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Teachers, Teaching and Pedagogy in Physical Education

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How physical education is taught is as important as its content for pupils' learning. How physical education is taught, or the pedagogy, is the focus of this chapter. Pedagogy has been defined as 'any conscious activity by one person designed to enhance learning in another' (Watkins and Mortimore, 1999: 3) and it is this definition that is used in this chapter.

Research (for example, Evans et al., 1987; Evans and Clarke, 1988; Evans and Penney, 1993; Kirk, 1993; Laws and Aldridge, 1995; Penney and Harris, 1998; Sparkes, 1992) has shown that many physical education teachers have not changed the way they teach physical education, despite innovations in the curriculum, including the introduction of a National Curriculum for Physical Education (NCPE) in England in 1992 (Department of Education and Science/Welsh Office (DES/WO), 1992), and its subsequent revisions and developments in 1995 (Department for Education (DfE), 1995) and 2000 (Department for Education and Employment/Qualifications and Curriculum Authority (DfEE/QCA), 1999). In relation to the introduction of the NCPE (DES/WO, 1992) Evans et al. (1996: 165) claimed that the 'noise of education reform and the weight of education legislation of recent years pressing teachers to engage in curriculum change have done very little to alter the way in which physical education is taught in schools'. They suggested that pupils, particularly boys, may be denied the educational experiences they need and deserve by some teachers adopting conservative, uni-dimensional pedagogical activities. One reason for lack of change in the teaching of physical education has been suggested by Hargreaves (1989) and Sparkes (1991a, 1991b) as resistance to change due to the incompatibility of teachers' values and beliefs with a specific innovation. Jewett et al. (1995) noted that greater resistance is likely when teachers believe that their personal and professional goals are incompatible with the innovation and when they believe their pupils will not benefit. Sparkes (1987) suggested that this may result in teachers changing what they say but not what they do in their curriculum.

This chapter looks at what teaching approaches are used by physical education teachers and at the influence of physical education teachers' values and beliefs on the teaching approaches adopted. It then looks at how values and beliefs are formed, focusing on socialisation, before considering the impact of values and beliefs on the subject knowledge which prospective teachers bring with them to their initial teacher education (ITE) courses.

The chapter concludes by looking at the role of reflection in enhancing teachers' pedagogical practice.

TEACHING APPROACHES

What do we know about teaching approaches recommended for use in physical education? Kane (1976), Underwood (1988) and Wright (1995) identified differences in teaching approaches used in physical education, either due to the demands of different activities or different intended learning outcomes. Assuming a direct link between teaching approach and intended learning outcome, a teaching approach is selected to enable the aims and intended learning outcomes in a lesson or section of a lesson to be met. Indeed, it has been recommended (DES, 1985; DES/WO, 1992; DfE, 1995) that in order to achieve the range of learning outcomes identified in the NCPE, teachers should employ a variety of teaching strategies (across and within lessons) to cater for differences in pupils' abilities, attainment, needs and ages. The requirements of planning, performing and evaluating in the NCPE in 1992 and 1995 (DES/WO, 1992; DfE, 1995) and of the four strands – acquiring and developing skills; selecting and applying skills, tactics and compositional ideas; evaluating and improving; and knowledge and understanding of fitness and health – in the NCPE 2000 (DfEE/QCA 1999) require teachers to focus on both the learning process, for example, to compare, make judgements, analyse, review, adapt, refine, interpret, design, evaluate (DfE, 1995; National Curriculum Council (NCC), 1992; see also, Mawer, 1999; Murdoch, 2004) as well as the acquisition of skills. These require different teaching approaches.

However, does practice match recommendations? Based on evidence collected in schools, the Office for Standards in Education (OFSTED) (1995a) and OFSTED (Wales) (1995b) suggested that pupils learn best and most where teachers are flexible and able to mix teaching approaches with respect to pupils' ability and need and to subject matter. They also argued that a limited pattern of curriculum design and delivery restricts pupil learning. Likewise, the Scottish Qualifications Authority (SQA, 1999) advised that indirect constructivist teaching approaches are the most effective teaching and learning environment.

