Ministry of Education

Curriculum Branch

Physical Education Curriculum Review Report

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November , 2001

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Executive Summary

BC's three Integrated Resource Packages for physical education were published in 1995, and fully implemented by 1997. Prior to the IRP, elementary physical education teachers used the 1972 curriculum and secondary teachers used a physical education curriculum published in 1985. All BC curricula undergoes a four-phase curriculum cycle to ensure the curriculum's currency and relevance through regular assessment and renewal. This Curriculum Status Report is part of this cycle, and presents the findings from the Phase 1 Review and Needs Assessment and the Phase 2 Analysis and Recommendations.

The aim of physical education is "to enable all learners to enhance their quality of life through active living." Similarly, the curriculum goal states that "through participation in physical education, students will develop the knowledge, skills, and attitudes necessary to incorporate physical activity into regular routines and leisure pursuits to live an active, healthy lifestyle." This research concludes that the learning outcomes effectively address this aim and goal, and the IRPs are regarded by many as one of the best provincial physical education curricula in Canada.

When surveyed, the majority of the teachers felt that the IRP adequately addresses the aim of "enhancing student's quality of life through active living."

- 90% felt that the organization of the content is excellent, very good or good
- 84% believed that the currency of information is good or better
- 86% rated the readability of the IRP's as good or better
- 93% agreed or agreed strongly that the Prescribed Learning Outcomes, Suggested Instructional Strategies and Suggested Assessment Strategies are grade appropriate

The Physical Education Provincial Specialist Association (PEPSA) feels that the IRPs are adequate. Many university physical education researchers feel that curriculum is very strong, stating that the BC framework is being copied by other provinces. The IRPs are sound documents that promote physical activity attitudes and skills. Therefore, this report recommends that the IRPs should not be re-written at this time.

The aim and goal of the curriculum are on target. Research shows that the active living habits and attitudes developed in physical education classrooms can have a lasting effect on the students throughout their lives. Longitudinal studies have shown that the quality and quantity of the physical education program effect the health and attitude towards activity once children have reached adulthood. Those who have active lifestyles as children and youth, most often have active and healthy lives as adults. The cost that society pays for inactivity and obesity is large. It is estimated that, including health care costs and productivity losses, obesity costs BC between $730 and $830 million per year.

However, research indicates that, despite a quality curriculum, its implementation is not meeting student needs. Although the new curriculum has been in use for more than five years, there is no evidence that it is resulting in increased in student performance. On the contrary, we know that:

- A significant number of students do not receive the recommended time allocation for physical education as stated in the IRP;

- A significant number of students are not taught entire movement categories containing numerous learning outcomes;
- Two-thirds of Canadian children and youth are not active enough to lay a solid foundation for future health and well-being;
- Only one fifth of youth accumulated the recommended seven hours a week of out of school sports or exercising; and
- One out of every four Canadian children are overweight, and that proportion has been increasing steadily over the last decade.

The reasons that student performance has not improved may include the following factors:

a) A lack of teacher and administrator priority is given to physical education.
All evidence indicates that in many schools physical education is a low priority. Other educational issues such as Aboriginal education, Safe Schools, FSA's, provincial exams, ICT integration, articulation and school growth plans take precedence over promoting physical education curriculum implementation. Physical education instruction is still used in many elementary schools as a reward for good behaviour or a punishment for bad behaviour.

b) A significant number of schools do not appear to be allocating the Ministry recommended 10% of instructional time to physical education.
An informal Ministry survey found that 74% of surveyed BC public elementary classes are not receiving the recommended 10% of instructional time allocated to physical education. For many students, the aim and goal of the curriculum cannot be met with less than the recommended percentage of instructional time. Out-of-school activity levels have dropped, hence elevating the health and fitness importance of the time spent in physical education classes.

c) Significant portions of the curriculum are not being taught.
Three of the five movement categories present unique instructional challenges which many teachers do not overcome. Gymnastics (a minimum of 15% of the instructional time) is often not being taught due to equipment and safety concerns. Dance (a minimum of 15% of instructional time) is valued by the majority of the physical education teachers, but implementation is hindered by a lack of resources, social awkwardness of students, and lack of teacher expertise. Many teachers are not able to meet the learning outcomes for the alternative environment activities movement category (a minimum of 15% of instructional time) because the cost of these activities does not fit within school and district funding priorities.

d) Facilities and equipment provide implementation challenges for some schools.
Most elementary schools use their gymnasium for multiple purposes aside from physical education, requiring that physical education classes accommodate assemblies, school productions, polling stations and a myriad of other activities. Some schools lack access to the equipment and facilities required for some of the movement categories.

e) Elementary generalist teacher expertise is a barrier to curriculum implementation.
In most schools and districts, generalist teachers are given the task of teaching physical education. There are few districts that support generalist teachers with a district level curriculum support person. With limited preparation time, specific training and district assistance, research has shown generalist teachers are not as effective at teaching physical education as are specialist teachers.

f) There is no provincial measurement tool to measure student achievement and to encourage curriculum implementation.

