

## PEDAGOGY

# Action Research as an Agent for Enhancing Teaching and Learning in Physical Education: A Physical Education Teacher's Perspective

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## Abstract

**Introduction:** Action research is a useful method for implementing change through its spiral of plan, act, observe, and reflect, but little research has been published on it in the area of physical education. The purpose of this intervention was to assess the effectiveness of action research as an agent of change and its impact on enhancing my teaching and the learning experience of students in physical education. This was class-based research, which acted as a form of CPD to enhance my classroom practice. **Method:** I adopted a repeated spiral of plan, act, observe, and reflect to implement incremental changes through critical reflection. **Results:** Action research was effective in enhancing teaching and the learning of the students. **Discussion:** It became a collaborative and empowering approach between myself and the students, and it lent itself to creating, sharing, and generating knowledge, thus creating a community of practice between myself and my colleagues. **Conclusion:** Action research is a useful agent of change because it can be tailored to the needs of the teacher. It should be a compulsory component of teacher education courses, and it should be considered an essential skill for lifelong learning for teachers.

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The term *action research* was first coined by Lewin (1946). He described it as a spiral of steps, which comprised planning, action, observation, reflection, and fact finding about the results of that action. It was originally designed for investigation of social issues, but educationalists have adapted much from it. It has been found to be particularly useful for teachers completing class-based research. Wood (2009) stated, “Action research allowed anybody interested in improving their educational situations to become a knowledge-creator, thereby generating epistemologies and theories that were more likely to be workable, relevant and contribute to sustainable change than more traditional approaches to research” (p. 116). It has been described as a practical way of looking at your own work to check that it is as you would like it to be and has been described as a form of self-reflective practice (Brydon-Miller & Maguire, 2009; McNiff, 2002). It provides a fertile source of new ideas for practice and praxis (sayings), new ways of doing things (doing), and new relationships between those involved (relating; Kemmis, 2010).

## **Action Research and Physical Education**

Over 20 years ago, Kirk (1995) argued that action research had the potential to bring about educational reform. He believed that physical education was a subject for which action research could be beneficial because it incorporates a concern for more effective teaching and learning, deepening and broadening teachers’ understanding of their work, and this may lead to better forms of physical education. Much has been written about the need for physical education teachers to be more reflective about their practice through action research, yet despite this, in Europe less research has been carried out in this area (Casey, Dyson, & Campbell, 2009). Gubacs-Collins (2007) in the United States optimistically found that change was happening and that the emphasis on action research was gradually increasing in physical education.

### **Basic Principles of Action Research: A Spiral Approach**

In adopting action research, initially I was the central focus of my inquiry (Whitehead & McNiff, 2006). To achieve my aim of improving the teaching and learning in my lessons, I needed to reflect on my practice and decide on what was important to me. Action

research is a flexible approach that allows for continual adaptations and incremental changes to be made as an intervention progresses. From researching the literature, I established a process for implementing action research including the following steps:

1. Review current practice (McNiff, 2010; Bassey, 1998; Casbon & Walters, 2004).
2. Identify an area to be improved (Bassey, 1998; Casbon & Walters, 2004; McNiff, 2010).
3. Imagine a way forward (Bassey, 1998; Casbon & Walters, 2004; McNiff, 2010).
4. Try it out (Casbon & Walters, 2004; McNiff, 2010).
5. Monitor the action and evaluate its success (Bassey, 1998; Casbon & Walters, 2004; McNiff, 2010).
6. Continue using the action if it is successful (Bassey, 1998; McNiff, 2010).
7. Try another option if it was not (Bassey, 1998; Casbon & Walters, 2004; McNiff, 2010).
8. Evaluate the new practice (Bassey, 1998; Casbon & Walters, 2004; McNiff, 2010).
9. Modify the ideas and practices in light of the evaluation (Bassey, 1998; Casbon & Walters, 2004; McNiff, 2010).

This spiral process of reflection and action is rigorously pursued in all action research projects.

## **Benefits of Action Research**

Three main benefits of using action research were identified in the literature: (a) its contribution to the professional development of the teacher, (b) its capacity to generate knowledge and new practices, and (c) the value of the teacher or researcher being part of the research.

### **Contribution of Action Research to the Professional Development of the Teacher**

Action research can make a significant contribution to the professional development of the teacher or researcher (Jaipal & Figg, 2011; Van Looy & Goegebeur, 2007). This is achieved through the pursuit of knowledge, whether it is improved practice or improved

conceptual understanding (Halton, 2004). The reason being that it augments existing work conditions and appears to support and sustain changes to teaching practice and student learning (Jaipal & Figg, 2011). It achieves this by enabling teachers to tap into their own and colleagues' expertise, strengths, talents, skills, and knowledge and encourages exchanges with other teachers with similar interests and needs (Jaipal & Figg, 2011; Koshy, 2010). Halton (2004) noted, "It is through doing action research, teachers hone their intuitive skills and develop new ones in order to communicate their ideas, concepts and research results in an understandable language and form . . ." (p. 134).

