

TEACHING SWIMMING: ISSUES BEYOND DROWNING

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Abstract

Recognising that swimming is a skill that must be acquired to avoid the very real dangers of drowning, it is of concern that many pupils are apparently not making swimming progress during the secondary school years. This paper presents the results of a questionnaire investigating the current status of swimming and water safety programmes in seven Western Australian secondary schools. With reference to the Year 8 level, the Head of Department described the sort of activities undertaken, perceptions of the importance and relative success of the programme, issues of concern, and pedagogies employed to deal with different ability levels.

Definitions of swimming abilities, as determined by the teachers, are particularly diverse for the categories, 'non-swimmer', 'weak swimmer' and 'moderate swimmer'. On average, non-swimmers constitute 9.5% of a Year 8 Physical Education class. The remainder of the active class participants were categorised as weak swimmers (21.0%), moderate swimmers (52%) and strong swimmers (15.7%). Physical education teachers value swimming programmes highly and see 'coping with varied swimming ability levels' as a major concern, second to the issue of 'staff/student ratios'. Schools devote the majority of their swimming class time to 'stroke technique analysis and correction'

In some secondary schools weak swimmers are coached by non-participants, while the staff are generally engaged teaching to the majority/average of the class. Streaming according to ability occurs in some schools, while in others, weak swimmers are maintained in the lane nearest the edge. At times weak swimmers are required to sit-out for a while.

Introduction

With the parent belief that all Western Australian children should have the ability to save another person (RLSS, 2001c), it is clear, from a current assessment of student outcomes/achievement, that the secondary school Physical Educator has much to do! With students in physical education classes possessing a range of abilities, an individualised programme designed to alleviate pupils' fears and improve the students' aquatic skills presents as a major pedagogical challenge.

This paper presents the results and examines the implications of responses from a questionnaire completed by the 'Head of the Physical Education Department' in seven schools. With reference to the Year 8 level, secondary school teachers raise issues beyond drowning and describe pedagogies employed to deal with varied ability levels.

The climate, a coastline with a seaboard population, and a high rate of private swimming pool ownership all contribute to make swimming an integral part of the Australian (Pearn & Nixon, 1979) and Western Australian (Ministerial Swimming Review Committee- Report (MSRC-R), 1995) lifestyle. Recognising that swimming is a skill that must be acquired to avoid the very real dangers of drowning, it is believed that no child should leave primary

school without having the opportunity to learn the swimming and water safety skills to survive (MSRC-R, 1995).

Although 'every pupil a swimmer' may be an important outcome of the school physical education programme, it is necessary that if we are to help students become safe in the water, the secondary school programme moves pupils beyond the 'I can swim' and 'I don't drown' stage (Hardy, 1987). The availability of swimming instruction at school, along with proximity to an aquatic environment, socio-economic status (Langley & Silva, 1986), and psychological factors such as the level of introversion (Nias & Hardy, 1971), have been identified as influential in a child's potential swimming ability. While schools with a pool have been shown to allocate more time to swimming than those without a pool, the emphasis placed by the teachers on children's swimming proficiency and teaching methods have long been considered important factors influencing secondary school swimming programmes (Page, 1976).

Personal reflection and anecdotal evidence suggests that many pupils are not making swimming progress during the secondary school years. In Queensland children who could swim 10 metres at aged ten years (90%), remaining unchanged from that recorded at age fifteen years (92%) (Pearn & Nixon, 1979). Similarly, Page (1974) reported that the number of primary school leavers in England who could swim 25 yards (60%-70%) was not different to that leaving secondary school. Comparatively, seventy-one per-cent of a sample of New Zealand children aged nine years, were reported to be able to swim 10 metres or more (Langley & Silva, 1986). This research concurs with that of Hardy, (1991a) who suggested that the majority of pupils learn to swim during their primary school years.

Swimming curriculum

Aquatic education in some Australian primary schools has been reported to be in crisis (Cross, 1997); while it seems no agreement can be reached, be it skill development in a few activities, wide exposure, both, or physical fitness development, as to purpose of middle school physical education (Batesky, 1991).

