Currently, the technical approach to curriculum and instruction in physical education is dominant. The key features of this approach are: the use of behavioral objectives in planning programs and instructional episodes; selection of subject matter and teaching strategies based on intended learning outcomes; and assessment of behavioral outcomes using measurement and quantification. An alternative to the technical perspective on physical education and instruction is an approach based on reflective practice. Two key ideas in this alternative approach are pedagogical work and educational praxis. Praxis refers to the inseparability of theory and practice. The notion of pedagogical work as praxis, in contrast to the objectives approach or blue-print conceptions of teaching, encourages teachers to be inventive and reflective. A praxis approach to pedagogical work is essentially a structured way of learning from experience; it is practice-based or practice-referenced. Two methods of promoting praxis and reflectivity in preservice and inservice teachers are the use of action research and the use of teacher journals. The four phases of the action research cycle are planning, acting, monitoring, and reflecting. The journals aim to move teachers toward praxis by assisting them to make sense of their work through critical appraisal of relevant literature within the context of their own experiences. (IAH)
PHYSICAL EDUCATION PEDAGOGICAL WORK AS PRAXIS

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Physical Education Pedagogical Work as Praxis

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Physical educationists have recently begun to respond to perceived shortfalls in the progress that has been made in improving the quality of physical education teaching and learning. A recent international congress held in Atlanta and co-organised by NAPHE and AEISEP in January 1991 took as its theme the question of improving collaboration between researchers and practitioners. Many of the presentations made at this congress revealed that alternative approaches to pedagogical work in physical education are being explored, particularly through the joint involvement of workers in schools and in research institutions. This congress is just one prominent example of the growing movement in physical education to explore new ideas for improving teaching and learning. This paper is a contribution to this process of exploration and reconceptualisation.

The primary goal of this paper is to present an alternative view of curriculum and instruction in physical education, building on our experiences as teacher educators and researchers, and focused by the notions of pedagogical work and educational praxis. This alternative will be developed in several stages. The first stage involves analysing and summarising very briefly current perspectives on curriculum and instruction in physical education. The second stage provides an explanation of the notions of pedagogical work and educational praxis, and indicates how these offer an alternative to current perspectives and practices. The third stage provides examples of our experiences of teaching curriculum and instruction courses in physical education informed by this alternative view. In the process, the possibilities and limitations of this alternative are assessed in relation to conventional approaches to curriculum and instruction.

I

The currently dominant approach to curriculum and instruction in physical education is broadly informed by the rationale developed by the American educationalist and psychologist Ralph Tyler. The key generic features of this approach are: the use of objectives in planning programs and instructional episodes; the selection of subject matter and teaching strategies based on intended learning outcomes expressed as objectives, usually in behavioural form; and assessment of the behavioural outcomes of instruction involving measurement and quantification. According to this view, the processes of curriculum and instruction proceed in a lock-step, sequential fashion, in which each feature of the process implies the other.

Importantly, Tyler’s original work stressed the significance of studying curriculum and instruction within clearly articulated considerations of social conditions. In contrast and with few exceptions, physical educationists have generally tended to foreground technical, procedural considerations of curriculum and instruction and to leave relatively unarticulated, or assumed, considerations of the social conditions in which their work takes place. We suggest that the ways in which the Tyler rationale has been applied in physical education has been informed by a
technical view, in which the frames of reference curriculum and instructional workers draw on to think about physical education derive from fields such as natural science, technology and engineering. Within this technical view, physical education programs are analogous to blue-prints, including detailed planning and intricate specifications, measurements and quantifications. As with other blue-prints and specifications, the intended effects of this approach are prediction, standardisation and normalisation of learning outcomes, and systematisation and control of the pedagogical process.

II

This paper offers an alternative perspective to this technical view. Two key ideas in this alternative are pedagogical work and educational praxis.

The notion of pedagogical work is used here to conflate tasks centred around curriculum and instruction. In so doing, we are proposing that all work which is of direct relevance or significance for teaching and learning in physical education is pedagogical work, regardless of whether this is carried out in schools or in research institutions, or whether it relates to planning or teaching an educational program. By bringing these processes together, an attempt is being made to show that curriculum and instructional work are interdependent. As such, they can only be treated separately at risk of misrepresenting the processes of teaching and student learning, since each is an essential dimension of a dynamic dialectic.