> Unlike reading, writing, numeracy and all provincially examinable Grade 12 subjects, there is no measurement of student achievement in physical education. The IRPs do not identify any student performance standards or benchmarks for student achievement.

The Physical Education IRPs identify sound curricula that can play a key role in reducing BC health care costs and improving student quality of life. They have the potential to shape student attitudes towards physical activity and lead to the entrenchment of healthy lifelong habits among children and youth. At present, however, there is no evidence that they are fulfilling this potential.

Recommendations

1) Develop or adopt provincial performance standards and benchmarks for physical education.

Background
In the United States there has been an effort over the past decade to develop national standards which define a physically educated person. Standards are described for each grade and include benchmarks and assessment examples.

Rationale
As explained in the New Era document, the focus of the education system is student achievement. Currently, we lack a clear definition of student achievement in physical education. Our current curricula do not define the end result of Learning Outcomes; they define only what students are to be able to accomplish in a class as a demonstration of acquired skills or knowledge. Since many of the goals of physical education involve changing students' behaviours to incorporate active living in everyday life, it would be advantageous to adopt performance standards and benchmarks.

2) Develop an assessment tool to measure student achievement in physical education.

Background
In 1979, *The British Columbia Assessment of Physical Education* examined a provincially representative sample of approximately 3000 public school students in Grades 3, 7 and 11. Many states and districts in the US have mandated fitness testing. Nova Scotia has just instituted a test that monitors student activity levels. Different jurisdictions are attempting to measure and report student achievement in physical education.

Rationale
It has been said that "you can't improve what you can't measure." Once defined, student achievement in relation to physical education performance standards and benchmarks must be measured and the results must be made public. An assessment tool would give the teacher a method of recognizing improvements in student achievement. This in turn would emphasize the need for schools to place a higher priority on implementing the curriculum and focusing on the physical health of students.

3) Conduct pilot projects in various school districts to develop practical and cost effective methods of increasing the measurable student achievement in physical education.

Background
The Ministry is moving to allow school boards more freedom in how they will promote student achievement. District Accountability Contracts are being written between the districts and the Ministry will articulate Ministry expectations while allowing districts greater autonomy in how they meet those expectations.

Rationale
Once student achievement is defined and measured for physical education, then it must be shown that a district leading full implementation of the physical education curriculum can improve student achievement. If this is shown to be true in a variety of districts, then improving student achievement in physical education can be included in district accountability contracts. This would encourage school districts to implement the curriculum.

4) Provide web-based curriculum implementation assistance.

Background
Over 60% of the Questionnaire respondents indicated that they use the internet to find learning resources. Respondents also asked that more resources be provided. The most frequently used resources were reported to be district developed implementation guides. Yet, many districts cannot afford to produce curriculum implementation guides. The vast majority of districts do not have district curriculum support personnel for physical education. The Ministry currently uses e-mail lists to support curriculum implementation (i.e. Career Memo).

Rationale
The Ministry of Education is perfectly placed to provide province-wide curriculum support by highlighting web-based resources and recent research. By hosting a physical education curriculum implementation website, the Ministry would be encouraging teachers to implement the curriculum. This would be a low cost method of supporting the curriculum.

Introduction

Why Is Physical Education Important For BC Students?

As our society becomes increasingly sedentary, there is an increasing need for excellence in physical education programming. Research (Ogden CL, Troiano RP, et al, 1994; Livingstone B, 2000; Wang Y, Ge K, Popkin BM, 2000) shows that activity levels of those living in industrialized nations are less and less active, and the health effects are increasingly obvious. Obesity rates are growing(Tremblay MS, Willms JD, 2000), health problems related to sedentary lifestyles are on the increase (Globe Media, 2001), and children are spending fewer hours in active play (CFLRI, 1999). The health care, productivity losses and obesity costs associated with inactivity are estimated to cost BC between $730 and $830 million per year (GPI Atlantic, 2000). Physical activity has been shown conclusively to contribute to a person's physical, psychological, intellectual and social well-being. Furthermore, longitudinal research has shown a direct link between adult physical activity rates and attitudes and quality physical education.