While school can spark life long interests in swimming, it can also extinguish them permanently (Glyptis, 1982). Similarly many students will not try swimming at all if they perceive that standards are unreachable (Kleinman, 1997). Others suggest that swimming in schools appears to have lost the fun element (Hardy, 1989). Swimming has been seen as an important physical education activity because, amongst other things, it affords the opportunity to save life and it provides a medium for developing health and fitness (Barter, 1992).

The Education Department of Western Australia (EDWA) Swimming and Water Safety Continuum is a teaching framework that provides direction to teachers of pre-secondary school aged students in 'what to teach', 'when to teach it' and guidance in 'how to assess it' (EDWA, n.d., a). It is estimated that up to 85% of primary school aged children participate in the EDWA 'Interm Swimming Program', while up to thirty percent participate in the annual 'Vacswim Programme' (EDWA, n.d., c). Forty-one performance requirements are described under the sequential Stages 1 - 9 in the EDWA Interm swimming continuum (EDWA, n.d., a). In addition, Stage ten, eleven and twelve are offered in the Interm programme with certification for these levels provided by the Royal Life Saving Society (RLSS) (Department of Education, 2001). Vacswim, as offered by EDWA, offers a Calm Water/Pool Centre programme and a Beach programme, with successful participants in Stages ten to sixteen receiving a Royal Life Saving or Surf Life Saving Association certificate, respectively.

A Swimming and Water Safety Framework detailing the desirable standards for school based aquatic education has been developed by the RLSS together with the Water Safety Council (RLSS, n.d., a). The Framework provides a basis for developing and selecting an appropriate swimming and water safety programme for aquatic educators and schools (RLSS, n.d., a). The seven Framework Standards are aligned to the years of primary schooling; moreover, sixteen levels are identified within the RLSS Swim and Survive continuum. The Senior Swim and Survive/Wade Rescue of the RLSS continuum have been aligned with Year seven. Furthermore, Year 8 and the Accompanied Rescue, Year 9 and the Bronze Star, and Year 10 - 12 and the Bronze Medallion have been aligned (Catholic Education Office, 2000). Whilst not prescriptive, the framework sets out a skill-based continuum from which an individual's progress may be mapped.

The Royal Life Saving Society Swim and Survive Levels one to five equate to Stages 1 to 9 in the EDWA programme (EDWA, 1995a). Furthermore, the Royal Life Saving Society Australia provides an Awards Scheme encompassing several strands: Water Safety, Swim and Survive, Rescue, Bronze and Advanced Lifesaving (RLSSA, 1995).

The Curriculum Framework for Kindergarten to Year 12 Education in Western Australia aims to improve the learning outcomes of all students. It proposes to achieve this through providing direction about learning, teaching and assessment in outcomes-focused education. As a Framework, it assists teachers to develop programmes and assess the effectiveness of their teaching by the outcomes students' achieve (Curriculum Council, 1998). These learning outcomes were developed to ensure that all students have the necessary knowledge, understanding, skills and values to lead successful lives now and in the future. The Education Department of Western Australia has detailed information on how the Interm Swimming Programme links to the key principles of teaching and learning within the Curriculum Framework (EDWA, n.d., c) and to the Student Outcome Statement's progress map (EDWA, n.d., b). The latter of the above mentioned identifies such learning outcomes as 'Skills for Physical Activity', where Level six of the Learning Outcomes (Skills for Physical Activity) is achieved by completing Stage 9 of the EDWA Swimming Continuum. Additional learning outcomes including Knowledge and Understanding, Self-management Skills, and Interpersonal Skills, and the associated EDWA Swim Stage (1 to 9) are also identified (EDWA, n.d., b). Survival skills and rescue skills, as identified in Level 7 of the Curriculum Framework Learning Outcomes, are deemed to be evident when a student has achieved the requirements of the RLSSA Bronze Star, Medallion or Cross awards; while, Level 8 equates to the RLSSA Award of Merit or the Distinction Award (Future Movement Education, 2001)

Swimming abilities

Pearn and Nixon (1979) in their review of 4,000 Queensland children defined swimming as the ability to swim 10 metres or more, while Barrell and Trippe (1973) defined non-swimmers as unable to swim 10 yards in a relaxed and competent manner.