In a similar fashion, in order to avoid binary (either/or) conceptions of such dialectical processes, the term praxis attempts to capture the interrelation of thought and action. This term suggests that each of these elements of human activity is mutually constitutive of the other. Consequently, praxis refers to the inseparability of theory and practice, and can be defined as informed, purposeful human action. We suggest that, within an educational context, and along with the notion of pedagogical work, educational praxis can be utilised to demonstrate the mutual interdependence of all work related to teaching and student learning in physical education. It can also illustrate the need to reinstate Tyler's concerns for the social conditions in which physical education is embedded if pedagogical work is to qualify as informed and purposeful.

Within this overarching notion of educational praxis, the idea of pedagogical (curriculum and instructional) work can be contrasted with current technical practice. Pedagogical work as praxis involves disciplined action, it recognises the contemporary nature of professional practice as unpredictable, complex, situation specific and value laden (Schon, 1982), and it builds ways of handling spontaneity, inspiration, creativity, and ambiguity into teaching physical education. As praxis, pedagogical work can be careful and thoughtful, but at the same time draw out the particular qualities of teachers and learners, and capitalise on the contingencies inherent in every practical teaching and learning situation. Given the dynamic and variable circumstances in which physical educators must now work, especially in high-density urban areas where social problems
are confronted daily within the classroom and the gym, powerful procedures such as these are
essential. The ability to be inventive, to be able to think beyond tried and trusted but perhaps now
obsolete solutions to particular problems, to be generative and at the same time maintain control of
the teaching and learning process, are qualities which are desperately needed in many schools
today.

We argue that if we wish to supply tomorrow's pedagogical workers in physical education
with pedagogical skills which will equip them for both the present and the future, we should be
providing capabilities which allow them to learn from experience, to regenerate, and to be able to
imagine beyond experience; in a word, to be reflective (Gore, 1990). Curriculum and instructional
work conceived as technology is limited in this respect since, in foregrounding control and
precision, it arguably closes down possibilities. Conceptions of teaching which are inspired by a
'blue-print' notion of planning fail to give sufficient credit to the human qualities and capacities
of physical education pedagogical workers. Such qualities and capacities are essential for
reflective practice. It is important to understand, however, that careful planning is not neglected in
this alternative to the objectives approach. Rather, interwoven with attention to such planning
concerns is the aim of problematising teaching and learning in ways the objectives approach rarely
manages to do.

For a physical educationist doing pedagogical work, technical questions of 'how to do it?'
arise and need to be treated seriously. However, we believe that they should be considered more
in terms of 'what if?' possibilities for action, rather than as prescriptions for action. Posing "what
if?" rather than "how to" type questions enables a teacher to consider the implications of what is
taught and how it is taught, and how teaching can be improved, in addition to the rather utilitarian
question of "does it work to solve the immediate problem at hand?".

The notion of pedagogical work as praxis provides, in our view, one powerful alternative
to a technical approach to curriculum and instruction in physical education. Asking "what if?" type
questions is akin to what Stenhouse (1975) called 'planning by hypotheses'. In this process
pedagogical workers treat learning outcomes as dependent on a range of circumstantial and
substantive factors. According to Stenhouse (1975, p. 142), this approach provides "a way of
translating any educational idea into a hypothesis testable in practice. It invites critical testing rather
than acceptance". Pedagogical work does not produce prescriptions for what teachers and pupils
are to do, but instead provisional strategies which facilitate rather than constrain or obstruct the
pedagogic interactions of teachers and learners.