### **Capacity of action research to generate knowledge and new practices**

Advocates of action research have long claimed that it has the capacity to generate knowledge and new practices. It provides insights to educational knowledge that have been generated through practice (Halton, 2004). McNiff (2002) and Whitehead (2009) described this in terms of the creation of living educational theories, which they see as making statements about knowledge and then changing or modifying a practice in light of this new knowledge. In this, it provides opportunities for theories or practices to emerge from the research rather than always following previously formulated theories, and this may lead to open-ended outcomes (Koshy, 2010). From another perspective, it may also give the opportunity to examine the gap between theory and practice, to construct knowledge and demonstrate openness to "new learning" (McDonagh, Roche, Sullivan, & Glenn, 2012). Kemmis (2010) went further and argued that teachers have a collective responsibility to contribute to the development of the professional practice for which they are responsible to protect and strengthen their practices for changing times.

### **Value of the Teacher or Researcher Being Part of the Research**

Action research provides a unique opportunity for the teacher or researcher to be a fundamental part of the research process. This concept has distinct advantages. The teacher or researcher has (a) "insider" opportunities from having a preexisting knowledge and experience about the situation and the people involved, (b) "practi-

tioner” opportunities to reduce substantially the problems of implementing a study from the outside, and (c) “practitioner–researcher” synergy through which their insights and role can help in the design, implementation, and analysis of useful and relevant studies to help contribute to practical issues that teachers face (Robson, 2002). The teacher or researcher is deliberately involved and immersed in the process and not detached from it (Koshy, 2010). Action research supports the development of a self-reflective community committed to the development of educational ideas and practices (Carr & Kemmis, 1986). Similarly, it brings teachers together to discuss, support, and encourage one another, which could have an effect outside the classroom and school on the larger community, by opening up understandings of practice (Rust & Meyers, 2006).

### **Challenges of Using Action Research**

Two main challenges in using action research were also identified in the literature: (a) people’s commitment to implementing change and (b) the time commitment nature of implementing change.

#### **People’s Commitment to Implementing Change**

People need pressure to change, even in the direction that they desire, because they often lack confidence and expertise and they find it difficult to get started, with many being anxious and intimidated especially by using a process, such as action research (Robson, 2002; Rust & Meyers, 2006). Teachers will often only be comfortable and find change effective in “conditions that allow them to react, to form their own position, to interact with other implementers and to obtain technical assistance” (Fullan, 2005, p. 72). They will grow in confidence if they find evidence of improvements in student learning, but also the experience of being able to successfully implement it changes their attitudes and beliefs (Guskey, 2002). Similarly, for change to come about, teachers must be committed, desire change, and fully believe in it for it to be successful (Halton, 2004).

#### **Time Commitment Nature of Implementing Change**

Implementing any new pedagogical change, including action research, is time consuming and highly labor intensive (Casey & Dyson, 2009). This is a major concern for teachers and is often cited as a reason for maintaining the status quo (Clayton et al., 2008;

Halton, 2004; Robson, 2002; Rust & Meyers, 2006). Casey and Dyson (2009) noted the same concerns expressed by teachers, related specifically to physical education. Prospective action researchers identified the problem of finding the time to do inquiry due to the pressure of already implementing curricula aimed at raising scores on standardized examinations (Brydon-Miller & Maguire, 2009).

Together with the many benefits of implementing action research, action research does have limitations that need to be mitigated for designing and implementing action research by a teacher or a researcher.

## **Method**

### **Participants**

I instigated this study from my desire to enhance my teaching and the learning experience of my students in physical education. My philosophy and pedagogical approach to teaching have developed over the years from my experience as a physical education teacher in Ireland and the Middle East. I have always viewed continuous professional development (CPD) as an important part of my responsibility as a teacher as I strive to be informed and keep up to date with developments in my field of work. I am currently head of Girls Physical Education in a large coeducational international school in Kuwait offering the English school curriculum, with a student population of 2,200 from kindergarten to Year 13. Seventeen female students between ages 11 and 12 years participated in the study. They were from a variety of nationalities, mainly from across the Middle East. My three colleagues in the Senior Physical Education Department also assisted.

### **Preintervention**

Initially, I wanted to review my current practices to establish if I was happy with my own performance. Over a number of weeks, I wrote out a detailed description of my educational philosophy. I recorded what I wanted my teaching and the learning experience of my students in my lessons to be. I then compared it to my current practice. I reviewed this under the headings of the curriculum and the teaching strategy I adopted. I recorded that I teach using a part-whole approach to skills teaching, I have a direct style of teaching, I

direct the lessons, and I allow little time for discussion. When I compared that to my philosophy, I was surprised that what I was doing in practice was not what I desired in my lessons. In the interviews with the students prior to the lessons, they all stated that they loved physical education, but six of the 17 students were disappointed with their grades. I analyzed possible reasons for this, and I felt this was an area of weakness in my teaching, in providing clear learning intentions and assessment criteria and more detailed feedback. I turned my attention to how I presented new material, how much time the students were physically actively in the lesson (55%), how much time I spent talking (18%), and how I delivered demonstrations. I spent a lot of time giving instructions and talking, I was the object of 65% of the demonstrations, I did not use differentiated questioning, my questions were low cognitive and not challenging, and I allowed 2 min for the plenary. As a result of this reflection, I identified an area to be improved. Without knowing it then, I had started on my first micro spiral of plan, act, observe, and reflect—action research.