Current claims in Western Australia suggest that over 60% of primary school students are achieving a Stage 6 in the EDWA based 'Interm Swimming Programme' (swim 50 metres of freestyle, 25m of backstroke, 25m breaststroke) (Shaw. G. personal correspondence, June 5, 2001). However, a competent swimmer has been defined by the Ministerial Swimming Review Committee - Report (MSRC-R, 1995) as a child who reaches the end of Stage 9, this being equivalent to the swimming requirements of a Level 6 of the Student Outcome Statements as defined in the Curriculum Framework (FME, 2001). Furthermore, 40% of primary school students are achieving Stage 9 of the 'Interm Swimming Programme' (Swim 300 metres with a variety of strokes) (Shaw. G. personal correspondence, June 5, 2001). This information conflicts with data suggesting that in 1994 there was an 85.45% drop in

participation between Stage 1 and Stage 9 of the 'Interm swimming programme' (MSRC-R, 1995). More concerning is that the analysis suggests that only 34% of students exiting primary school are deemed to possess competent swimming proficiencies.

With 80% of Interm swim parents (RLSS, 2001) believing that their child should reach Stage 9 of the programme and even more (96.5%) demanding that their child should have the skills to save another person, the swimming component of the secondary school physical education programme and the suggested outcomes need to be reconsidered. In contrast, parents have relatively minimal demands when defining what their child will need to achieve to be defined as a safe swimmer. That is, only 29% of the parents surveyed (RLSS, 2001) required their child to swim 100 metres or more to be classified as a safe swimmer. Other distances deemed appropriate to classify a child as a safe swimmer were 50 metres (23.5%), 25 metres (19%) and 15 metres (13.5%). These parent expectations concur with that suggested by EDWA Administrators (Shaw, G. personal correspondence, June 5, 2001); that what is a safe swimmer as defined by a parent, and one ready to exit the 'Interm swimming programme', is based around distances that correspond to the capacities required to handle the family backyard swimming pool. Irrespective, if these children are left struggling with inefficient and energy-consuming strokes, the joy of achieving their first lap may lead to a false sense of security (Dukes, 1986) and on to a tragedy – this could well be the most dangerous stage of their swimming life (Elkington, 1971).

Coping with varied swimming ability levels

Based on the assumption that physical education should promote maximum involvement amongst all pupils (Saunders, 1979; Arbogast & Lavay, 1987), it is possible that the low and high ability swimmers are not well catered for by the secondary school physical education programme. With varied ability levels described as one of the most difficult and frustrating situations facing the physical educator (Arbogast & Lavay, 1987), this also has important implications for students who consistently fail and for those who succeed too easily, both it appears lose their motivation to learn (Tomlinson, 1999; Rikard & Woods, 1993).

Swimming is more easily taught to children when they are very young, with the optimal age of readiness being defined as between 5 and 6 years of age (Blanksby, Parker, Bradley, & Ong 1995). Good instruction, which involves 'learning by doing' (Behets, 1997) at an early age, is fundamental to the quality of skill acquisition; the longer the delay, the longer it takes to learn the skill (MSRC-R, 1995). While swimming in physical education classes has been recognised to be a high-activity area (McLeish, Howe, & Jackson, 1981), it may be more important to focus on the quality of engagement (Hardy, 1993). With relatively large class sizes, students who possess a diversified range of sporting skills (Reeves & Stein, 1999), and prior sporting experiences and temperaments (Chambers, 1988), staff may resort to teaching for their own professional survival (Mustain, 1990) and teach, as a general rule, to the majority of the class (Hardy, 1991a). This is in contrast to those who suggest that weak swimmers require individualised programmes to overcome their fears (Hardy, 1991a). Moreover, we know that many weak swimmers are only exposed to a regular swimming experience through school and choose not go swimming in their own time (Hardy, 1991a) or to go to private lessons (RLSS, 2001). This is alarming, given that there was a steady decline (12.21%) in enrolments in the 'Western Australian Vacswim Programme' during the time-frame 1989 to 1994 (MSRC-R, 1995). It is therefore unlikely that weak swimmers, given the existing school physical education class format will raise their standards.

Varied abilities: Pedagogy

It is important that the physical educator assess the needs of a diverse student group and then use a variety of management and instructional strategies to meet the needs of these

learners (Hutchinson, 1995). A consideration of the literature focussing on curriculum and differentiation, peer teaching and streaming by ability level in physical education and swimming will illuminate several issues in these areas.

