

Teaching swimming in secondary schools: Is there a case for differentiation?

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AARE 2002 Conference Presentation

WHI02118

Abstract

A sample of Year 8 and Year 9 Health and Physical Education teachers (n=43) described the swimming programs offered and identified the planned outcomes, issues of concern and pedagogies employed. Physical educators see developing student confidence as the most important outcome. Staff/student ratios, staff qualifications, and coping with varied swimming ability levels are issues of concern. Teachers classified nearly half of the students who at best can swim 50 metres of freestyle. As a consequence of participating in HPE swimming teachers believed that more than half of the students improved a little and/or didn't improve much at all. The provision of different activities and groups, according to ability in one class, are most commonly employed by teachers to accommodate differing student ability levels.

Introduction

There is a community expectation that Australian children learn to swim and develop water competencies during their school years. Given the move away from traditional program offerings and the development of outcomes focussed education, it is of concern if pupils are not making swimming progress during the compulsory years of schooling. This paper presents a snapshot of health and physical education (HPE) swimming and water safety programs in West Australian secondary schools.

Taggart and Sharp (1997) warn that sport needs to "respond to key issues of inclusivity, meaning and enjoyment ... to impact positively on the social cohesion and health of our community" (p.1). Hunter (2000) further advances, suggesting that there is a requirement for greater curriculum relevance, negotiation and the multi-disciplinary integration of all members of the physical education class. Health and physical educators who can create opportunities for adolescents to connect in the physical setting in meaningful ways (Hunter, 2000) are to be encouraged. A deep understanding of what will function to elicit and develop these qualities in school aquatic activities is required.

Contemporary school physical education is seen by some as "irrelevant and boring for many adolescents" (Tinning & Fitzclarence, 1992, p. 45) and is typified by teacher control, student passivity, drill and practice and so is potentially miseducative (Taggart, 1992). More recent work would suggest that the status quo remains, with Carlson (1995) reporting that "physical education does not fill a need in their (read adolescent) lives" (p. 474), and that physical education is failing to engage and make connection with students lives (Hunter, 2000).

Both in Australia and overseas historical and anecdotal evidence suggests that many pupils are not making swimming progress during the secondary school years (Page, 1974 [as cited in Hardy, 1991]; Pearn & Nixon, 1979; Langley & Silva, 1986; Hardy, 1991). With increasing fears of litigation (West Australian, July 13 2002) there is also concern that swimming programs may go the same way as school gymnastics, disappearing from the curriculum (Whipp, 2001).

Swimming has typically been seen as an important physical education activity as it affords the opportunity to save life and it provides a medium for developing health and fitness (Barter, 1992). Many students will not try swimming at all if they perceive that standards are unreachable (Kleinman, 1997) while others suggest that swimming in schools appears to have lost the fun element (Hardy, 1989). Given that aquatic education in some Australian primary schools has been reported to be in crisis (Cross, 1997) and it seems no agreement can be reached as to purpose of middle school physical education (Batesky, 1991), the content and context for swimming in HPE secondary school programs can be seen as problematic.

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 30% participate in the annual school holiday 'Vacswim Program' (EDWA, n.d., c). Clearly large numbers of children in Western Australia (WA) are impacted on by the Swimming and Water Safety Continuum.

Swimming programs and related support materials from Royal Life Saving Society Australia, Department of Education, WA Curriculum Framework (Curriculum Council, 1998) and the Outcomes and Standards in Physical Education and Sport (FME, 2000) have been used in developing outcomes for high school students engaged in HPE aquatic programs. These

agencies in providing the course framework, together with student outcome levels, provide a focus for the teaching and assessment of aquatic activities in physical education. Given this curricula guidance it is of concern that swimming in secondary schools may in reality not be well defined and implemented.