Student participation was vital to the success of the intervention because their cooperation and willingness to contribute provided enormous amounts of data. I made a presentation to the students explaining the intervention and inviting them to participate. I advised them that their comments would be appreciated and could be used to enhance the teaching and learning in their lessons.

I researched and analyzed my observations, and I imagined a way forward and how I wanted my teaching to be. I set about planning and implementing my ideas and trying them out to bring about enhancements in my practice. I monitored the actions and evaluated their success (reducing teacher talk time and increasing student physical activity time, planning differentiated questions). In areas that I found I was successful, I continued to use those action; if I felt I was not as successful, I tried out new options. I then evaluated the new actions, and I modified the ideas and practices in light of the evaluation. This became a macro spiral of plan, act, observe, and reflect for the intervention.

## **Intervention**

The physical education program was a modular-based activity program, for which the activity changed every 4 weeks. Over the

course of this 12-week intervention, the students developed their practical skills in athletics (2 weeks), gymnastics (4 weeks), volleyball (4 weeks), and mini-games (2 weeks).

I adopted the strategy of plan, act, observe, and reflect for every lesson. I planned the lesson and implemented it. I made observations during the lesson and recorded these in my field notes. I also used the other data collection tools to help in my reflection after the lesson and noted these in my field notes. This included the objective data from the video recordings, the subjective data from students' weekly log books (SWLB), and my own overall analysis of the lesson. Based on these observations and reflections, I planned the lesson for the following week.

For the SWLB, I requested students to state the focus of the lesson, what they observed/noted that was good about their performance or that of their partner, what suggestions they could make to improve upon that performance, what they found difficult about the lesson, and what they found easy. They also graded their success on a 4-point rubric against the assessment criteria.

### **Postintervention**

The students were interviewed again, and these interviews were again transcribed. These data were used as a comparison to the pre-intervention data and provided closure to the macro spiral for this process. Students were questioned on the role of taking greater responsibility for their learning and sharing this role with their fellow students. They were asked about how this change in approach helped them to understand more about learning in physical education. They were asked about how physical education is assessed and graded and if they understood the criteria upon which it is based. They were asked if they liked this new approach to teaching in class.

To protect the identities of the students, when I reported on the intervention, each student was assigned a pseudonym. Kemmis (2010) reinforced this collaboration when he stated, "We require practical reasoning to decide what to do, and we require collective practical reasoning among people involved in and affected by practical proposals for action in order to determine what should be done" (p. 423).

## Collection and Analysis of Data

Action research is termed *qualitative research*. Koshy (2010) stated that it is where the researcher brings a story to life. The need for the collection of data from a variety of sources was emphasized by Elliot (2007) and Feldman (2007), who added that multiple stories can be told from the data collected and that it is important that the researcher can support and demonstrate why his or her narrative is more truthful than other possible interpretations. I wanted to provide a rich description of the data; in this, I provided a detailed description of the settings, participants, and data collection and analysis procedures to make the account more credible (Carlson, 2010). This all contributed to an audit trail to enhance to reliability and validity of the findings.

I video recorded each of the 12 lessons (340 min), capturing the lessons and comments of the students as they worked. I also used triangulation of data to cross reference findings between my reflections, the video recordings, and the data the students provided. Finally, I used member checks, presenting the students with the data that I wrote up, to check and attest to particular aspects of my interpretation of the data (Carlson, 2010). I also informally established a *community of practice* (CoP) in which I had discussions with my colleagues to arrive at a shared decision. A CoP is a group of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly (Wenger, 2006). This helped to develop agreements about the ideas under development so I could arrive at a mutual understanding of what to do (Kemmis, 2010).

Critical reflection is an integral part of the process to help with the development of educational values and theoretical insights (Elliot, 2007; McNiff, 2009). This in-depth reflection contributed to me (the researcher) being aware of my own knowing. This was important to me being aware of how I produced and presented reality—and of how I explicated my personal process of knowing in the text. It also highlighted the importance of being subjective and gave a deeper understanding of the context in which I worked (Heikkinen, Huttunen, & Syrjälä, 2007). I adopted the practice of critical reflection in my work, and in describing my reflections, I endeavored to be inclusive and holistic, wherein I took professional responsibility

for the whole outcome including unwanted or unplanned side effects (Feldman, 2007; Heikkinen et al., 2007).

To assist in the veracity of the data, I looked to Braun and Clarke (2006), who provided a comprehensive guide to the treatment and analysis of qualitative data. See Table 1. They recommended using thematic analysis, which they described as “a method for identifying, analyzing and reporting patterns (themes) within data” (Braun & Clarke, 2006, p. 82). A theme is “something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set” (Braun & Clarke, 2006, p. 82). Qualitative researchers tend to analyze their data inductively (Bogdan & Bilken, 1998; Braun & Clarke, 2006). This is “a process of coding the data without trying to fit it into a pre-existing coding frame” (Braun & Clarke, 2006, p. 83). I sought to ensure that the study would include a clear and detailed description of how and why data were collected, what counts as data, and how the various accounts were constructed from the data (Feldman, 2007).