Curriculum and Differentiation

The 'continuum' approach as used by the 'EDWA Intern programme' has been described as more successful in a mass participation programme than the traditional generic and less specific curriculum (EDWA, 1995a). While discussing the inclusion of all students, Reeves and Stein (1999) and Mustain (1990) question that ineffective physical educators can force students to adapt to inappropriate expectations and therefore the students can become victims of a self-fulfilling prophecy. Furthermore, they suggest that without a developmentally appropriate pedagogy, which targets the level of each child in the programme, we are likely to inhibit meaningful movement experiences for all. Tomlinson (1999) aptly describes an individualised pedagogical approach as a 'differentiated classroom', where the struggling, advanced and in-between students are all valued equally. Three main approaches to differentiation have been identified as 'differentiation by task', 'differentiation by outcome' and 'differentiation by support' (Harrison, 1997). Furthermore, this list is not exclusive and they can work concurrently. While responding to the needs of all learners, such an approach demands that teachers do not reach for standardised, mass-produced instruction assumed to be a good fit for all students; rather, teachers are required to begin where students are at. The differentiated classroom also invites students to teach one another.

Peer Teaching

While even the most competent and organised physical educator cannot directly interact with each student in a class, more than one or two times (Block, 1995), it may be appropriate to train the high performance swimmers to assist with the teaching of swimming in secondary physical education classes. Such techniques involve the grouping of students who are at the ends of the ability spectrum, this being in contrast to the pairing of students who are of like ability as recommended for college-aged non-swimmers (Fleming, 1971). While no studies have been cited which evaluate the effectiveness of peer teaching in the non-integrated physical education aquatic setting; it has been claimed that peer tutoring enhances, for both the tutees and the tutors, motor performance (Barfield, Hannigan-Downs, & Lieberman, 1998; Lieberman, 1995; Arbogast & Lavay, 1987), cognitive comprehension, attitudes, and physical education learning time of those with differing abilities (Barfield, Hannigan-Downs, & Lieberman, 1998). By using mature individuals who are taught what components of a skill to look at, how to give feedback and how to collect ongoing data (Block, 1995), we may see skill improvement in those classified as weaker swimmers. Moreover, all students can benefit as they are exposed to opportunities to have peer instruction, provide leadership and empower a dynamic new relationship based on understanding and responsibility (Barfield, Hannigan-Downs, & Lieberman, 1998).

Streaming

Streaming according to ability level does occur in some schools; however, this requires several classes to be timetabled at the same time, and/or, additional staff and facilities. Techniques such as streaming have been criticized for labelling pupils and limiting the expectations of both pupils and teachers (Harrison, 1997). In addition remedial classes have been said to "keep remedial learners remedial" (Tomlinson, 1999, p.21) and that once labelled as "weak that they live up to that label" (Hardy, 1989, p.19). It has been suggested that teachers fail to recognise the mixed-ability within a streamed group, teaching all at the same pace, using the same style and directed toward a reference group in each class (Boaler, 1997).

In contrast, a consequence of streaming may be the presentation of smaller class sizes, particularly for the minority groups, and this has the potential to increase the time allocated to curriculum activity (Hastie & Saunders, 1991), allowing teachers to adapt their pace, style and content to the particular ability group, thereby enabling more whole-class teaching (Boaler, 1997). Chambers (1988) discusses the grouping of students based on a degree of homogeneity of skills in order to encourage participation, protect the student, and as supported by others (Pifer, 1987), enrich the teaching and learning experience.

Methodology

Seven secondary schools were presented with a questionnaire specifically requesting information relating to Year 8 aquatic activities and were completed by the Head of the Physical Education Department during May 2001. Three Independent schools, (one boys, one girls and one co-educational), two co-educational Government secondary schools and two co-educational Catholic secondary schools responded.

Five of the schools used the school pool for Year 8 classes (4 outdoor and 1 indoor), while two schools travelled fifteen to twenty minutes and used a public pool. Of the responding teachers, there were five male and two female, reporting a range of teaching service of 15 to 28 years. One questionnaire was completed over the phone while the remainder were delivered by hand or by mail.