Some research has focused on the use by physical education teachers of formal and informal approaches to teaching. Research evidence led Mawer (1999: 98) to suggest that direct teaching approaches such as the practice style of Mosston and Ashworth (2002) may be effective for learning motor skills, whereas reciprocal teaching styles may be effective for learning aspects of social development, and cooperative approaches may facilitate interpersonal and social skills development.

Results of a study by Penney and Evans (1995) suggested a predominance of teacher-centred teaching. Heads of physical education departments reported a combination of 'formal' (described as teacher centred, didactic, highly structured in organisation and mode and

oriented towards precisely defined goals set by the teacher) and 'informal' (described as teaching that is pupil-centred and oriented towards guided discovery and problem solving) teaching approaches being used in their department for each of the areas of activity in the NCPE. However, these approaches were not used evenly across areas of activity. In athletics activities, outdoor and adventurous activities and games 'formal' teaching was prevalent, while in dance and to a lesser degree in gymnastics 'informal' teaching was prevalent. Likewise, when analysing the teaching styles used in NCPE, Curtner-Smith (2001) found that up to 74 per cent of teacher time was spent in 'teacher directed practice' teaching styles (those which emphasise control, with the teacher making decisions related to planning, delivery and evaluation). A maximum of 7 per cent of time was spent in more shared, problem-solving teaching environments.

Alexander and Luckman (2001) found that in relation to teaching a sport education season, teachers perceived they adopted less direct teaching styles. Teachers also reported placing less emphasis on learning skills and more emphasis on the development of personal and social skills, knowledge and understanding, values and attitudes and pupil self-management skills. Thus, they believed that there was a shift in pupils learning towards personal and social skills and that motor skill and fitness outcomes were less achievable. Results also showed that teachers perceived that sport education made a positive contribution to their repertoire of pedagogical skills. These results suggest that there is room within existing physical education programmes to incorporate 'different content (sport) and pedagogy (less teacher-directed; more student managed) which can emphasise collaboration and cooperation within a competitive structure' (2001: 260).

Thorburn and Collins (2003) reported many teachers fluctuating between different teaching approaches when teaching analysis of performance in one Scottish examination qualification. They also found that the most frequent solution to concern about the lack of development in pupils' written answers on analysis of performance was the adoption by many teachers of more directed teaching approaches, thereby assuming greater control over the teaching environment. Some teachers taught to the examination, encouraging superficial learning through focusing on repetition and following instructions, to the detriment of actively solving problems. However, trial and error resulted in a few teachers moving beyond reproductive teaching styles to productive teaching styles that involved pupils in active cognitive situations such as problem solving. These teachers encouraged deep learning, by setting challenging tasks and linking learning with experience. Thorburn and Collins (2003) suggested that *what* is meant by concepts in analysing performance should be taught at the beginning of the course, which can be supported by practical experience to show *why* these concepts are important. This links to the need for declarative knowledge – characterised by the awareness of 'knowing that', which helps learners to understand information and ideas, to support the development of procedural knowledge (see, for example, Abrahams and Collins, 1998). They suggested that adopting more teacher-directed approaches was determined by short-term course requirements and pupils' grades (which, in turn, determined the quality of pupils' learning experiences) and by pressure on

teachers in terms of general workload, amount of course content to be covered and assessment procedures to be completed.

Kane (1976) emphasised that it was probably ill-advised to make any attempt to characterise teachers as having a particular style. However, he identified that 'in general' women teachers preferred guided discovery and problem-solving approaches while men teachers appeared to prefer direct and guided discovery styles. He also reported that 'the profile of women and younger teachers appeared to demonstrate a stronger commitment to open and less structured styles' (Kane, 1976: 85). Likewise, studies (for example, Flintoff, 1995, 2003; Harris and Penney, 2002; Waddington et al., 1998) have highlighted that the subject expertise and pedagogical strategies of some secondary physical education teachers is influenced strongly by gender.