Current claims in Western Australia suggest that over 60% of primary school students are achieving a Stage 6 in the EDWA based 'Interm Swimming Program' (swim 50 metres freestyle, 25m backstroke, 25m breaststroke) (Shaw, G., personal communication, 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 (swim 300m: including 50m freestyle, 50m backstroke, 25m butterfly, and 175m survival strokes (EDWA, n.d., b) and as detailed in the Outcomes and Standards in PE and Sport (FME, 2000). Furthermore, 40% of primary school students are achieving Stage 9 of the 'Interm Swimming Program' (ISP) (Swim 300 metres with a variety of strokes) (Shaw, G., personal communication, June 5, 2001). There is little evidence of achievement levels in current secondary aquatic programs, further clouding the understanding of student swimming outcomes in secondary schools.

Coping with varied swimming ability levels

Many HPE teachers are faced with students in large heterogeneous classes with ability levels on the EDWA scale ranging from Stages 1-12 and beyond. Such circumstances have been described as one of the most difficult and frustrating situations encountered by the physical educator (Arbogast & Lavay, 1987). In addition, some students are reluctant participants. This scenario has important implications for students who consistently achieve at low levels and also for those who succeed too easily, both groups it appears lose their motivation to learn in such classes (Tomlinson, 1999a; Rikard & Woods, 1993).

With relatively large class sizes, teachers as a general rule may teach to the fictional average student, in contrast to those who suggest that weak swimmers require individualised programs to overcome their fears (Hardy, 1991). 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, 1991) or to go to private lessons (RLSSA, 2001). 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). While coping with varying ability levels presents a major pedagogical challenge to HPE teachers, consideration for individualisation and differentiation of instruction appears paramount.

HPE Curriculum and Differentiation

It is important that the HPE teacher 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). Furthermore, Reeves and Stein (1999) and Mustain (1990) suggest that without a developmentally appropriate pedagogy, which targets the level of each child in the program, we are likely to inhibit meaningful movement experiences for all. For Tomlinson (1995) differentiation has come to mean: "...consistently using a variety of instructional approaches to modify content, process, and/or products in response to learning readiness and interest of academically diverse students." (p. 80). Three main approaches to differentiation have been identified as differentiation by task, differentiation by outcome and differentiation by support (Harrison, 1997).

The goal of a differentiated classroom is maximum student growth and individual success, which is consistent with the defined goals of the Western Australian Curriculum Framework (Curriculum Council, 1998). Unlike many existing teaching strategies differentiated instruction is proactive, that is, assuming that different learners have different needs, delivering a variety of approaches is essential for quality teaching and learning. Practising quality differentiation is about knowing what matters to teach, realizing that learning happens in us rather than to us, making a conscious effort to continually reflecting on the 'individuality' of each of our students, and the singularities students bring as individuals (Tomlinson & Allan, 2000). More specifically "differentiation is not so much the 'stuff' as the 'how', ... however... if the 'stuff' is ill conceived, the 'how' is doomed" (Tomlinson, 1999b) (p. 16). The differentiated instructional model encourages the teacher to respond to the needs of all learners, beginning where students are at and appears to provide the direction for which physical education swimming classes can develop. This student-centred approach, aimed at the individual is potentially an important focus for the development of school physical education pedagogy and curriculum in swimming.

Streaming according to ability level does occur in some schools, however this requires several classes to be timetabled at the same time, additional staff and generous facilities. Techniques such as streaming have been criticized for labelling pupils and limiting the expectations of both pupils and teachers (Harrison, 1997) while remedial classes have been said to "keep remedial learners remedial" (Tomlinson, 1999a, p. 21) and that once labelled as "they live up to that label" (Hardy, 1989, p. 19). Even given this scenario 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 unidentifiable reference group in each class (Boaler, 1997).

In contrast, a consequence of streaming may be the presentation of smaller class sizes, particularly for the high and low skilled groups, which 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, enrich the teaching and learning experience (Pifer, 1987). Possibly, in combination with streaming for ability, the construct of differentiation offers a most appealing context for the delivery of PE swimming.