III

Working with specialist physical education teachers (particularly), we have found their positive
experiences of competitive physical activities generally lead them to be enthusiastic advocates for
sport. We also find that most have a very solid grasp of biophysical knowledge relevant to physical
performance. While these are admirable qualities, they can lead in many cases to a generally
unproblematic view of teaching and learning in physical education. This can also be so for generalist primary school teachers who, for quite contrasting reasons, adopt views of physical education which are unquestioning. Often, we find that generalist primary teachers are unwilling to look beyond their own experiences of physical activity at school -- many of them negative -- and so miss much that is important and valuable in the subject. In the case of both specialists and generalists, we believe that planning by objectives rarely assist these teachers to reflect critically on their aims, content and pedagogy. A praxis approach attempts to do just this.

A praxis approach to pedagogical work is essentially a structured way of learning from experience. These structures are intended to provide practitioners with opportunities to focus on particular aspects of their work as teachers and to collect evidence which can be used to inform their judgements about future courses of action. Consequently, this approach is of necessity practice-based or practice-referenced. In each of the curriculum and instruction units in which we have utilised a praxis model, teachers have been required to work with issues and problems in the workplace. We consider this to be an essential requirement of striving for educational praxis. Within this rationale, we have experimented with two methods of approaching praxis and reflectivity with teachers, one utilising action research and the second involving the use of teacher journals.

**Action research**

Kemmis and McTaggart (1988) have elaborated a notion of action research which has close affiliations with Stenhouse's planning by hypotheses approach and with the notion of pedagogical work as praxis. Action research, they suggest, should be participatory and collaborative, and should be organised around the shared identification of particular thematic concerns. A thematic concern might be a broad educational issue or question, such as "how would the notion of 'teaching games for understanding' work with my year 10 class?", or it could focus on a specific concern such as "how can I reduce the amount of disruptive behaviour caused by Billy Smith in year 9c physical education classes?". 

The central feature of action research for Kemmis and McTaggart is the need for pedagogical workers to collect and review evidence of teaching and learning in a systematic and regular way. This way of working is the embodiment of Stenhouse's notion of 'teacher as researcher'. Kemmis and McTaggart suggest action research is concerned not just with helping pedagogical workers interpret situations, but also with helping to change them, and they, like Stenhouse, place people at the centre of the process. They adopt a particular view of social science which is "distinct from a view based on the natural sciences (in which the objects of the research may legimitately be treated as 'things'); action research also concerns the 'subject' (the researcher) him or herself" (Kemmis and McTaggart, 1988, p.22). As such, it is people who grow and develop as they do pedagogical work. And as they develop in understanding and insight, they also
elaborate their repertoires of experiences and enhance their practical capabilities to meet new needs and contingencies.

In the case of Kemmis and McTaggart's *Action Research Planner*, practical procedures for carrying out action research are provided, procedures which are detailed and systematic, but are also flexible and adaptable. We have utilised these procedures in courses involving primary generalist teachers and secondary specialists, in both on and off campus modes, and with student teachers and experienced teachers (see Tinning, 1987a&b; Kirk, 1986). In all cases, our students (student teachers and teacher students) were required to use the four moments of the action research cycle, of planning, acting, monitoring and reflecting, to structure their activities. Depending on the length of the unit, its place in a course and contact time, we would expect teachers to work through at least two cycles and, in some cases, three or more. Importantly, the phases of the cycle are not lock-step or linear. Indeed, as we will see shortly, planning and reflection are similar processes, and monitoring only takes place in the context of action. The whole process is a sort of rolling change investigation. Hypotheses of the "what if?" variety are tested by means of data gathering and reflection, and on the basis of insights gathered from the reflection, future change strategies are proposed and subsequently tested. But, the process has to begin somewhere and planning is, accordingly, the first phase in the first cycle. In subsequent cycles the reflection phase incorporates the planning.

Planning

The first phase of the action research process, planning, is of central importance to the success of the process. Planning consists of a number of key elements. The first is these involves a reconnaissance of the setting. Some teachers enter the reconnaissance phase with ideas already in mind, and in this case an assessment of their situation in its broad context can help sharpen and focus these ideas. For others, the reconnaissance provides a degree of distance, assisting them to generate issues which might benefit from further investigation. For others, the reconnaissance provides a degree of distance, assisting them to generate issues which might benefit from further investigation.