Thus, there are a range of teaching approaches that can be used although, as Rink (2001) stressed, the effectiveness of different teaching methodologies is contested. Further, it seems that physical education teachers generally use more formal than informal teaching approaches. The teaching approaches adopted by any one teacher, however, are influenced by their own perspective on physical education. For example, Curtner-Smith (1999) identified teachers in his study as holding three broad interpretations of the NCPE: conservative, innovative, and eclectic, depending on their perspective. A 'sporting perspective' (Sparkes, 1991b) of physical education was held by teachers with a conservative interpretation. The main concerns of this group of teachers were improving sporting performance and producing successful school teams in traditional British team games. Their teaching, therefore, mainly used direct styles of teaching to teach the skills and strategies of games. An 'idealistic perspective' of physical education which 'tends to be egalitarian, child-centred, progressive, and concerned with the personal and social development of pupils via self-paced individual activities' (Sparkes, 1991b: 4) was held by teachers with an innovative interpretation. They used a range of traditional and non-traditional activities and teaching styles to enable a range of objectives, including cognitive, social, health-related and performance objectives, to be achieved and to provide opportunities for all pupils to develop a leisure interest. Their main concern was with the learning process; teaching pupils to 'plan, perform and evaluate' through physical activity. This group of teachers was enthusiastic about changes they had made to their curricula and teaching styles as a result of the introduction of the NCPE (Curtner-Smith, 1999). A perspective of physical education that incorporated elements from both the conservative and innovative interpretations was held by teachers with an eclectic interpretation. These teachers used mainly direct teaching styles which focused mainly on improving pupils' performance, but taught a range of activities to enable pupils to develop a leisure interest.

These perspectives are influenced by the values and beliefs held by physical education teachers. So, what are these values and beliefs?

TEACHERS' VALUES AND BELIEFS

Values and beliefs rely heavily on evaluations that are affective and personal, therefore they depend more on subjective rather than objective evidence. Research on physical education teachers' value orientations by Ennis and colleagues has identified five value orientations which may be held by physical education teachers: disciplinary mastery; learning orientation; social responsibility (in an earlier version of the scale this was social reconstruction); ecological integration; and self-actualisation. Different teachers place high priority on different value orientations. In a study by Ennis et al. (1992), 56.8 per cent of 90 teachers placed a high priority on social reconstruction and 7.6 per cent placed a high priority on disciplinary mastery. Ennis and Chen (1995) found that teachers who worked in rural schools placed a higher priority on learning process and disciplinary mastery, while teachers who worked in urban schools placed a higher priority on self-actualisation and social responsibility.

Regardless of gender, experience or activity background, Curtner-Smith and Meek (2000) found that, in a sample of 64 physical education teachers, highest priority was given to the learning process, disciplinary mastery and social responsibility value orientations, with lowest priority given to self-actualisation and ecological integration value orientations. They identified the value orientation given highest priority by the greatest number of teachers as social responsibility. However, this was also given the lowest priority by the greatest number of teachers. Self-actualisation was given a low priority by the smallest number of teachers, while self-actualisation and ecological integration were the two orientations for which the greatest number of teachers had neutral priority.

Ennis and Chen (1995) and Ennis and Zhu (1991) found that teachers who gave high priority to social orientation and learning process were likely to give low priority to self-actualisation, ecological integration and social responsibility. A moderate positive correlation has been found (Curtner-Smith and Meek, 2000; Ennis and Chen, 1995; Ennis et al., 1992; Ennis and Zhu, 1991) between the value orientations of disciplinary mastery and learning process; a strong negative correlation between disciplinary mastery and self-actualisation, disciplinary mastery and social responsibility, learning process and ecological integration and learning process and social responsibility; and a moderate negative correlation between learning process and self-actualisation. Ennis and Chen (1995) highlighted the inverse relationship between value orientations which place some emphasis on content and those which place emphasis on affective orientations.