Physical education began early in the 1900's with a syllabus for Canadian schools being developed in 1911. In 1922, physical education became a compulsory subject in Western Canada. It is part of the curriculum for most jurisdictions throughout the world. Physical education is most often aimed at teaching students the attitudes, knowledge, skills and abilities required to live active and healthy lives. More than ever before, it is important to instill these attitudes and aptitudes in children and adolescents.

The aim of the Physical Education curriculum is "To enable all learners to enhance their quality of life through active living." The curriculum goal is "through participation in physical education, students will develop the knowledge, skills, and attitudes necessary to incorporate physical activity into regular routines and leisure pursuits to live an active, healthy lifestyle." To these ends, the K-10 curriculum is arranged into three curriculum organizers: Active Living, Movement, and Personal and Social Responsibility. The Movement organizer is divided into five movement categories: Alternative Environment Activities, Dance, Games, Gymnastics, and Individual and Dual Activities.

What Is Happening With The BC Physical Education Curriculum?

BC's Integrated Resource Packages for physical education were published in 1995, and implemented by 1997. Prior to the IRP, elementary physical education teachers used the 1972 curriculum and secondary teachers used a physical education curriculum published in 1985.

The BC physical education curricula took a major step forward with its revision in the mid 1990's. It is now considered by many to be one of the best provincial physical education curricula available, and is seen as a strong and flexible framework around which excellent programs can be developed. It is noteworthy that other provinces such as Alberta have revised their curriculum to resemble the BC framework.

Dr. Moira Luke, a professor emeritus at UBC, has done extensive study in the comparison of physical education curricula from various provinces, states and nations. Below are her opinions of the current IRP:

> The existing curriculum provides a sound and comprehensive framework for the teaching of physical education throughout all grades. It is well written and clearly structured and makes strong links between rationale, learning outcomes, instruction and assessment.
>
> The BC curriculum documents compare very favourably with those of the other provinces, and with the curriculum documents of countries such as Australia, the UK and the

United States. The BC documents have been used as a benchmark by other provinces who have developed new curriculum since 1995. For example, the majority of the Alberta physical education curriculum is based on the BC model. I know that my colleagues from other countries have also shown considerable interest and respect for the BC curriculum documents. They seem particularly impressed with the overall framework, the time allocation, the curriculum organizers and the wide range of activities.

What is the Curriculum Cycle?

All BC curricula undergo a four-phase curriculum cycle to review the Integrated Resource Packages with the intent of maintaining curriculum currency and relevance through regular assessment and renewal. This Status Report is part of Phase 2 of this cycle, and presents the findings from the Phase 1 Review and Needs Assessment. The recommendations indicate the action to be taken with regard to IRP renewal, ranging from making no changes to an IRP to undertaking immediate substantive revision.

The four phases of the curriculum cycle as they relate to physical education are described as follows:

Phase 1 Review and Needs Assessment

Is the BC curriculum still current, and is it meeting the needs of our students and teachers?

- Maintain a database of comments and input regarding the IRP and its implementation from various sources including letters, the Applied Skills Overview Team, and teacher and student comments;
- Maintain a database of current trends, programs, and curriculum from other jurisdictions;
- Administer a teacher survey polling educators with regard to their implementation of and comments about the curriculum (472 respondents);
- Conduct random telephone surveys of teachers from all grade levels (20 surveys);
- Conduct interviews with teachers, researchers and experts;
- Research the latest health and activity findings which effect school aged children and adolescents; and
- Maintain a database of physical activity advocacy groups.

Phase 2 Recommendations and Planning

Is the BC curriculum meeting its stated aim and goal? If not, why is it not fulfilling its aim and goal?

- Organize and analyze data from Phase 1;
- Identify areas of need;
- Prepare Status Report with recommendations for action; and
- Decision for curriculum revision or support.

Phase 3 Curriculum Development and/or Revisions

How can the BC Curriculum be revised or better implemented to meet its stated aim and goal?

- Develop a workplan to accommodate changes to IRP;
- Complete revision and/or development of IRP; and
- Develop implementation plan in conjunction with Field Services and other educational partners.

Phase 4 Implementation

Is the revised curriculum understood and implemented?