The second element of the planning phase is the identification of a theme embracing an issue or cluster of issues to be investigated. We require students to work with a critical friend(s) (a person with whom they get along and who will assist them in collecting data and discussing their work). Some of our students have used fellow teachers as critical friends, some have used parents, and others have even used pupils from their own class. Collaboration is especially important as teachers are attempting to shape ideas and locate these within the literature. In our experience, the issues teachers identify tend to straddle the complete range, from very specific and substantive to general and abstract. Reconnaissance and the identification of issues together are intended to encourage practitioners to problematise their practice and other taken for granted features of their everyday professional lives. By requiring teachers to explicitly attempt to identify the theories-of-action (Smyth, 1987) which underpin their practice, and to locate their chosen issue(s) in the
context of relevant literature on physical education pedagogical work, we are encouraging the development of informed and committed action, which we consider to be central to praxis.

These first two phases are often the most difficult for teachers, preservice and experienced alike, and so may require some considerable time (and patience) on the part of the course coordinator and critical friend. Two key questions guide this phase of the process, "what’s happening?" (a sort of baseline data recording), and "what are the implications for what is done and the way it is done?" Since these questions are aimed at encouraging teachers to problematise taken for granted matters, the process can be stressful and can lead to resistance. On the other hand, and most commonly, we have found that many teachers become passionately interested in finding out more about aspects of their own teaching once they have information about what is actually happening in their classes.

During the reconnaissance phase, we sometimes suggest that teachers have someone videotape a lesson (if the necessary equipment is available), or that they take photographs to capture what they consider to be the most illustrative or telling images of their work. In this sense, reconnaissance often entails consideration of monitoring procedures which are necessary to collect data of what’s happening in order to subsequently identify appropriate hypotheses. In the case of videotaped recordings, teachers’ reactions are sometimes incredulous when they discover, for instance, that they almost completely ignore a whole section of their class during the lesson, or that they invariably respond negatively to particular children, or that their presentation of an activity is clearly making no impact on their pupils. Alternatively, or in addition, teachers are asked to tell their critical friend about the photographs, explaining what is significant or interesting about the images. This story-telling sometimes assists teachers to see things in their photographs that they hadn’t been able to see or, at least, register consciously, in the flow of lessons.

The third element of the planning phase is to identify strategies which address the theme and issues to be researched. Provided this theme is fairly clearly defined, the selection of a course of action is relatively straightforward. The key point in identifying a course of action is that it should offer an alternative to current practice in some form or other, the effects of which then need to be carefully monitored. One of the difficulties of action research often presents itself for teachers at this stage. If the monitoring techniques have been working efficiently, the record may not only illuminate the matter in hand, but can also open up to view new issues. This, of course, is the point of the process, at least in part. However, teachers can feel overwhelmed by the range of matters worthy of their attention, and by the enormous complexity of the task. It is a bit like opening Pandora’s box. The critical friend has a crucial role to play at this stage, assisting the action researcher to stay on course as s/he enters a second or third cycle.

Reflection

Once a situation or issue is recognised as problematic for a teacher, and data is collected which illuminates what is happening with respect to that issue, the next step is for the teacher to make
judgements concerning what the data reveals. "What are the implications of what is taught and the way it is taught?" and "how can it be done better?" become the key questions and they can only be pursued by locating the issue in a broader frame of reference. In collaboration with associates or critical friends, the teacher must integrate the data, comparing their findings with what is already known about the issue in the literature, attempting to recognise the theories-in-use which underpin their practice, and making judgements about what might warrant change and the pedagogical strategies which will be employed in attempting to bring about change. And so the process of reflection is integrally related to the process of planning for future work. The implementation of change strategies fulfils the requirements of praxis, namely informed, committed action.

For example, a teacher who was doing an award bearing course from a university in which one of us formerly taught was required to conduct an action research project on some aspect of her teaching. She was interested in the issue of sexist language in her own teaching. The teacher became interested in the issue after reading a paper called 'Playing a Different Game' by Helen Waite (1985). She wondered if, as Waite had suggested, there were connections between her use of sexist language and the form and content of the activities she was teaching. The first thing she did was to collect (via a tape recording) data on the way in which she used language in her regular physical education classes. This amounted to a sort of baseline data against which the impact of certain change strategies could be judged. She then sought the help of a colleague who agreed to observe her teaching once a week and collect data relating to the teacher's use of language.