**Table 1**  
*Phases of Thematic Analysis*

Phase	Process	Description
1	Data Familiarization	Transcribing data, reading and re-reading data and noting initial ideas
2	Initial Code Generation	Coding interesting features and collating data
3	Searching for Themes	Collating codes into potential themes
4	Reviewing themes	Checking if themes work, generating a thematic map
5	Defining and naming	Refine the specifics of each theme and the themes overall story, generating clear definitions for themes
6	Producing the report	Final analysis, extract selection related to research questions and literature

*Note.* Adapted from “Using Thematic Analysis in Psychology,” by V. Braun and V. Clarke, 2006, *Qualitative Research in Psychology*, 3, p. 87.

## Stages of Data Analysis

Like the spirals of plan, act, observe, and reflect, the analysis of data took place on macro and micro levels. The macro level took place on the intervention as a whole, and the micro level took place at the end of each lesson from the data collection tools.

In Phase 1, I collected the data and familiarized myself with it. I transcribed the data collected from the initial interviews with the students, I read and analyzed the written material from the SWLBs, I reviewed my notes and my observations in my postlesson appraisal, and I studied the comments recorded during the course of each lesson. I reviewed the video recordings of myself and the students. Braun and Clarke (2006) termed this phase “familiarization with the data.”

In Phase 2, I systematically coded all the material so I could access it easily and group it accordingly. They termed this “generating initial codes.” See Table 2 for a sample. I coded each statement in my field notes, the answers to questions in the SWLBs, the answers to the questions I posed about my own performance from the video recordings, and my observations of the performance of the students in the video recordings. Data were coded by source and subject (e.g., relating to the teacher [T], provided through the video recording [V], related to planning [P]).

In Phase 3, once all pieces of data have been coded, as in Table 2, then the data needs to be analyzed. Data with like coding is then grouped together. The purpose of the analysis of data is to “look for patterns of meaning and issues of potential interest in the data” (Braun & Clarke, 2006, p. 86). I drew diagrams linking the content of the transcripts to the initial themes identified. Braun and Clarke (2006) termed this “searching for themes.” They stated that there was a need to search across a data set (all the data collected) and find repeated patterns of meaning. Thematic analysis is a method of identifying, analyzing, and reporting patterns within data (Braun & Clarke, 2006). I needed to account for any other themes that could have emerged as data were coded, rechecked, and cross checked so unexpected outcomes would be identified and presented. I generated initial codes so I could work further with the data.

**Table 2**  
*Coding of Data Prior to Analysis*

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Subject of Data

Teacher = T

Student = S

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Source of Data

Video = V

Students Weekly Log Book = SWLB

Field Notes = FN

Preintervention Interviews = PrI

Postintervention Interviews = PoI

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Themes and Codes

Greater Details and Enhanced Planning = P

Reflecting on Lessons to Direct Future Learning = R

Data on Feedback = Fb

Data on Observations = O

Data Relating to Focus = F

Shared Responsibility for Learning = SR

Learning Intentions = LI

Shared Learning = SL

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Sample

“I need to plan the questions more carefully” = Data

(Subject) Teacher

(Source) Recorded in field notes

Theme = Data Related to Planning

Code (T-FN-P)

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In Phase 4, I looked for other themes or patterns that could have emerged from the data and reviewed and cross checked the initial coding and themes to see what else was emerging from the data. Braun and Clarke (2006) termed this “reviewing themes.” I reviewed the themes constantly as the action research project evolved.

In Phase 5, I interpreted and made sense of the findings through constant review. Braun and Clarke (2006) termed this “defining and naming themes.” Over time, I defined and named various themes from the data.

In Phase 6, I decided which extracts that would be pertinent to the findings of the study, referring back to the aims of the intervention and other issues of note that emerged from the data, to produce the final report. Braun and Clarke (2006) termed this “producing the report.” I understood that I needed to live with complete openness and in a state of uncertainty (Attard, 2008), and by consciously moving to this mental state, I allowed myself to “[open] up new possibilities for action” (Elliot, 2007, p. ?; Heikkinen et al., 2007, p. ?). This state of uncertainty is a positive and necessary part of a self-reflective study (Attard, 2008). An important aspect of the study is the interactive dissemination of findings for critical scrutiny and professional debate (Elliot, 2007; Feldman, 2007; Halton, 2004; McNiff, 2010). This shared scrutiny is important to reaching a mutual understanding and unforced consensus (Kemmis, 2010) in the findings. I presented my initial findings to my colleagues for debate and scrutiny before finalizing them. We did this as part of our departmental CPD. This gave me an opportunity to debate the issues that arose and to allow others to give their interpretations of approaches and findings. This is an empowering process, and I grew in confidence as a result and was less intimidated to present and discuss my findings.

These data were then gathered under the various headings and reviewed and reflected upon weekly. Some data were also assigned to two groups if the information affected the development of themes.

