the REAL framework. *Assessment in Education* 13, no. 2: 193–213.
- Murphy, P., and J. Elwood. 1998. Gendered experiences, choices and achievement – exploring the links. *International Journal of Inclusive Education* 2, no. 2: 95–118.
- National Council for Curriculum and Assessment (NCCA). (Ongoing) *Junior Cycle Review*. Dublin: NCCA.
- National Council for Curriculum and Assessment (NCCA)/ ESRI. 2004. *Moving Up, The experiences of First-Year Students in Post-Primary Education*. Dublin: NCCA.
- National Council for Curriculum and Assessment (NCCA). 2005a. *Assessment in Primary Schools*. Dublin: NCCA.
- National Council for Curriculum and Assessment (NCCA). 2005b. *Interim report on the developmental initiative in assessment for learning in junior cycle*. Dublin: NCCA.
- National Council for Curriculum and Assessment (NCCA). 2005c. *Assessment for Learning. Report on Phase 2 of the developmental initiative*. Draft document for discussion at Junior Cycle Review Committee. Dublin: NCCA.
- Rovegno, I. 2006. Situated perspectives on learning. In *The handbook of physical education*, D. Kirk, D. Macdonald and M. O’Sullivan, 262–74. London: SAGE.
- Rovegno, I., and J.P. Dolly. 2006. Constructivist perspectives on learning. In *The handbook of physical education*, ed. D. Kirk, D. Macdonald and M. O’Sullivan, 242–61. London: SAGE.
- Rubin, H.J., and I.S. Rubin. 2005. *Qualitative interviewing. The art of hearing data*. London: Sage.
- Shepard, L. 2000. The role of assessment in a learning culture. *Educational Researcher* 29, no. 7: 4–14.
- Solomon, M. 2006. Learner cognition. In *The handbook of physical education*, ed. D. Kirk, D. Macdonald and M. O’Sullivan, 226–41. London: SAGE.
- Stiggins, R. 2005. From formative assessment to Assessment FOR Learning: A path to success in standards-based schools. *Phi Delta Kappan* 87, no. 4: 324–428.
- Tierney, R.D. 2006. Changing practices: influences on classroom assessment. *Assessment in Education* 13, no. 3: 239–64.
- Tinning, R. 2002. Engaging Siedentopian perspectives on content knowledge for physical education. *Journal of Teaching in Physical Education* 21, no. 4: 378–91.
- Torrance, H. 2001. Assessment for learning: Developing formative assessment in the classroom. *Education* 3–13 29, no. 3: 26–32.
- Torrance, H., and J. Pryor. 2001. Developing formative assessment in the classroom: Using action research to explore and modify theory. *British Educational Research Journal* 27, no. 5: 615–31.
- Wiggins, G., and J. McTighe. 1998. *Understanding by design*. Alexandria, VA: Association for Supervision and Curriculum Development.
- William, D., C. Lee, C. Harrison, and P. Black. 2004. Teachers developing assessment for learning: impact on student achievement. *Assessment in Education* 11, no. 1: 49–65.