However, it is not clear whether values and beliefs are held strongly or not by individual teachers, that is, whether values and beliefs are based on ethical or other practical, empirical or theoretical principles of teachers or whether they are idiosyncratic or arbitrary (for example, I know what I like or that seems like a good idea). Green (2000; 2002) highlighted the predominantly arbitrary or idiosyncratic nature of five prominent what he called 'philosophies' (or ideologies) held by physical education teachers: sport; health; academic value; education for leisure; and sport for all. He stressed that these 'philosophies' are 'what

might best be described as a mishmash of views on physical education: sometimes overlapping, sometimes contradictory, frequently ill thought through and typically confused', rather than 'integrated, coherent sets of ideas' (Green, 2000: 123). This related to Green's assertion that teachers simply *do*, and are not philosophising very much about, physical education. Their 'doing' appears to interact with the way they think about and teach physical education – their predispositions influenced by their past experiences. Thus, these practical 'philosophies' are based on prior physical education and sporting experiences. Further, the 'philosophies' of many physical education teachers incorporated several dimensions, although for many physical education teachers there was one dominant dimension and several additional dimensions. For many male physical education teachers whose 'philosophy' contained more than one dimension, most emphasis was placed on sport and the development of sporting skills, although health and education for leisure were also included, albeit the promotion of health was implicitly related to sport. Other physical education teachers emphasised personal and social education. Green (2000) also found that 'philosophies' of physical education change over time, with 'older philosophies' such as sport performance retained, but supplemented by 'newer philosophies' such as health, education for leisure and sport for all (Hendry et al., 1993; Scruton, 1992) and academic value.

But what factors determine physical education teachers' philosophies, values and beliefs and how does this impact on subject knowledge? The next part of the chapter looks at the importance of socialisation.

OCCUPATIONAL SOCIALISATION

Lawson (1986: 107) defined occupational socialisation as 'all kinds of socialisation that initially influence persons to enter the field of physical education and later are responsible for their perceptions and actions as teacher educators and teachers'. In addition, he observed three distinct types of socialisation – acculturation, professional socialisation and organisational socialisation – which are likely to mould physical education teachers' perspectives about their subject and their pedagogical practices (Lawson, 1983a, 1983b).

Acculturation begins at birth and is based on observations and experiences during childhood and adolescence and interactions with significant people. Some of the most important observations and experiences are school in general (Hutchinson, 1993; Lawson, 1983a, 1983b; Lortie, 1975; Placek et al., 1995) and physical education in particular (Curtner-Smith, 1999; Evans and Williams, 1989; Green, 1998; Schempp, 1989), as well as sport (both in and out of school) (Curtner-Smith, 1999; Dewar and Lawson, 1984; Dodds et al., 1992; Templin, 1979) and interactions with physical education teachers and other adults responsible for coaching/teaching sport and physical activity (Mawer, 1996). Through these observations and experiences, prospective physical education teachers become familiar

with pedagogical practices and begin to make judgements about what constitutes quality of teaching (Schempp, 1989). These influence the understanding of prospective physical education teachers' about what it means to be a physical education teacher before they enter initial teacher education (ITE). This 'has a distinct and traceable influence on an individual's future decisions, practices, and ideologies as a teacher' (Schempp and Graber, 1992: 333).