Analysis of data was a complex process that blended in with the constant spiral of observing, planning an action, implementing the plan, observing the plan in action, reflecting on the action, and designing the next phase of the plan of action as Koshy (2010) described.

## Results

Action research is described as “taking action to improve something in your practice, and also about researching the action, which means investigating what you are doing and offering descriptions and explanations for why you are doing it” (McNiff, 2010, p. 12). My findings from this study reflect the effect of completing an action

research study on my teaching and on the learning experience of my students. I found the spiral nature of action research was effective in making a smooth transition from my direct teaching style to a more democratic approach with a shared responsibility for learning, as the changes that happened were incremental. I found this process was structured and flexible.

As part of the micro spirals, each week many incremental changes were implemented to enhance the teaching and learning experience of the students. See Table 3 for a sample as actions introduced to mitigate against concerns as they were identified. These were tried and analyzed to establish if their effects were positive.

**Table 3**  
*Sample of Issues Identified and Addressed*

<b>Week</b>	<b>Spiral of critical reflection identified</b>	<b>Incremental change planned, acted, observed, and reflected</b>
0	More student involvement in lessons, less teaching in-struction, more engagement	Students to take more responsibility for learning, using discussion and sharing
2	Lesson opener and discussion too long	Enhanced pacing of lesson, more time for physical activity
3	Presentation of writing needs to be enhanced	Prepared learning intentions and assessment criteria in advance and unfolded on flip chart to enhance presentation
4	Too many teaching points for students to remember and recall	Reduce the number of points of focus to 4
5	Time too limited for the student discussion	Allow more time for group discussion to achieve goals between students
8	Students getting bored with writing in SWLB	Change this format of plenary and data collection to video-taped oral questioning
10	Not enough opportunity for students to take lead role in class	Students lead the warm-up and cool-downs and use more students to demonstrate good skills
11	Allow more students to make decisions in class	Allowed more time for students to plan tactics in their games.

As part of the macro spiral of implementing action research over the intervention into my practice, the following findings were significant.

### **The impact of completing an action research study on myself and the students**

There were many benefits to using action research, and I present these in Table 4. These include (a) the role of action research in CPD, (b) the role of the teacher as action researcher, (c) the generation of knowledge and new practices, (d) action research as a collaborative practice, and (e) the long-term effects of using action research.

**Role of action research in CPD.** I read extensively before starting this intervention to learn as much as I could about action research. In implementing this intervention, I became a more reflective teacher and learned how to collect data, what tools I could use, and how to use these tool effectively to provide information, not only on the students' performance but also about my own. This gave me the confidence to develop my research skills so I could confidently produce and articulate a "rich description" of my findings. The most enlightening data collection tool for me personally was to review my practice critically from the video recordings of my lessons. I had not done this since my teacher training days. I agree with Mills (2011) that action research is about developing the professional disposition of the teacher and encouraging the teacher to be a continuous learner. I recorded in my field notes (Week 12),

I have worked hard to develop my knowledge and understanding of action research and it has given me the confidence to challenge the way that I teach and it has highlighted for me the impact of using critical reflection to enhance my performance. (T-FN-R)

This renewed confidence in my ability to reflect critically and find solutions was a process of professional engagement and renewal.

**Table 4***Results of the Intervention*

<b>Themes</b>	<b>Effect on the teacher</b>	<b>Effect on the student</b>
The role of action research in CPD	This interventions has altered my approach to CPD in the following ways: <ol style="list-style-type: none"> <li data-bbox="694 390 792 980">1. My knowledge and understanding of action research and self-directed learning has increased.</li> <li data-bbox="625 390 688 980">2. I became a more reflective and critical teacher.</li> <li data-bbox="556 390 619 980">3. I became more confident and assured in identifying what I wanted from my teaching.</li> <li data-bbox="487 390 551 980">4. I have developed the skills from action research to plan future contextualized CPD of benefit to my needs and that of my students.</li> <li data-bbox="419 390 482 980">5. It is a flexible approach and introduces incremental changes to an existing environment, lessening the “fear of change.”</li> <li data-bbox="350 390 413 980">6. My colleagues benefited by my sharing my knowledge and findings and developing a community of practice.</li> </ol>	The students benefited by: <ol style="list-style-type: none"> <li data-bbox="763 998 826 1586">1. Being involved in an intervention, for which they contributed to its design and outcome.</li> <li data-bbox="660 998 757 1586">2. The changes in practices that were introduced were directly relevant to their needs, to enhance their learning experience.</li> <li data-bbox="556 998 654 1586">3. The changes being introduced were gradual and applicable to their context and environment.</li> </ol>