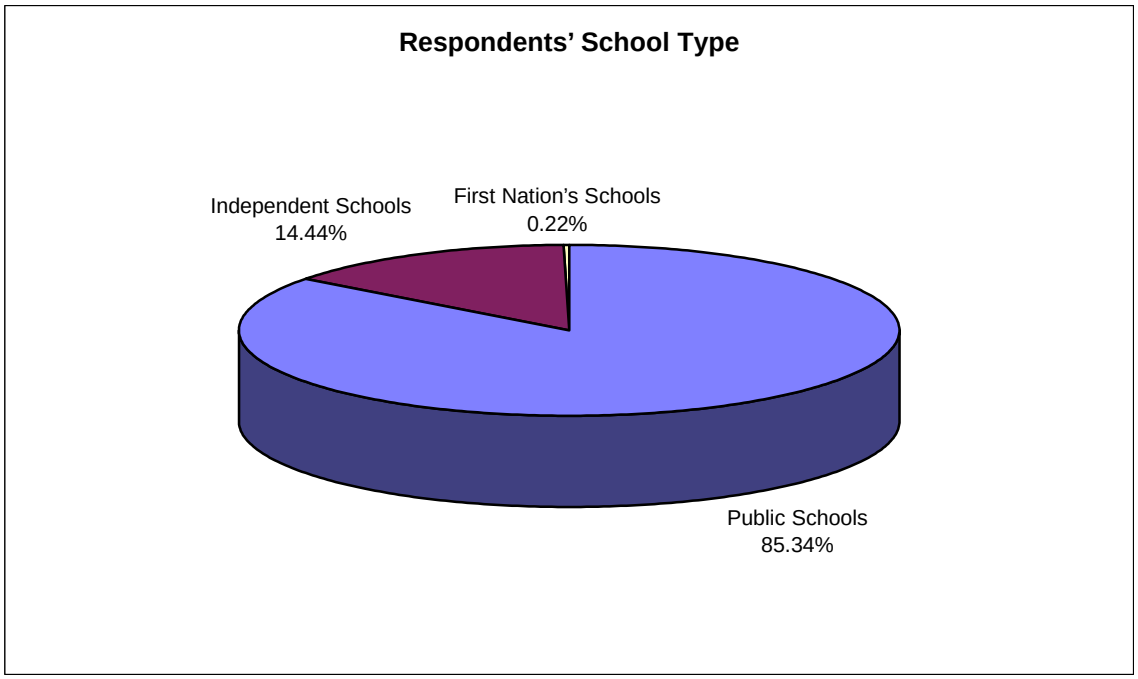
- Implement revised curriculum

METHODS

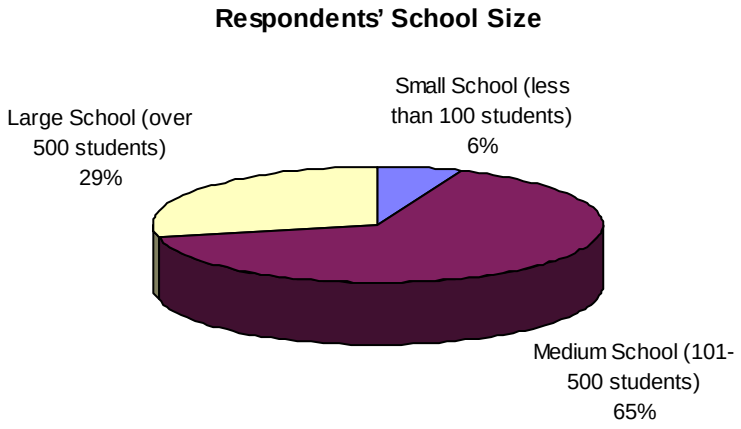
The findings in this Report were collected in Phase 1 of the curriculum cycle from the Curriculum Survey sent to physical education teachers in each school, a random telephone survey, a survey of recent health, physical education and activity research, and position statements from our major partners, stakeholders and advocacy groups.

Teacher Surveys
Teacher surveys were distributed in the 2000-2001 school year. There were 466 respondents, with responses from every school district. A complete listing of the distribution of responses is available in Appendix A.

The average respondent has been teaching for 13.9 years. The provincial average is 16.1 years of teaching. These teachers are distributed between public, independent schools and First Nation's Schools. The below graph shows the distribution:



The respondents were asked to give their perspective of how physical education is implemented in their school. Since the size of the respondent's school influences the school's capacity to implement the curriculum, the survey asked respondents to identify the size of their school.