Methodology

Forty-three teachers of Year 8 and Year 9 swimming completed a 30-item questionnaire, during March/April 2002 (see Table 1). Of the teachers who responded to the questionnaire, 24 were male and 19 female. Twenty-five of teachers taught Year 8 swimming and 18 presented Year 9 swimming classes. School-based swimming pools were available to 25 teachers while 18 were required to use non-school based aquatic facilities. Twenty-nine of the sample taught in Government schools, while 14 taught in Independent schools. Thirty-eight of the schools were in the Perth metropolitan area, while 5 were located regionally. Twenty-three teachers reported physical education teaching experience levels beyond 10 years, while 11 reported less than 5 years, and 8 reported 5-10 years experience. Whilst classes ranged in student number from 12 to 37, a mean of 25.8 students per class was recorded for the combined Year 8/9.

The information requested through the questionnaire included, (1) program goals and objectives; (2) the most important content to teach; (3) weaknesses of the program; (4) perceived level of student enjoyment; (5) perceived level of student improvement; (6)

perceived ability levels and potential ability to save someone; (7) issues of concern, and (8) strategies to deal with varied ability levels.

Table 1. Summary of the Year 8/9 teachers.

Data base description	Government School			Independent School		
	Teachers			Teachers		
	Year 8	Year 9	Total	Year 8	Year 9	Total
Male	13	6	19	2	3	5
Female	5	5	10	5	4	9
School pool	11	9	20	2	3	5
No School pool	7	2	9	5	4	9

Results and discussion

Results are reported for the 8 areas of investigation.

(1) Program goals and objectives

Teachers reported to 'develop student confidence' as the most important goal/outcome of both Year 8 (number one rankings=13; 54.2%) and Year 9 (number one rankings=5; 26.3%) PE swimming (see Table 2). To develop rescue skills, despite receiving 3 number one rankings from the Year 9 teachers (15.8%); improve fitness and improve race times were ranked 6, 7 and 8, respectively, for both Year 8 and Year 9 teacher groups.

Table 2. Program goals and outcomes - Year 8 and Year 9 teachers.

Goals/Outcomes	Year 8 Teachers		Year 9 Teachers	
	Rank	Mean	Rank	Mean
Develop confidence	1	2.29	1	2.93
Safer water participant	2	2.90	3	3.65
Develop survival skills	3	3.32	4	3.72

Develop stroke proficiency F/S,BR/S,BA/S,FLY	4	3.65	2	3.44
Have fun	5	3.86	5	3.83
Develop rescue skills	6	4.71	6	4.40
Improve fitness	7	5.50	7	4.74
Improve race times	8	6.39	8	7.50

(2) The most important content to teach

In line with the most important goal/outcome, confidence activities (number one rankings=13; 52%) and survival skills (number one rankings=3; 12%) are reported by teachers to be the most important content to teach in Year 8 PE swimming (see Table 3). In contrast, Year 9 teachers reported survival skills (number one rankings=6; 33.3%) to be the most important. This is inconsistent with a ranking of 4 allocated in the Year 9 PE swimming goals/outcomes (see Table 2). Moreover, when teachers were asked if they were able to present the desired content, 23.3% (n=10) of teachers reported 'no'. Structural factors (57.1%) such as large class sizes (n=3), limited time (n=2), pool space (n=2), and venue restrictions (n=1) were listed as the inhibiting forces. Others suggested curriculum related issues (n=5) and the pre-existing student skill levels (n=3) as major preventatives in delivering the most important content. Irrespective, as Tomlinson (1999b) suggests if the content is inappropriately matched to student needs, it is unlikely that the students will experience quality learning opportunities.

Table 3. The most important content to teach in swimming - Year 8/9 teachers.

Most important content	Year 8 Teachers		Year 9 Teachers	
	Rank	Mean Rank	Rank	Mean Rank
Confidence activities	1	2.65	3	3.50
Survival skills	2	2.83	1	2.18
Stroke proficiency F/S,BR/S,BA/S,FLY	3	3.04	2	2.71
Safety activities	4	3.14	4	3.77

Rescue skills	5	4.73	5	4.13
Fun activities	6	5.00	7	5.69
Fitness activities	7	5.68	6	5.06
Race techniques	8	7.53	8	6.71

(3) Program weaknesses

In describing the weaknesses of the PE swimming program, teachers of Year 8/9 listed class numbers and issues related to space (rank 1; n=12), time (rank=3; n=11), and varied student swimming ability levels (rank=4; n=9). Inappropriate or insufficient course content was listed by 8 teachers (rank=5) as a weakness of the swimming program. Teachers are consistent in their confirmation that structural factors such as class size, space and time are significantly restricting the program offered.