**Table 4 (cont.)**

Themes	Effect on the teacher	Effect on the student
The role of the teacher as action researcher	<p>I was able to design CPD that:</p> <ol style="list-style-type: none"> <li>1. Was relevant to my needs and the needs of my students.</li> <li>2. Allowed me to use insider information on culture, curriculum, school policy, and student groupings.</li> <li>3. Allowed me to deal swiftly with any unanticipated events.</li> <li>4. Allowed me to adopt the role of facilitator of change and not a director of change, making it more acceptable to students.</li> </ol>	<p>The students benefited by the teacher:</p> <ol style="list-style-type: none"> <li>1. Already being familiar with, and trusting of, the teacher/person initiating and implementing change.</li> <li>2. Reducing the time at the start of the intervention, when trust is usually built.</li> <li>3. Being more motivated to participate with a familiar person.</li> </ol>
The generation of knowledge and new practices	<p>I developed the confidence and the skill to:</p> <ol style="list-style-type: none"> <li>1. Articulate and express the knowledge about what I was doing and why.</li> <li>2. Identify new practices as a way forward and not as a criticism of past actions.</li> <li>3. Recognize debate as a positive exchange of views by colleagues and not to be threatened by criticisms.</li> </ol>	<p>The students built their confidence and knowledge:</p> <ol style="list-style-type: none"> <li>1. Articulating their opinions.</li> <li>2. Being involved in member checking, for improving validity of findings.</li> <li>3. By trying new ways of doing things in class.</li> </ol>

**Table 4 (cont.)**

Themes	Effect on the teacher	Effect on the student
Greater detail and enhanced planning	<p>My approach to planning changed. It became far more rigorous.</p> <ol style="list-style-type: none"> <li>Lessons were more organized. The direction and content was based on the analysis of the previous lesson.</li> <li>The learning intentions and assessment criteria were clearly presented.</li> <li>A teaching strategy was adopted with greater student involvement</li> <li>Differentiated and inclusive questions were planned.</li> </ol>	<p>The students benefited from this in the following ways:</p> <ol style="list-style-type: none"> <li>Clearer focus for every lesson.</li> <li>Clearer assessment criteria.</li> <li>Open and differentiated questioning to suit all abilities.</li> <li>Stronger link from one lesson to the next.</li> </ol>
Observation, reflection, and analysis by the teacher to enhance learning	<p>Using the data collected to build a rich descriptive account of the lessons.</p> <ol style="list-style-type: none"> <li>Identifying strengths and weaknesses of lessons.</li> <li>Using the data to help direct future learning.</li> </ol>	<ol style="list-style-type: none"> <li>Greater clarity about the learning intentions and assessment criteria.</li> <li>Identify areas in which they are achieving and in which they have weaknesses.</li> <li>Identifying areas for further improvement.</li> </ol>
Improved student focus in lessons using observation and reflection		

**Table 4 (cont.)**

Themes	Effect on the teacher	Effect on the student
Improved focus during the lessons	<p>I achieved this by:</p> <ol style="list-style-type: none"> <li>1. Presenting the learning intentions and assessment criteria at the start of every lesson.</li> <li>2. Encouraging students to use them throughout the lessons to assess one another.</li> </ol>	<p>This benefited the students by:</p> <ol style="list-style-type: none"> <li>1. Keeping them on task.</li> <li>2. Encouraging more discussion among the students.</li> <li>3. Giving them greater ownership of their learning.</li> </ol>
Collaborating and sharing the responsibility for learning	<p>Adopting a more inclusive and involved learning strategy ensured that:</p> <ol style="list-style-type: none"> <li>1. I developed my listening skills and invited the students to contribute their opinions.</li> <li>2. My relationship with the students was enhanced as we collaborated on ways to enhance teaching and learning.</li> </ol>	<p>The students benefited by:</p> <ol style="list-style-type: none"> <li>1. Being more open to change as they felt they had some ownership of the process.</li> <li>2. Taking a more mature approach to their learning and that of their peers.</li> <li>3. Developing their confidence to tell their peers how to enhance their performance.</li> </ol>
Long-term effect of using action research	<ol style="list-style-type: none"> <li>1. Confidence increased to carry out action research regularly, to enhance teaching and learning.</li> <li>2. A useful tool to supporting sustained CPD within the school.</li> <li>3. Easily adapted across departments and across the school.</li> <li>4. Recognized the expertise within the school among staff.</li> </ol>	<ol style="list-style-type: none"> <li>1. Enhanced learning experience.</li> <li>2. Confidence to articulate their opinions.</li> <li>3. Understanding of the use the cycle of plan act, observe, and reflect to enhance their learning.</li> <li>4. Better understanding of how they learn.</li> <li>5. Better understanding of practice and purpose of learning in physical education.</li> </ol>

As part of this intervention, I regularly discussed with my colleagues the merits of action research, and we informally developed a CoP when I wanted to test ideas. When the intervention was completed, I delivered a CPD seminar to my colleagues (Halton, 2004; Somekh & Zeichner, 2009), presenting my findings and opening them up to critical scrutiny (McNiff, 2010). It created an interesting and active debate. It has opened up my colleagues' minds to the use of action research to enhance performance and the use of CoPs within our department.