The survey focused on how the responding teacher uses the IRPs, how useful they feel the various components are to their teaching, which curriculum organizers they felt should be changed, whether the content is seen as grade appropriate; if the suggested instructional strategies are useful; what resources are used and needed; how their physical education programs were shaped; how information technology and aboriginal education were used; what barriers exist to implementation; whether the curriculum adequately addresses the active living; and other comments. A copy of the survey is included in Appendix B.

Random Telephone Interviews
A random selection of schools were surveyed by telephone (total 20). The telephone interviews, conducted by the physical education curriculum coordinator, were more informal than the Curriculum Survey, and allowed teachers to elaborate on their teaching methods and physical education programs. Schools were selected randomly from *The Public and Independent Schools Book* (Ministry of Education, 2001) and assigned a specific grade level. The school receptionist was asked to direct the call to any teacher teaching that grade. The survey asked teachers how they implemented the curriculum on a daily and weekly basis. More detail about what actually occurs was gleaned from the interviews.

In order to determine the amount of physical education instruction that BC students receive, 138 telephone surveys were conducted. Public schools were chosen at random from *The Public and Independent Schools Book* (Ministry, 2001) and assigned a grade level. The receptionist was asked to connect the call to a teacher teaching that grade. The survey asked the respondents three questions: how many students are in your class; how many minutes of physical education have they received in the past two weeks; and is this the norm. The survey is accurate ±7.3% 19 times out of 20.

Research
The Phase 1 research was directed in four areas: recent scientific research supporting the need for activity; education research in physical education instruction; the physical education trends in other jurisdictions; and the positions of various partners, stakeholders and advocacy groups. This research was conducted with the help of the Ministry of Health, the Sport Branch (Ministry of Small Business, Tourism and Culture), and university professors from UVic and UBC.

FINDINGS AND ANALYSIS

Unlike the other IRP's, the physical education curriculum begins with a very succinct statement of the curriculum's aim and goal. The aim of physical education is:

"to enable all learners to enhance their quality of life through active living."

Similarly, the curriculum goal reads:

"through participation in physical education, students will develop the knowledge, skills, and attitudes necessary to incorporate physical activity into regular routines and leisure pursuits to live an active, healthy lifestyle."

The aim and goal of the curriculum are based on the Human and Social Development Goal of the BC school system. It states that one of the three goals of the BC school system includes developing "an understanding of the importance of physical health and well being."

This report found five major findings and 26 sub-findings. They are explained and analyzed below.

I) Our Curriculum Is One Of The Best Physical Education Curriculum In Canada And Addresses Its Stated Aim And Goal.

a) Respondents to the Teacher Curriculum Survey felt that the current IRP is effective, well organized, current, and useful.

Teachers were asked to rate the effectiveness of the IRPs as either excellent, very good, good, fair or poor. Of the 455 respondents, 89.8% felt that the organization of the content was excellent, very good or good. 84.3% believed that the currency of information was good or better. 86% rated the readability of the IRPs as good or better.

How Teachers Rate the Physical Education IRP

Elements of the IRP	Excellent	Very Good	Good	Fair	Poor
Organization of content	12.3%	40.4%	37.1%	7.7%	2.4%
Readability	12.3%	37.4%	36.3%	13.2%	0.9%
Ease of Use	10.1%	33.2%	36.3%	17.6%	2.9%
Currency of Information	6.2%	34.4%	43.7%	14.6%	1.1%
Design	11.1%	35.7%	40.1%	10.9%	2.2%

The Survey also asked teachers to rate the usefulness of the IRP as being either very useful, useful, somewhat useful or not useful. 77.9% indicated that the main body of the IRP was very useful or useful. Teachers indicated that the most useful part of the IRP was Appendix A (the listing of Learning Outcomes), with 81.2% of respondents stating that this section was either very useful or useful. The least useful part of the IRP, according to respondents, was Appendix C (Cross Curricular Outlines) with 31.4% indicating that is was very useful or useful and 18.8% stating that it was not useful.

How Teachers Rate the Usefulness of the Physical Education IRP

IRP Components	Very Useful	Useful	Somewhat Useful	Not Useful
Introduction	8.8%	51.2%	31.6%	8.4%
Main Body	23.7%	54.2%	19.9%	2.2%
Appendix A	36.8%	44.4%	17.3%	1.6%
Appendix B	9.6%	38.6%	40.6%	11.1%
Appendix C	2.7%	28.7%	49.8%	18.8%
Appendix D	9.6%	44.4%	39.3%	6.7%

Teachers were asked for their specific thoughts regarding the curriculum. 67.3% felt that the wording of the Learning Outcomes and Assessment Strategies is appropriate as is. 67.5% felt that the wording of the Instructional Strategies is appropriate as is. 86.8% of survey respondents agreed or strongly agreed that the suggested Instructional Strategies are useful. 85.6% agreed or strongly agreed that the Assessment Strategies are useful. 93.2% agreed or agreed strongly that

the LO's were grade appropriate, while 93.4% and 93.3% agreed or strongly agreed that the Instructional Strategies and Assessment Strategies respectively are grade appropriate. When asked which version of the IRP they used. 89% of respondents indicated they prefer to use the printed version, 6% the web version and 5% prefer the CD-ROM.