The questionnaire consisted of 15 questions, which required approximately 30 or more minutes to complete. The information requested through the questionnaire included, common activities undertaken in Year 8 physical education aquatic activities, programme goals and objectives, assessment activities undertaken, the importance of swimming, perceived current Year 8 student swimming abilities, definitions of swimming abilities, issues of concern, strengths and weaknesses of the swimming programme and strategies to deal with varied ability levels.

Results

Curriculum goals and activities

While 'developing confidence and proficiency in the water', 'developing rescue and survival skills' and 'fun' are reported by the teachers to be the most important goals and objectives, respectively; 'stroke technique analysis/correction' (sample total = 1515 minutes) and 'life-saving activities and safety awareness' (sample total = 1020 minutes) were the most common activities undertaken. Teachers generally consider aquatics to be the most important component of the Year 8 Physical Education programme, and there is a strong consensus between these attitudes and that, as cited in literature, of parents, educators, and health and physical activity administrators (RLSS, 2001; MSRC-R, 1995; Pearn & Nixon, 1979; Barter, 1992; Hardy, 1991a; EDWA, 1995b).

At best this curriculum is commensurate with keeping the student body active; however, they unfortunately appear to be focussed toward the weak and moderate ability swimmer whilst ignoring the needs specific of the non-swimmer and strong swimmer. While this programme weakness is recognised by the teachers surveyed and in relevant literature (Hardy, 1991a; Mustain, 1990), it might be assumed that the physical educator is more concerned with professional survival, and the child's capacity to partake safely in a class of some twenty-five or more students operating in what is for some an area of personal/teaching deficiency and a less than favourable facility, that being a large and busy public swimming complex. Given the existing school physical education class format, individualised programmes allowing weak swimmers, who are generally reliant on school swimming lessons alone (Hardy,

1991a; RLSS, 2001), to overcome their fears and raise their standards are unlikely. Moreover, by focussing the lesson toward the middle ability group, those who succeed too easily will also lose their motivation to learn (Tomlinson, 1999; Rikard & Woods, 1993). While not directly assessed in this study, it is possible, as previously discussed (Pearn & Nixon, 1979; Page, 1974), that Western Australian students are not making swimming progress during Year 8 and indeed their secondary school years.

Swimming abilities

The Heads of Department used a broad range of criteria to define swimming ability levels. These included, Curriculum Framework Outcome Levels, student level of apprehension, technique proficiency, RLSS Level of Achievement Awards, potential to swim a required distance, time per lap (seconds), ability to perform butterfly, Interschool and club related swim squad membership.

Noteworthy of the definitions for the non-swimmer, the most demanding was cannot swim 50 metres of freestyle without stopping, with the least demanding being afraid/unwilling to enter the water. Weak swimmers were described as those who 'know what to do – but can't execute' and those who have 'difficulty in completing 25 metres of freestyle'. A more demanding definition referred to 'swimming 3x50 metres different strokes, poor technique, but no butterfly'.

Moderate swimmers were defined as 'can complete 50 metres in freestyle, backstroke and breaststroke'; to a more demanding requirement of swims '100 metres of freestyle, 100 metres of backstroke, 100 metres of breaststroke – with a 5 second rest after each lap, and in addition can swim 10 metres of butterfly'. With such a diverse range of teacher expectations as reported within this study, it raises the question of why isn't there a set of criteria defining the minimal aquatic proficiencies that are desirable and furthermore acceptable for a secondary school student? A comparison of the findings in the current study and that available in related literature (MSRC-R, 1995; Duke, 1996; RLSS, 2001; Hardy, 1998), confirms that in some secondary schools our teacher expectations, curriculum offered and ultimately our student knowledge/performance levels are falling short of what could be defined as appropriate standards of watermanship. Whilst not defined in any literature, after reviewing the findings of this paper and the cited research, the writer believes that a programme that provides the opportunity for students to achieve a swimming standard as defined by:

Curriculum Framework – Student Outcome level five, a

level eleven (RLSS Swim and Survive Certificate) of the

Western Australian Education Department Continuum for Calm Water, and

additional open water and surf experiences,

may appropriately define the minimum expectations for a Western Australian student entering the post-compulsory phase of their life. These expectations fall considerably short of the Year 10 expectation of a RLSS Bronze Medallion (Catholic Education Department, 2000). Such expectations are not without cost and teachers are already concerned that the existing time allocated to swimming and the facilities available are inhibiting programme development.