**Role of the teacher as action researcher.** As Koshy (2010) and Robson (2002) did, I found many advantages to carrying out research in my own environment. I understood the culture, the educational philosophy of the school, and the background of the students. I knew the students individually and was aware of the social groupings within the class. This submersion made it easier for me to introduce new strategies and enhance their confidence in engaging with the process. The students enjoyed the changed nature of the relationship, wherein I became a facilitator of their learning, encouraging them to voice their opinions and giving them an opportunity to discuss ideas to achieve a learning intention. A clear level of trust already existed between the students and me prior to the intervention because I had been their teacher for 5 months prior to this. This increased their motivation to participate in the intervention. Fifteen students stated in the postintervention interview that they enjoyed participating in the intervention and would like to participate in a similar one in the future. Being an insider was also beneficial in noticing cues and interpreting their body language. I was able to react quickly when they had difficulties in sharing or trying to achieve a goal. I recorded in my field notes that the students were having difficulties using shared learning when the activity moved from the gymnastics unit to the volleyball unit (Week 7; S-FN-SL). I observed that a reduced level of communication was occurring among the students. Immediately, I responded by offering feedback, advice, and suggestions. Having this insider knowledge is considered by some as a bias, but it is also beneficial for the smooth implementation of an action research study.

**Generation of knowledge and new practices.** Using action research allowed me to generate theories particularly related to my

own practice, rather than depend on previously generated theories (Koshy, 2010). After initial reflection and analysis of my practice, I deduced that I needed to adopt a strong *shared responsibility for learning* strategy. I generated knowledge on how to collect rich data in my class, through the use of data collection. I also learned how to use inductive analysis to enhance my teaching. These new practices resulted in enhanced planning and attention to detail, improved student focus in lessons, the reflective teacher, and collaboration and shared responsibility for learning.

***Enhanced planning and attention to detail.*** In my planning, I was no longer focused on summative outcomes but on formative outcomes. I became more conscious of how students learned and on involving them more in the process. Having used Schön's (1983) reflection-on-action, I noticed that this increased level of planning resulted in me establishing a structured and organized program of work, which had a clear focus, teaching methods, and a desired and specific outcome (MacPhail, 2007). After Lesson 8, I recorded in my field notes,

This study is helping me to make a concerted effort to focus much more on, what I am doing and why I am doing it. I think most of the students are more focused in the lesson with definite and clear objectives to focus on. (T-FN-P)

***Improved student focus in lessons.*** The learning intentions and assessment criteria were shared, discussed, and posted at the start of the lesson and could be referred back to during the lesson for focus and guidance. In my field notes after Lesson 3, I recorded, "The students enjoyed the focus at the start of the lesson. They were eager to engage in answering the questions and taking part in the demonstrations that revealed the learning intentions and the assessment criteria for the lesson" (S-FN-F). Fourteen of the students stated in the postintervention interview that this was a good way to start the lesson (S-PoI-LI/F). Mariam stated, "Writing up the intentions for the lesson was good." She added "We know what to do and what to focus on for the lesson" (S-PoI-LI/F). Muneera said, "It helped by writing the points of the lesson, it made it easier to remember because we talked about it and wrote them up so it was easier to

remember when we went outside” (S-PoI-F). Action research uses a strong emphasis on observation and reflection, and this became part of the student learning. From the SWLB in Week 3, Reem advised her partner “to keep her legs straight” (S-SWLB-O/Fb), and Fatima advised her partner “to hold her balance for 5 seconds” (S-SWLB-O/Fb). Mariam and Zain both stated that they learned from observing the mistakes their partners made and that this helped them to avoid making the same mistakes (S-PoI-R).

Completing the SWLB, the students revisited the learning intentions and assessment criteria at the end of the lesson and graded their performance against them.

***The reflective teacher.*** Action research reflection occurs as Schön (1983) described, “on-action,’ where we reflect on action, thinking back on what we have done in order to discover how our knowing-in-action” (Schön, 1983, p. 26). During the intervention, this reflection occurred “in-action,” by allowing us to adjust and reshape things as we worked on them. This would support McNiff’s (2002) and Whitehead’s (2009) theory that action research is about creating living educational theories, making a claim to knowledge, and modifying a practice in light of this new knowledge. By getting the students to complete the SWLB, I was able to analyze these data to establish “students-learning” in this new approach to teaching. I used the data collected to make changes within my lessons. I recorded after Lesson 4, “I should use no more than 4 points for the assessment criteria as it was too much for students to recall” (T-FN-P). After Lesson 10, I recorded,

Zain was always outside the line of play and I felt that her body language indicated that she did not want to be involved. I must ensure that in next lesson she gets more involved, even by using rules that more passes are made in a mini-sided game. (T-FN-R)

***Collaborating and sharing the responsibility for learning.*** Action research requires power sharing, between students and teachers and between teachers and academics (Fullan, 2005; Miskovic & Hoop, 2006). This approach required me to shift from my direct teaching style to a more collaborative democratic style. The involvement of

students as collaborators in this study was critical to the implementation of the strategy and the outcome of the study (Brydon-Miller & Maguire, 2009; Cain, 2011). The evidence highlighted this development in the postintervention interview. Dina stated, “I learned teamwork from talking with my partner, she listened to my advice and every time I told her she did it better” (S-PsI-SR), and after Lesson 5, I noted from analyzing the video that Zaina taught Huda to do a “bridge” (a gymnastics element) and they were excited (S-V-SR). The students enjoyed the greater responsibility given to them in their learning, and they were more motivated in class (Gubacs-Collins, 2007). After Lesson 6, I recorded in my field notes,

I really think that the students are working well, and when kept on track, are continuing to use the new strategy. . . . I think gymnastics is a particularly good activity to see it in action as they sit, discuss and work towards a final product in a routine. (T-FN-C/R)

I also noted that this collaborative practice brought me closer to the students and enhanced my skill of listening to the opinions of my students and acting upon them. The students voluntarily participated in the interviews and regularly shared their ideas and thoughts about the intervention, which I recorded. This developed the students’ self-confidence as they realized the value of their role as contributors in a collaborative process.