The Teacher Curriculum Survey asked teachers if they felt that the current curriculum "adequately addresses the aim of enhancing student's quality of life through active living." Of the 413 teachers who responded to this question, 73% felt that it did. Physical activity and active living are not only embedded in the aim and goal of the curriculum, but also fill a key place within the written curriculum. The IRPs introduction begins by stating that "the new physical education program emphasizes active living through participation in a balanced variety of movement experiences." Active Living is one of three curriculum organizers and, as such, is a foundation for many of the learning outcomes. The Movement Categories offer lots of flexibility for teachers wanting to encourage active living through a variety of activities.

b) The Physical Education Provincial Specialist Association (PEPSA) feels that the IRPs are adequate, but believe that there are slight improvements needed.

PEPSA, the professional organization for physical education within the British Columbia Teachers' Federation (BCTF) feels that the IRPs are adequate, but hold that there are certain improvements which could help educators implement the curriculum. They maintain that many of the LOs are vague and differ from grade to grade only by a few words. Although they admit that some teachers like this vagueness, feeling that it provides a great amount of flexibility, many teachers would like the PLO's to be more specific. They find that the Learning Outcomes in the Personal and Social Responsibility organizer are awkward, and the linkage to careers seems forced. PEPSA believes that the outcomes such as "Develop career and occupational opportunities related to physical activities" need to be re-written.

PEPSA feels that future revisions of the IRPs should consider an increased focus on health and wellness. They also feel that there is a lack of LOs that involve the integration of technology, advocating the inclusion of outcomes that would require the use of heart rate monitors or other exercise technology. PEPSA identifies assessment as an issue requiring greater focus. Marks should be justified through criteria, rating scales and checklists.

The Ministry recommends that elementary schools allocate 10% of instructional time towards Physical Education (142 minutes per week). It is felt by PEPSA and physical education experts that this amount of time is adequate.

c) University researchers who compare physical education curricula from other jurisdictions believe that the IRPs are among the strongest in Canada.

Professors from UVic and UBC have stated that they believe our curriculum is very strong. Moira Luke, professor emeritus at UBC, has specialized in comparing physical education curriculum from North America and the world. She states that

> the BC curriculum documents compare very favourably with those of the other provinces, and with the curriculum documents of countries such as Australia, the UK and the United States...my colleagues from other countries have also shown considerable interest and respect for the BC curriculum documents.

During a telephone interview, Sandra Gibbons (UVic) affirmed that in her professional opinion the BC IRPs supports good teachers and give solid guidelines. If imitation is the highest form of flattery, then the IRP has done well. Gibbons stated that "everyone else copied ours [curriculum]."

Analysis
The BC physical education IRPs are well written documents which provide a world-respected framework for teachers. There are small changes which would make the IRPs easier to use, but they are generally esteemed to be strong and helpful as is.

II) The Curriculum Goal And Aim Of BC's Physical Education Curriculum Are Worthwhile Objectives.

Most other provinces' physical education curricula contain similar goals and aims, focusing on active living and instilling in students the skills and attitudes required for lifelong physical activity. There are many sound reasons why the promotion of active living skills and attitudes lie at the core of physical education. Research continues to mount indicating the wide ranging benefits of physical activity and the enormous costs of inactivity. As more and more studies are released, the case for making active living a priority strengthens. Research abstracts are included in Appendix C.

a) There is compelling evidence supporting the physical benefits of physical activity.
The physical benefits of activity are numerous and varied. The Heart and Stroke Foundation reports that daily physical activity reduces the risk of heart diseases such as coronary heart disease. Studies (Morris, C.K., Froelicher, V.F., 1991) confirm the obvious; students who participate in daily aerobics programs have better cardiovascular fitness. Activity has also been shown to reduce the risk of developing diabetes (type II), colon cancer, breast cancer, lower back pain, hypertension, obesity, and osteoporosis. Research (Kratz, 1998) also shows that activity builds and maintains healthy bones, muscles and joints.