(4) Level of student enjoyment

Whilst evaluating the level of enjoyment in swimming classes, we could expect the data to reflect a relatively low level (Hardy, 1989; Tinning & Fitzclarence, 1992; Carlson, 1995; Hunter, 2000). However in this study, the highest percentage of the teacher allocations for the boys (39.3%) and girls (47.2%) who enjoyed swimming classes was for the spread of 60-79% of students who enjoyed (see Table 4). While male students appear to enjoy PE swimming more than girls, teachers are convinced that PE swimming is, for the majority, an enjoyable experience.

Table 4. Teachers' perception of student enjoyment of swimming classes.

Students	Percentage of students who enjoyed swimming classes				
	100-80%	79-60%	59-40%	39-20%	20% or less
	%	%	%	%	%
Year 8/9	21.3	43.3	25.0	9.1	1.4
Year 8/9 Girls	13.9	47.2	25.0	11.1	2.8
Year 8/9 Boys	28.6	39.3	25.0	7.1	0

(5) Level of student improvement

More than half of girls (55.4%) and boys (59.4%) in Year 8/9 were seen by the teachers to have improved a little and/or didn't improve much at all (see Table 5). This

compared with moderate improvements for 27.0% of girls and 21.1% of boys, and even lower percentages reported for improving a lot (girls 17.4%; boys 18.1%). Whilst alarming, confirmation of a general lack of swimming progress during the secondary school years is consistent with previous work (Page, 1974 [as cited in Hardy, 1991]; Pearn & Nixon, 1979; Langley & Silva, 1986; Hardy, 1991; Whipp, 2001). Furthermore, the majority of teachers (55.8%; n=24) believed that they did not consistently cater for all of the students in the class. Of these teachers, when asked what would need to happen for them to respond in the affirmative, 13 (54.2%) reported smaller class sizes/additional staff. Other changes deemed necessary, included streaming (n=7), catering for all ability levels (n=4) and venue modifications (n=3).

Table 5. Teachers' perception of student improvement from swimming classes.

Students	Degree of student improvement		
	A lot	Moderate	A little/didn't improve much
	%	%	%
Year 8/9	17.8	24.1	57.4
Year 8/9 Girls	17.4	27.0	55.4
Year 8/9 Boys	18.1	21.1	59.4

(6) Swimming ability levels and related ability to save someone

Of the Year 8/9 swimmers, nearly half (M=44.6%) at best can swim 50 metres of freestyle. It is concerning is that these swimmers do not meet the requirements that define a competent swimmer (MSRC-R, 1995). According to the teachers, students who can swim at least 25 metres of freestyle is lower for those in Year 8 (85.2%), when compared to students in Year 9 (89.8%). Teachers of Year 8/9 report there to be on average 18.4% who can continuously swim 400 metres (including 100 metres of freestyle), and 25 metres of butterfly (see Table 6). With the secondary school HPE intervention, and given the abilities reported for primary school Intern swimmers (Shaw, G., personal communication, June 5, 2001), we may have expected a higher number of students to be able to achieve at this level. This evidence may support the lack of movement along the educational continuum during the secondary school swimming years.

Table 6. Teachers' perceptions of Year 8/9 student swimming abilities.

Yr 8/9	Yr 8/9
Mean %	Range %

Category A. They normally

cannot swim in the water without being supported.

Category B. At best they can

glide or float on your front and back.

kick and recover to standing in waist deep water.

Category C. At best they can

swim 10 metres freestyle.

swim 10 metres of backstroke.

swim 10 metres of survival/lifesaving backstroke.

Category D. At best they can

swim 25-50 metres of freestyle.

swim 15 metres of breaststroke with the correct kick.

**swim 15 metres in at least 2 other strokes (survival
strokes are fine).**

dive entry.

Category E. At best they can

**swim 200 metres including 50 metres
freestyle;**

**50 metres backstroke and 100 metres
in 3**

survival strokes.