Within the teacher definitions and the numbers as determined by the current study participants, and that supplied by EDWA (Shaw. G. personal correspondence, June 5,

2001), we could expect more swimmers in this study to be categorised as 'moderate' and 'strong'. Moreover, this contradiction concurs with the data of previous work (MSRC-R, 1995), suggesting that Western Australian children are exiting primary school with lower swimming abilities than that reported by the Education Department.

When compared to the most demanding definitions within the pilot work, nearly a third (32.5%) of those deemed to be safe swimmers by parents, would be classified by teachers as non-swimmers in the Year 8 physical education programme. Alarming, these false parent impressions, perhaps built on the requirements to play in the family pool (Shaw. G. personal correspondence, June 5, 2001), may leave many young people, as previously identified (Dukes, 1986; Elkington, 1971), precariously placed at risk even in the most calm aquatic environment. In addition, the lack of exposure to open-water and the ocean surf through the physical education programme highlights a need for school curriculum and pedagogical reconsideration.

Issues of concern

While teachers have raised concern for a diverse range of issues including, teacher qualifications, legal liability, water temperature and travel time; it was 'staff/student ratios' and 'varied swimming ability levels' that were highlighted as the most concerning. While the issue of ratios (Cross, 1997; EDWA, 1995b) and varied ability levels (Arbogast & Lavay, 1987) are not new, they do present the physical educator charged with teaching an aquatics class with a difficult pedagogical challenge.

Pedagogy appropriate for – varied ability levels

In the absence of research which directly addresses the issue of dealing with varied ability levels in physical education aquatic classes, the writer believes that the following class management structures, streaming, peer teaching and the differentiated classroom, are worthy of discussion and possible inclusion.

When timetabling and staffing permit, four of the schools in this study used 'streaming' according to existing ability levels to determine the class composition. Whilst reviewed in literature as presenting with positive (Boaler, 1997; Hastie & Saunders, 1991; Pifer, 1987) and negative (Tomlinson, 1999; Hardy, 1989; Harrison, 1997; Boaler, 1997) outcomes, creating groups that are homogeneous for skill level will provide opportunity to create a programme more specific to the needs of the student.

Peer teaching, be it provided by the better swimmers or the injured/non-participant is used by four of the schools studied. Without any formal preparation, students were asked to coach, teach and encourage the relatively weak and non-swimmers of the class. With appropriate training (Block, 1995), the mature high performance swimmers could assist with the teaching of swimming, thereby providing considerable potential benefit to all concerned (Fleming, 1971; Barfield, Hannigan-Downs, & Lieberman, 1998; Liberman, 1995; Arbogast & Lavay, 1987; Block, 1995). Peer teaching provides an opportunity for the swimmers who are not well catered for by existing programmes to be actively involved in acquiring skills, knowledge and fostering new relationships.

In opposition to a mass-produced instruction focussing on the middle of the ability group, a pedagogy encompassing the principles of a 'differentiated classroom' (Tomlinson, 1999) requires teachers to value each individual for where they are at. In the physical education aquatic setting the teacher would be required to set programmes that target the specific needs of the client. When used in conjunction with a continuum approach as exemplified

by EDWA and the RLSS, and undertaken with the possible inclusion of additional staff or peer teaching, an effective and appropriate curriculum is a reality.

In the absence of evidence to confirm the most appropriate pedagogical approach for Year 8 or indeed any Secondary School Physical Education aquatic class, the writer believes that the above described techniques should be considered when planning the curriculum and lesson structure.

Conclusions

Physical education teachers value swimming programmes highly and see 'coping with varied swimming ability levels' as a major concern, second to the issue of 'staff/student ratios'. Schools devote the majority of their swimming class time to 'stroke technique analysis and correction'. In some secondary schools our teacher expectations, curriculum offered and ultimately our student knowledge/performance levels are falling short of what could be defined as appropriate. At best, much of the physical education curriculum offered is commensurate with keeping the student body active, whilst ignoring the needs specific of the non-swimmer and strong swimmer. A programme that defines the minimum expectations for a Western Australian student entering the post-compulsory phase of their life is required.

With students in physical education classes possessing a range of abilities, the following pedagogies; streaming, peer teaching and the differentiated classroom, are deemed worthy of further investigation.

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