Medical researchers are observing a global rise in childhood asthma. JP Kemp and JA Kemp found a 160% rise in the number of asthma sufferers since 1980 among US children, while the Canadian Lung Association reports that one in five Canadians suffers from respiratory disease. Research by KH Carlson (2001) found that with proper medication, asthmatics could perform even at the highest level of international sports. S Oseid (1983) found that physical training, combined with medication, increased the aerobic work capacity, muscle strength and lung function in asthmatic children.

b) There are psychological and intellectual benefits linked to physical activity.
The age old saying "healthy body, healthy mind" has been substantiated. Physical activity has been shown to reduce stress, anxiety, boredom, depression and loneliness (CFLRI, 1997). Studies (Keays, J.J. and Allison, K.R., 1995) have reported that daily physical activity improves student performance and academic achievement. Active students have demonstrated better memory, observation, problem-solving and decision-making skills, and creativity. Students who participated in daily running programs achieved higher levels in reading, language and mathematics (CFLRI, 1995). Consistently, high grades and performance on cognitive measures are associated with high physical performance (CFLRI, 1995). Children who perform well on motor tasks have been shown to do well on academic tasks. Conversely, those lacking in early motor experiences have difficulty in learning as measured by achievement and intelligence tests (CFLRI, 1995). Research (Trudeau, F. et al., 1998) has shown that student academic performance does not suffer in schools who devote more time towards physical education.

Recent research (Brehm and Ianotta, 1998, Calfas and Taylor, 1994) shows that physically active female students experience improved body image, better weight control, increased bone density, lower stress/anxiety and reduced depressive symptoms.

New research published in the June issue of Pediatrics (Halterman, J., 2001) has linked even mild iron deficiency with low mathematics test scores. The study found that iron-deficient youth were more than twice as likely to score below average on standardized mathematics tests. The difference was the most dramatic in adolescent girls who are most often the cohort suffering from the highest levels of iron deficiency. German research (Schmid, A. et al, 1996) showed that

combining vitamin C and exercise could dramatically increase iron absorption. If Dr. Schmid's and Dr. Halterman's research is combined, simple dietary changes and increases in activity levels may be expected to improve student performance in math.

c) Children who are physically active gain social benefits.
Physical activity has been shown to provide positive role models, teach teamwork, leadership and social life skills. Active children have a higher sense of belonging and community. Activity has been linked with pro-social behaviour and a greater ease of making new friends. Active youth are found to be more comfortable speaking with members of the opposite sex, to have a higher number of evenings out with friends and to have a lower likelihood of feeling like an outsider.

Analysis
If the aim and goal of the physical education IRP are met, then BC students will enjoy greater physical health, academic performance, mental wellness, and socialization. The aim and the goal of the curriculum plays an important part in the fulfillment of the purpose statement of the BC school system. If the physical education curriculum meets it aim and goal, then learners will "develop their individual potential and acquire the knowledge, skills and attitudes needed to contribute to a healthy society and prosperous and sustainable economy."

d) Inactivity and obesity are rising throughout the developed world, which is costing individuals and societies heavily.

Two-thirds of Canadian children and youth are not active enough to lay a solid foundation for future health and well-being (CFLRI, 1995). This percentage is growing (CFLRI, 1995). The Canadian Medical Association reports (Lechky, 1994) that the prevalence of obesity has grown by more than 50% in Canadian children aged 6-11, and by 40% in those aged 12-17. One out of every four Canadian children is overweight and that proportion has been increasing steadily (Limbert, Crawford and McCargar, 1994).

There is growing amount of research that links activity levels to health and correlates disease with a sedentary lifestyle. As each year passes, there is more evidence (CFLRI, 1981,1988, 1995, 1997, 1998, 1999) that the decline in the activity levels and fitness of BC's children and youth is not only harming our children's health and academic success, but costing BC hundreds of millions of dollars per year (GPI Atlantic, 2000).

Global Media reported in 2001 that inactivity has been shown to cause or worsen these conditions: arthritis pain, allergies, arrhythmias, asthma, breast cancer, colon, cancer, congestive heart failure, depression, digestive problems, fibromyalgia, gallstone disease, headaches, high blood triglycerides, high blood cholesterol, hypertension, irritable bowel syndrome, low blood HDL, menopausal symptoms, myocardial ischemia, neck pain, sleep apnea, and type II diabetes.

Recently, the Globe and Mail ran a five-day series on obesity and the effects that it is having on the health of our nation. In the Monday, July 23rd editorial, the message of this series was articulated very succinctly.