With your head in the water.

Category F. Can swim at least

**400 metres including 100 metres
freestyle;**

**100 metres breaststroke and 200
metres in 2 survival**

strokes.

25 metres of butterfly.

Teachers perceive that girls possess a lower ability to save someone in an aquatic environment, when compared to boys (see Table 7). On average, teachers believed that 59.3% of boys and 53.6% of girls possessed the ability to save someone in a backyard pool. These ratings were higher than the mean of 46.2% and 42.3% reported for boys and girls respectively, to save someone in a 50 metre pool. Consistent with the trend of a more open environment and a declining percentage of students, 19.3% of boys and 15.3% of girls were seen to have the ability to save someone in the ocean/surf. Interestingly for the three aquatic environments described, Year 8 teachers believed that their students had a higher ability to save someone, when compared to that reported for Year 9 students.

Table 7. Teachers' perception of the student's ability to save someone.

Girls	Back yard pool		50 metre pool		Ocean/surf	
	Mean %	Range %	Mean %	Range %	Mean %	Range %
Year 8/9	53.56	5-95	42.28	2-95	15.32	0-56
Year 8	61.33	5-95	47.83	2-90	17.50	0-56
Year 9	43.57	5-95	35.14	2-95	12.31	0-25
Boys	Back yard pool		50 metre pool		Ocean/surf	
	Mean %	Range %	Mean %	Range %	Mean %	Range %
Year 8/9	59.30	5-95	46.22	2-90	19.30	0-56
Year 8	64.94	5-100	51.44	2-90	20.63	0-56
Year 9	51.09	5-100	38.64	2-80	17.36	0-40

(7) Issues of concern

In line with previous work (Cross, 1997; EDWA, 1995; Whipp, 2001) staff/student ratios, was identified as the most important issue related to the teaching of swimming in Year 8/9 HPE (n=8) (see Table 8). Of note is that more individual teachers elected to rank staff qualifications (n=11) and varied ability levels (n=10) as the most important issue; however, these ranked overall by their mean as 2nd and 3rd, respectively. Consideration of the frequency of the 'very important' teacher ratings given to staff student ratios (n=37; 90.2%), staff qualifications (n=32; 78%) and varied ability levels in the one class (n=26; 63.4%) confirms the overall ranking of these three issues. Furthermore, pool space was allocated a 'very important' rating by 61.5% (n=24) of the teachers, while 23 teachers (57.5%) rated legal liability as a very important issue. Given that teachers confirm that they do not cater for all of the students in the class

(see Results and Discussion Section 5) and that class numbers and varied ability levels impact significantly (see Results and Discussion Section 3, and Table 8), school swimming outcomes must be reconsidered.

Table 8. Teacher ranking/rating of the issues associated with Year 8/9 swimming classes.

Issues	M	R	Rating					
			Very Important Fr %		Important Fr %		Unimportant Fr %	
Staff student ratios	2.4	1	37	90.2	4	9.8		
Staff Qualifications	3.2	2	32	78.0	9	22.0		
Varied ability levels in the one class	3.3	3	26	63.4	15	36.6		
Pool space	4.0	4	24	61.5	15	38.5		
Legal liability	4.2	5	23	57.5	16	40.0	1	2.5
Temperature of the water	6.1	6	10	25.0	19	47.5	11	27.5
Travel time	6.4	7	5	15.2	17	51.5	11	33.3
Cost of the programme	6.7	8	2	6.1	21	63.6	10	30.3
Issues related to ethnicity	7.2	9	3	7.9	17	44.7	18	47.4

M=Mean. R=Rank. Fr=Frequency this rating was chosen.

(7) Strategies to deal with varied ability groups

Amongst 17 categories of coded suggestions, the provision of different activities (n=17) and small group stations (n=16) are the most common methods reported by teachers to deal with varied student swimming abilities (see Table 9). In addition, peer teaching (n=8) and the use of floatation aids for non-swimmers (n=6) were used. Streaming for ability, student choice, and the use of the deep/shallow end of the pool were listed by 4 of the teachers. While mixed ability groupings (Arbogast & Lavay, 1987) combined with large class sizes (Cross, 1997; EDWA, 1995) are not new (Whipp, 2001), it is likely that teachers, despite considerable curricula guidance, are not pedagogically prepared to meet the needs of all.