Research (for example, Dewar and Lawson, 1984; Dodds et al., 1992; Evans and Williams, 1989; Green, 1998; MacDonald et al., 1999; Templin, 1979) has shown that love of sport attracts many physical education teachers to the profession. However, the type and level of sport and physical activity experience are important. Lawson (1983a: 7) noted that 'sport has been identified as a carrier of conservative values', which led him to hypothesise that teachers who had participated in traditional sport at a high level were likely to hold a conservative orientation towards physical education, whereas teachers who had participated in non-traditional sports and other types of physical activity were more likely to have an innovative orientation towards physical education. This hypothesis was supported by results of studies by Ennis and colleagues, but not by results of a study by Curtner-Smith and Meek (2000), which showed that teachers who had participated mainly in traditional games and sports placed a significantly higher priority on the value orientation of social responsibility than teachers who participated mainly in non-traditional activities or had participated equally in traditional and non-traditional activities. On the other hand, teachers who had participated in non-traditional activities or had participated equally in traditional and non-traditional activities (described as an eclectic background) placed a significantly higher priority on the learning process than teachers with a traditional activity background. Lawson (1983a, 1983b) also noted that the different physical education and sport experiences during childhood of many prospective male and female physical education teachers and societal attitudes towards male and female sport in general are likely to impact on physical education teachers' philosophies, values and beliefs and lead to different perceptions of physical education teaching and pedagogical practices.

Lawson (1983a: 4) defined professional socialisation as 'the process by which . . . teachers acquire and maintain the values, sensitivities, skills, and knowledge that are deemed ideal for physical education teaching'. Research suggests that values and beliefs about physical education developed during childhood and adolescence are not easily changed and that ITE has relatively little impact on student teachers (Curtner-Smith, 1999; Evans, 1992; Evans et al., 1996; Green, 1998; Placek et al., 1995). In fact, many student teachers confirm their values and beliefs in ITE rather than modify them (Doolittle et al., 1993; Solmon and Ashy, 1995). However, there is some evidence to suggest that ITE may have an influence if student teachers values and beliefs are challenged. For example, Schempp and Graber (1992: 336) suggested that 'only when recruits encounter teacher educators with alternative orientations is a dialectic likely to emerge and enable change to take place'. O'Bryant et al. (2000) noted that, if teacher educators have a better understanding of student teachers' perceptions, values and beliefs about teaching physical education, they may be better able to socialise them for their role as physical education teachers.

Organisational socialisation was defined by Van Maanen and Schein (1979: 211) as ‘the process by which one is taught and learns the ropes of a particular organisational role’. Lawson (1983a, 1983b) identified the workplace, particularly early in a teachers career, as important in supporting or restricting beginning teachers practice. This is because schools are highly ‘custodial bureaucracies’ (Lawson, 1983b) in which ‘basic assumptions and beliefs are shared . . . as the correct way to perceive, think, and feel’ (Schein, 1988: 6), which can result in beginning teachers adopting the prevailing values and beliefs of the school. This may result in pedagogical practices and perspectives learned during ITE, which are incompatible with those operating in the school, being ‘washed out’ (Zeichner and Tabachnik, 1981).

Thus, socialisation determines the philosophies, values and beliefs of prospective physical education teachers. It also determines the subject knowledge with which teachers enter ITE courses. For example, Amade-Escot (2000) highlighted findings from a series of studies that suggest that pedagogical content knowledge is composed of intimately linked and integral knowledge, beliefs and experiences; is embedded in the practice of teaching; has undergone long-term evolution in relation to professional competence; and is dependent on contextual factors. The next section looks at subject knowledge and then the influence of values and beliefs on subject knowledge and on teaching approaches.

TEACHERS’ KNOWLEDGE BASE

Shulman (1986, 1987) has been a key figure in identifying the knowledge that teachers need for effective teaching. He identified seven knowledge bases:

1. Content knowledge.
2. General pedagogical knowledge.
3. Curriculum knowledge.
4. Pedagogical content knowledge.
5. Knowledge of learners and their characteristics.
6. Knowledge of educational contexts.
7. Knowledge of educational ends, purposes, values and philosophical and historical influences.

Others have identified other knowledge bases. For example, because teaching demands a large investment of self, Turner-Bissett (1997) identified knowledge of self as a crucial element in the way teachers themselves understand the nature of the job. This has some effect on student teachers’ ability to deliberate, or reflect, on their own practice, which in turn impacts on their development.