The teacher decided to introduce touch football to her students (which has no physical contact), and to use this game as a model for modifications to others (such as basketball, field hockey and soccer). During her first action research cycle, she collected data in two ways. First, she tape recorded her speech during lessons, in order to judge whether her language remained constant or whether the new game form provided a different enough context for non-sexist language. Second, she kept anecdotal notes of her awareness of what she was saying as she taught the lesson and of any memorable episodes of student behaviour. These were scribbled down in haste between lessons and expanded somewhat in the hour after school. She also listened to the thirty minute tape the day the data was collected, and noted in writing anything of interest. This record formed the basis of conversations with her critical friend, which took place once per week. The critical friend was also available to observe one lesson each week, and she took rough notes as she watched and brought these observations to their discussions. Since she taught the class three times during the week, she decided two weeks would form one cycle, providing enough data to make good decisions about what to do next. Since the course only required two cycles, she completed the project, wrote her report and submitted it for assessment.
Journals

Another method of approaching praxis is the use of practitioner journals. This is more than simply keeping a diary, though the concept is not dissimilar. Journals resemble diaries in so far as they contain a chronologically ordered sequence of written reflections on events. The difference between them is in the fact that the journal is intended to form a record which is used for the purposes of learning from experience in collaboration with at least one other person. We have used this method of approaching praxis on courses where the focus of the teacher's concerns is often broader than particular lessons or any other logically and serially linked set of actions. For instance, the educational status of physical education in the school curriculum might be the point of focus for a series of journal tasks, centred around a decision of a school's curriculum committee, let's say, to switch to using student profiles rather than grades as the main means of reporting on student performance and attainment.

These sorts of adjustments and developments are happening all the time in schools, and journals present a means of focusing teachers' activities and approaching an issue and its ramifications in an informed and reflective way. In off campus courses with inservice teachers, we have used journals as a means of integrating the teacher's understanding of the literature surrounding a topic with their workplace experiences. Usually, teachers are required to complete a number of specific tasks centred on a topic, which can be interpreted broadly enough to be applied to the specific circumstances in which they work. The aim of the journal is to move teachers towards praxis by assisting them to make sense of their work through a critical appraisal of a sample of relevant literature in the context of their own experiences. The tasks are carefully structured so that they do not overwhelm in the way that other writing tasks, such as an essay, sometimes can.

The practical possibilities of action research and journal writing for teachers

The teacher mentioned in the action research example above claimed that she gained a great deal from her involvement in the project. She claimed it was "the most relevant thing I have done at uni in pursuing this inservice degree". But she didn't pursue it once the assessment was completed. Why? Similarly, teachers who have used journal writing have extolled its value for their understanding of their educational practice, but most of them ceased to continue their writing when the course was completed. Why? We suspect that given the daily demands, stresses and strains of teaching, it is unreasonable to expect teachers to engage in action research or journal writing on a continuing basis. Almond (1982) suggested that there are times in the school year during which teachers work is less frenetic and teachers can indulge in researching their practice in a systematic manner. It is at times like these that action research and journal writing could be used as a means of approaching and thinking about praxis. It is our belief that even infrequent attempts
at action research and journal writing can provide useful insights into pedagogical work. Also, such insights can be enduring in that they continue to provide new ways of seeing which can be used in the more common, less structured, forms of day to day reflection. How practitioners might incorporate praxis as the goal of their pedagogical work is as yet poorly understood in physical education, and some longitudinal studies of action researchers are desperately needed.

The Atlanta conference was a useful beginning, and together with the recent special JTPE monograph on 'Collaboration for Instructional Improvement: Models for School-University partnerships', some useful insights have been provided into how some physical educators are thinking about alternative approaches to their pedagogical work. Our attempts to understand how teachers and teacher educators may develop a critical, reflective approach to their work must encompass not only epistemological issues but also an understanding of the institutional and personal contingencies which mitigate against new and worthwhile conceptions of pedagogical work as praxis.

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