Table 9. Strategies to deal with varied ability levels.

Coded responses.	Fr
Different activities.	17
Groups - according to ability in one class. Small group work.	16
Peer teaching.	8
Floatation aids (kickboards, noodles etc) for non-swimmers	6
Streaming for ability (classes).	4
Student choice of the programme/level undertaken - student centred.	4
Use of deep/shallow end.	4
Weaker swimmers closer to the edge/shore.	3
Individualised teaching - 1on 1.	3
Monitor progress, provide varied feedback, peer demonstration.	3
Set realistic goals.	2
Task cards.	2
Other.	5

Fr=Frequency this coded response was listed.

Conclusions

HPE teachers classify 45% of the students who at best can swim 50 metres of freestyle and see structural issues related to class numbers, space, time and more specifically 'staff/student ratios' impacting significantly on the delivery of swimming. In addition 'staff qualifications and 'coping with varied swimming ability levels' are of major concern. Teachers reported to 'develop student confidence' as the most important goal/outcome of both Year 8 and Year 9 swimming. As a consequence of participating in HPE swimming more than 57% of students were seen by the teachers to have made a little or no improvement; while on average, teachers believed that 60-79% of the students enjoyed the experience. More than half of the teachers confirmed that they did not cater for all of the students in their class. The provision of different activities and groups - according to ability in the one class, are most commonly

employed to accommodate those with differing ability levels. The provision of enjoyable, life-skill activities is a challenge in itself, but to provide them in a manner which matches the learning needs of each individual appears to be in advance of the current reality.

Based on the identified issues, the majority of secondary school swimming programs find it difficult to meet the needs of the students. With students in swimming classes too large in number, and possessing a broad range of abilities, streaming is seen as a legitimate strategy to improve the outcomes. Moreover, the inclusion of the pedagogical principles that define the differentiated classroom are important - if not essential.

References

- Arbogast, G., & Lavay, B. (1987). Combining students with differing ability levels in games and sports. *Physical Educator*, 44 (1), 255-60.
- Barter, T. (1992). Effective use of secondary school swimming pools. *Swimming Times*, 69 (1), 17-19.
- Batesky, J. (1991). Middle school physical education curriculum: Exposure or in-depth instruction? *Middle School Journal*, 22 (3), 7-11.
- Boaler, J. (1997). Settings, streaming and mixed ability teaching, In J. Dillon, & M. Maguire (Eds.), *Becoming a teacher: Issues in secondary teaching*. Philadelphia: Open University Press.
- Carlson, T. (1995). We hate gym: Student alienation from physical education. *Journal of Teaching in Physical Education*, 14 (4), 467-477.
- Chambers, R. (1988). Legal and practical issues for grouping students in physical education classes. *Physical Educator*, 45 (4), 180-86.
- Coroner puts pool onus on teachers. (2002, July 13). *The West Australian*, p.5.
- Cross, D. (1997, January). Aquatic education in schools: surveying the facts. In 'Active Connections, Melbourne 1996: the 20th Biennial National/International ACHPER Conference proceedings' pages 53-57. Hindmarsh SA: Australian Council for Health, Physical Education and Recreation (ACHPER).
- Curriculum Council. (1998). *Curriculum Framework for kindergarten to year 12 education in Western Australia*. Perth: Author.
- Dukes, W. (1986). Realism and teaching water safety. *New Zealand Journal of Health, Physical Education and Recreation*, 19 (1), 4-9.
- Education Department of Western Australia. (1995, December). *Surveys conducted in conjunction with the 1995 Vacation Swimming Classes*. Perth: Education Department of Western Australia.

Education Department of Western Australia. (n.d., a). *Swimming and Water Safety Continuum*. Perth: Education Department of Western Australia.

Education Department of Western Australia. (n.d., b). *Links to the Health and Physical Education Student Learning Outcomes*. Perth: Education Department of Western Australia.