For Wilson et al. (1987), a significant part of learning to teach requires student teachers to re-learn content knowledge for the purposes of teaching and to develop their pedagogical

content knowledge so that they are able to facilitate the learning of others. Further, although student teachers may gradually develop in respect of each of Shulman's knowledge bases, each one is dependent upon the other in terms of effective teaching to promote learning. The interaction between these knowledge bases is complex, as sometimes several knowledge bases inform teaching decisions, selection of materials, teaching approaches and organisational strategies.

Calderhead and Shorrock (1997) highlighted the importance of the extent and quality of teachers' content knowledge, particularly in relation to teaching practices and professional development. Depth of knowledge influences pedagogical choices that beginning teachers make. Government surveys (for example, Her Majesty's Inspectorate (HMI, 1987)) have highlighted that if subject knowledge is insecure, restricted practices are likely. Teaching unfamiliar material is difficult and teachers use a variety of tactics to cope with this task, ranging from trying to avoid teaching material they do not know very well to relying on secondary sources such as a textbook to provide the content knowledge. Teachers' lack of content knowledge can also affect the teaching approach. In teaching content about which they are uncertain, teachers may choose to use a directed approach rather than one that encourages problem solving or asking questions.

In a study of student physical education teachers in the USA, Graber (1995: 164) stated that: 'When student teachers have limited subject matter [content] knowledge and are unfamiliar with the details of particular activities, they will be unable to make informed choices about how to teach that subject matter'. She found that: how student teachers had learned an activity themselves shaped how they then taught it; one single powerful person could shape a student teacher's beliefs in terms of content knowledge as much as an entire ITE course; and student teachers knew they needed to combine content knowledge with pedagogical strategies but did not understand how to do so. Thus, student teachers' experiences are central to developing content knowledge and understanding.

Capel and Katene (2000) investigated PGCE student teachers' perceived level of subject knowledge in the six NCPE areas of activity. Results showed that most of the student teachers felt most confident in the games area of activity and lacked confidence in areas such as dance and outdoor and adventurous activities (OAA). This was attributed to their prior experiences, qualifications and knowledge of activities on entry to the PGCE course. Further, they identified a number of activities in which student teachers did not perceive an increase in their subject knowledge over the year, for example, football for male and netball for female student teachers. These activities were those in which the highest percentage of student teachers perceived good subject knowledge early in their ITE course. They speculated that lack of perceived increase in subject knowledge could have been due to student teachers having more confidence in teaching these activities, therefore they did not perceive the need to improve their knowledge or were less receptive to learning. Consequently, they may have spent less time and/or put in less effort to gain knowledge in these activities, relying on what they already knew or concentrating on gaining knowledge

in activities in which they perceived weaknesses. This could be linked also to their values and beliefs about these activities.

Wilson et al. (1987) concluded that depth of content knowledge appears to influence whether teaching is effective. Teachers are more likely to be able to stress conceptual understanding and systematic knowledge (the 'whys') if they have greater knowledge of syntactic structures and conceptual understanding of a subject, therefore are more likely to be able to teach pupils how to think through problems in the subject. Teachers without such knowledge may focus on 'how to do' an activity, for example, memorising predictable problems. Thus, pupils may differ in their conceptual understanding, but not in their skills, when taught by teachers with deeper understanding. Ennis and Mueller (1991) found that expert teachers are more likely than beginning teachers to draw on a richer and more extensive depth of content knowledge. However, it is not clear whether depth of content expertise comes mainly from their own background in sports performance and/or coaching (Amade-Escot, 2000), or from pedagogical content knowledge (Shulman, 1986).

Student teachers are often struggling at a basic level, in acquiring content knowledge itself. They need to understand the importance of content knowledge for teaching and the consequences of lack of knowledge. Learning to teach must, therefore, be conceptualised as both developing content knowledge and how to communicate the content effectively to pupils (pedagogical knowledge). Without solid content knowledge, student teachers have difficulty in making the transition between acquiring content knowledge and making it accessible for the learner. Further, student teachers must develop the ability to acquire new knowledge throughout their careers. This requires, among other things, the ability to reflect on and learn from experience. Student teachers may need to be taught this skill.