Collaboration also occurred spontaneously between my colleagues and me as I discussed with them aspects and themes of the study as they emerged. They were eager to engage and offer opinions. Through this process, I established a CoP or “critical friends” (McNiff, 2010).

### **Challenges in Using Action Research**

Two of the major challenges to using action research that I identified from the literature related to (a) people’s lack of knowledge of the process and (b) the time commitment of implementing action research.

## **People's Lack of Knowledge of the Process**

This democratizing of teaching requires teachers to relinquish their traditional role within the classroom, to one of shared learning and allowing students have an input into their own learning. (Brydon-Miller & Maguire, 2009). It has been found to be a difficult method to follow, both procedurally and because of the tension between being closely embedded in the context and process of explanation and the research needing to be honest and balanced (Robson, 2002). Many teachers have also stated that they have difficulty determining which tools to use and how to make sense of the data collected. It is not often included as part of teacher education courses, and they are intimidated by the notion of policy recommendations that can emanate from their research (Rust & Meyers, 2006). It is this lack of confidence and expertise that has been at the heart of some teachers' difficulty in getting started, with many being anxious and intimidated by the process of using action research (Rust & Meyers, 2006). To mitigate against this dilemma, establishing a teacher network or CoP would help to give teachers the confidence to engage with action research because they can develop the necessary skills through engaging with the process (Halton, 2004; McPhail, 2007). This process highlights the importance of sharing information, experiences, and thoughts of continuous interaction as well as of participating in joint activities (Wenger, 2006).

## **Time Commitment of Implementing Action Research**

Many researchers have identified the time-consuming and labor-intensive nature of adopting action research as a major cause for concern for teachers (Casey & Dyson, 2009; Clayton et al., 2008; Robson, 2002; Rust & Meyers, 2006). Halton (2004) stated that action research was expensive in terms of time and resources and that teachers needed encouragement to be involved.

I knew from the outset the process would time consuming, and I was prepared to build this into my professional development as being time invested in achieving my goal of professional enhancement. It took months of preparation to plan the intervention, implement it, and analyze the data collected. Planning each lesson took a considerable amount of time because it was dependent on recording and analyzing the data from the previous lesson. If I intended to expand

this approach to all my classes, the time commitment would be unsustainable. The principles of this approach have proved worthwhile, and I value the knowledge and experience I obtained, but I envisage that it is something I would carry out no more than once every 2 years if it is to be done with the same level of intensity. I have no doubt I would become more skillful and efficient in using this technique and that it would become less labor intensive over time. But for my first efforts in using action research, I was determined and motivated to improve my practice and the students' learning experience in my class. I would recommend to potential researchers that before engaging in a research project, they are aware of the time commitment involved in planning, implementing, and analyzing the data from such an intervention. This awareness will help to ensure they reap the maximum benefits from such a project.

## Conclusion

Change is a necessary part of the education process. Participation in the change process ensures the commitment of those involved (Farren, Ryan, & Tobin 2006) including colleagues and students. Action research proved to be structured and flexible. I was able to decide on an area of research that was directly relevant to my needs (Brydon-Miller & Maguire, 2009). It gave me new skills to bring about enhancements in my practices. It was an extremely valuable form of CPD.

The use of action research also had a profound effect on the students in relation to their increased focus on reflection and observation. It also enhanced their learning experience and supported their shared responsibility for learning and learning as a collaborative process.

The concept of CoPs (McNiff, 2010; Wenger, 2006) or "teacher networks" (Rust & Meyers, 2006) would be beneficial to support teachers as they build their confidence and share ideas on how best to achieve their aims in developing their techniques to solve individual issues and problems or indeed to enhance normal practice in their workplace and influence educational reform and policy making (Rust & Meyers, 2006). CoPs take time to develop, the use of authentic interaction, and discussion supported by teachers who are willing to make changes to develop their skills and implement pedagogical change (Goodyear & Casey, 2013). Action research should

become a compulsory aspect of teacher education colleges because it is a skill for lifelong learning and because of its potential importance for CPD. As Casey (2013) advocated, action research is a means for supporting sustained change and enhancing normal practices that occur in the name of physical education. Though we did not alter our curriculum as a result of this intervention, it certainly changed the way we critically analyze our performance during and at the end of each year. Action research can have an enormous effect on how educational change is delivered that can be felt in classrooms, gymnasiums, playing fields, and beyond.

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