Education Department of Western Australia. (n.d., c). *Interm Swimming*. Perth: Education Department of Western Australia.

Elkington, H. J. (1971). Focus: Swimming is fun. *British Journal of Physical Education*, May (2), 34-37.

Future Movement Education. (2000). *Outcomes and standards in physical education and sport*. Hillarys; Western Australia: Author

Hardy, C. (1989). A study of children who remain in the deep end of the pool during swimming lessons. *Swimming Times*, LXVI (1), 17-19.

Hardy, C. (1991). A study of twenty-nine 5th year secondary school pupils who are weak swimmers. *Bulletin of Physical Education*, 27 (3), 34-36.

Harrison, C. (1997). Differentiation in theory and practice. In J. Dillon, & M. Maguire (Eds.), *Becoming a teacher: Issues in secondary teaching*. Philadelphia: Open University Press.

Hastie, P., & Saunders J. (1991). Effects of class size and equipment availability on student involvement in physical education. *Journal of Experimental Education*, 59 (3), 212-24.

Hunter, L. (2000). Health and physical education in middle schooling: Implications and possibilities. *ACHPER Healthy Lifestyle Journal*, 47 (3-4), 21-24.

Hutchinson, G. E. (1995). Gender-fair teaching in physical education. *Journal of Physical Education, Recreation and Dance*, 66 (1), 42-47.

Kleinman, I. (1997). Grading: A powerful teaching tool. *Journal of Physical Education, Recreation and Dance*, 68 (5), 29-32.

Langley, J., & Silva, P. (1986). Swimming experiences and abilities of nine year olds. *British Journal of Sports Medicine*, 20 (1), 39-41.

Ministerial Swimming Review Committee. (1995). *Education policy and coordination bureau*. Perth, WA: Author.

Mustain, W. (1990). Are you the best teacher you can be? *Journal of Physical Education and Dance*, 61 (2), 69-73.

Pearn, J. & Nixon, J. (1979). Swimming ability of children: A survey of 4000 children in a high drowning region. *Medical Journal of Australia*, 2, 271-272.

Pifer, S. (1987). Secondary physical education: A new design. *Journal of Physical Education and Dance*, 58 (6), 50-51.

Reeves, L. & Stein, J. (1999). Developmentally appropriate pedagogy and inclusion: "Don't put the cart before the horse!". *Physical Educator*, 56(1), 2-7.

Rikard, G., & Woods, A. (1993). Curriculum and pedagogy in middle school physical education. *Middle School Journal*, 24 (4), 51-55.

Royal Life Saving Society Australia - WA. (2001). Swim and survive - Interm swimming. Personal Correspondence. 23 May.

Taggart, A. (1992, November). *Research in physical education: Useful knowledge to enhance the movement culture* (pp. 4-19). Keynote presentation in physical education at AARE/NZARE joint conference at Deakin university, Geelong.

Taggart, A. & Sharp, S. (1997). *Adolescents and sport: Determinants of current and future participation*. Perth: Ministry of Sport and Recreation.

Tinning, R. & Fitzclarence, L. (1992). Postmodern youth culture and the crisis in Australian secondary school physical education. *Quest*, 44 (3), 287-304.

Tomlinson, C. A. (1995). Deciding to differentiate instruction in middle school: One school's journey. *Gifted Child Quarterly*, 39 (2), 77-87.

Tomlinson, C. (1999a). *The differentiated classroom: Responding to the needs of all learners*. Alexandria, VA: Association for Supervision and Curriculum Development.

Tomlinson, C. A. (1999b). Mapping a route toward differentiated instruction. *Educational Leadership*, September, 12-16.

Tomlinson, C. A. & Allan, S.D. (2000). *Leadership for Differentiation: Schools and classrooms*. Alexandria, Virginia, Association for Supervision and Curriculum Development.

Whipp, P. (2001, December). Teaching swimming: Issues beyond drowning! In A. Taggart (Chair), *Collective and individual visions in netball, basketball, and swimming by/for adolescents*. Symposium conducted at the Australian Association for Research in Education Conference, Fremantle, Australia.

Authors Note

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