THE INFLUENCE OF VALUES AND BELIEFS ON SUBJECT KNOWLEDGE AND ON TEACHING APPROACHES

Work in the area of subject knowledge has looked at beliefs about subject knowledge. One type of belief that beginning teachers hold is related to the content that they teach. Grossman et al. (1989) and McDiarmid et al. (1989) have argued that student teachers' beliefs about content knowledge are as powerful and influential as their beliefs about teaching and learning, as they appear to influence both what they choose to teach and how they choose to teach it. Hence, it is essential that there are opportunities for reflection on ITE courses. However, McDiarmid et al. (1989) argued that there are problems in trying to achieve this. Notably, time constraints on ITE courses result in student teachers' content

knowledge being taken for granted with the focus being on the development of pedagogical knowledge and skills.

Some work has identified the impact of different value orientations on the teaching approaches used by teachers. For example, results of a study by Ennis et al. (1990) on the extent to which the value orientations of 25 primary school teachers influenced their reactions to an in-service course on movement education as measured by changes in written lesson plans found that some concepts in the movement framework were sensitive to teacher value orientations. Lesson plans written by teachers with strong social reconstruction and weak disciplinary mastery value orientations included more opportunities for pupils to engage in shared decision making than did lesson plans of other teachers.

CONCLUSION

This chapter has looked at the teaching approaches used by physical education teachers and the impact of values and beliefs on the teaching approaches of any one teacher. It has also looked at the impact of socialisation on the values and beliefs and on the knowledge bases of physical education teachers and how these impact on their pedagogies. The chapter highlights the interaction of a number of factors which influence all aspects of teaching and learning. We have a good understanding of some of the reasons why teachers adopt the teaching approaches they do. However, we have less understanding of why physical education teachers retain, or change, teaching approaches not only to achieve the learning outcomes identified for the curriculum they are teaching, but also to improve pupils' learning experiences.

However, there seems to be one requirement for physical education teachers to be able to develop their pedagogy: reflection. For example, Calderhead and Shorrock (1997) highlighted that acquiring new content or pedagogical knowledge requires, among other things, the ability to reflect on and learn from experience. Reflection needs to be developed in ITE. Turner-Bissett (1997) highlighted the impact on student teachers' development of knowledge of self which is an important requisite for higher levels of reflection. Likewise, Grossman et al. (1989) and McDiarmid et al. (1989) identified the need for student teachers to identify, examine and reflect upon their own experiences and how they have shaped their perspective of content within the subject area, and to acknowledge the influences that those beliefs have on what they learn and what they teach. Rossi and Cassidy (1999) stressed the importance of teacher educators in the development of student teachers' ability critically to evaluate the conventions and routines they have absorbed during their own education and while on school placement as part of their ITE course. This requires student teachers to challenge some of the curriculum models they have encountered through the process of critical analysis. However, in order to reach this level of conceptual awareness, student teachers need to understand, for example, the unique experiences each NCPE area of

activity can offer pupils, and to have considered what the overall aims of physical education are and how it can contribute to a pupil's personal, social, moral, spiritual and cultural development. Tinning et al. (2001) suggested that there are two questions that provide a point of focus for higher levels of reflection: 'What are the implications of what I choose to teach?' and 'What are the implications of how I teach?'. The extent to which physical education teachers and student teachers address these questions is unclear.

Despite this need for reflection, Kirk (1986) criticised ITE programmes for focusing too much on a technical orientation to teaching with too little focus on an inquiry perspective. The extent to which this perspective is used on ITE courses is not clear. It has been suggested (Schempp and Graber, 1992) that if teacher educators want to change the status quo, they must challenge existing perspectives and beliefs. Such a change is more likely if teacher educators have an innovative orientation towards physical education and if they agree on a shared technical culture and professional ideology (Graber, 1993; Lawson, 1983a, 1983b). If teacher educators have a conservative orientation towards physical education and see current practice as unproblematic, they are likely only to reinforce what the majority of student physical education teachers have learned prior to ITE. As Schempp and Graber (1992: 336) noted 'in the absence of a vigorous dialectic in teacher education, little is likely to change. Only when recruits encounter teacher educators with alternative orientations is a dialectic likely to emerge and enable change to take place'. The model of ITE in place in England at the present time may not encourage the development of reflective skills.

Some studies (O'Sullivan, 1996; Wilson and Berne, 1999) have focused on how teachers learn to teach, particularly how, what and under what conditions learning takes place (Borko and Putnam, 1996; Richardson, 1996; Wideen et al., 1998). Feiman-Nemser and Floden (1986: 513) emphasised that 'understanding the organisation of teachers' knowledge refines our appreciation of uses by showing how different forms of knowledge permit different kinds of performances'. Feiman-Nemser and Remillard (1996: 63) recognised 'that understanding more about teachers as learners, what they need to know and how they learn their craft, can help in clarifying the role of formal teacher education in learning to teach'. Calderhead (1996: 709) focused on 'how teachers make sense of their professional world, the knowledge and beliefs they bring with them to the task; and how teachers' understanding of teaching, learning and children, and the subject matter informs their everyday practice are important questions that necessitate investigation of the cognitive and affective aspects of teachers' professional lives'. It is important that consideration is given in ITE courses to how teachers learn to teach.

Although developing reflection is important in ITE, the process needs to be continued throughout a teacher's career. Student teachers interact with, and learn from, experienced teachers from the time they start their ITE course and are, therefore, influenced by their values and beliefs. Ennis and Chen (1995) highlighted the importance of the first ten years of teaching in the formation of a teacher's value orientations. Value orientations become more stable, and are less likely to change, with 10–20 years' teaching experience. However,

by the time teachers have 20 years of experience their values and beliefs are firmly established and are very unlikely to change. As disciplinary mastery is the most traditional of the five value orientations identified by Ennis and colleagues, it is likely to be the orientation adopted by experienced teachers. Ennis and Zhu (1991) hypothesised that inexperienced teachers are more likely to favour an orientation associated with socio-cultural goals.

Beginning teachers, therefore, need support and mentoring in order to protect them from conservative elements within their school (including experienced teachers with whom they work) otherwise the perspectives and practices acquired during their ITE course are likely to be washed out. They also need a high level of support to address problems and questions with their teaching or questions concerned with top-down innovations (Evans and Penney, 1994; Faucette, 1987). Further, powerful and intensive forms of in-service training also need to be provided for practising physical education teachers.

Further, Green (2000; 2002) identified different dimensions incorporated into physical education teachers' 'philosophies'. It is likely that teachers who hold philosophies which include different dimensions find it difficult to develop pedagogies that enable a range of learning outcomes to be achieved and which meet the needs of pupils. Thorburn and Collins (2003: 185) suggested that 'the attempt to achieve multiple aims within the same programme of study just adds to the complexity of decision-making on teaching methods'. Thus, student and beginning teachers need to reflect on the importance, and implications, of 'philosophies' they hold, rather than just take these for granted. If they are not challenged in their thinking, then it is unlikely that change will result.

Although Alexander and Luckman (2001) highlighted the use of less directed teaching approaches in sport education they warned that the focus on pupil-led organisation may encourage teachers to settle for, what Placek (1983) called, 'the busy, happy and good' approach to teaching, rather than seriously attempting to promote learning. This led them to suggest that 'what is needed is not just more research on sport education applications. The physical education research agenda may benefit from a concern with another question: Under what conditions will otherwise skilled, knowledgeable and thoughtful teachers commit themselves to the achievement of learning in physical education?' (1983: 263). There will be no change without engaging teachers in identifying the need for change and then carrying it out.

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