> Obesity gets no respect. It is killing Canadians, and placing an increasingly crippling burden on our health-care system. Yet most of us, including government, do little more than shrug our fleshy shoulders.
>
> Consider the following facts from the Globe and Mail's Fat or Fit series....Just under 48 percent of Canadians have a body-mass index of 25 or more, meaning they are overweight. Almost 15 per cent have a BMI [Body Mass Index] exceeding 30, meaning they are obese. Only 20 percent of Canadians are considered active enough to benefit their health. This

> lethal combination of obesity and inactivity costs the Canadian economy an estimated $3.1 billion a year and kills 21,000 Canadians prematurely.

Unfortunately, this trend is not isolated to adults. Studies (Tremblay MS, Willms JD, 2000) have consistently shown that our children are getting fatter and that a major cause is inactivity.

These figures are not unique to BC or North America. Studies throughout Canada, the United States, Europe, China and many developing nations indicate that obesity is on the increase (Ogden CL, Troiano RP, et al, 1994; Livingstone B, 2000; Wang Y, Ge K, Popkin BM, 2000) . The decline of fitness and high levels of obesity among American children prompted President Clinton to issue an executive Memorandum in June of 2000 to identify and report within 90 days on "strategies to promote better health for our nation's youth through physical activity and fitness." The resulting report states that "physical inactivity has contributed to an unprecedented epidemic of childhood obesity that is currently plaguing the United States. The percentage of young people who are overweight has doubled since 1980."

Those who are severely overweight suffer an increased probability of heart disease, diabetes, hypertension, osteoarthritis, some cancers, and other illnesses. Studies (Sturm R, Wells KB , 2001) show that the obese tend to have more health problems than daily smokers or heavy drinkers. The GPI Atlantic estimates that 2000 BC residents die prematurely each year due to obesity related illnesses. They estimate that, including health care costs and productivity losses, obesity costs BC between $730 and $830 million per year. There remains no research on the social and intellectual price of inactivity in BC. As smoking decreases, it is expected that BC will pay a higher price for obesity related illnesses than it does for tobacco related costs (GPI Atlantic, 2000). Research on the costs of inactivity are included in Appendix D.

e) Parents recognize the importance of physical activity for their children.

Research (CFLRI, 1995) conducted with parents shows that the vast majority of parents perceived the benefits of encouraging physical activity among children and youth. A parent survey (n=+600) found that over 70% of parents strongly agreed that physical activity helps in the child's growth and development, builds self esteem and a positive self-image, helps build concentration and improves learning, and helps children learn to share and cooperate with others. Researchers in the United States (NASPE, 2000) found that 81% of parents with children in elementary, middle and high schools want their kids to receive daily physical education. These reports are included in Appendix E.

The 1979 British Columbia Assessment of Physical Education (Ministry of Education, 1979) polled 1,600 parents and asked them various questions on physical education. At the time, approximately 75% of those surveyed were willing to pay $10 per year in to school taxes to their child's physical education program. Considering inflation since 1979, that is the equivalent of $25.50 in 2000 dollars. A further 25% of parents indicated in 1979 that they would be willing to pay up to $50.00 per year ($127.49 in 2000 dollars). BC parents in 1979 valued physical education enough to be willing to pay an extra premium to support excellent programs.

Analysis

The studies showing the benefits of fitness and activity are numerous. Similarly, the costs of inactivity are well documented. With most children and youth enrolled in the school system, physical education programs are very well positioned to increase physical activity, influence attitudes towards activity, and educate students about active, healthy lifestyle choices. Although no one claims that active living or physical education are a panacea for all of education's social and learning challenges, research indicates that a more active school population would be healthier, incur lower health care expenses, be supported in reaching their intellectual potential, and have fewer social problems. Parents recognize the need that physical education fills and are wanting better and more frequent physical education for their children.

III) A Quality Physical Education Can Attain The Aim And Goal Of Enhancing Quality Of Life Through Active Living.

a) Physical activity habits as a child have a major influence on their health and quality of life.

Longitudinal studies have shown that the physical activity levels of children are correlated with their activity levels as adults. Simply put, those who have active lifestyles as children and youth, most often have active and healthy lives as adults.

- The health benefits of activity have been proven in active children. An early start to physical education seems to be the most desirable (Glutin, B, Basch C, et al., 1990). A key element of the curriculum goal is that students will develop the "attitudes necessary to incorporate physical activity into regular routines and leisure pursuits." In other words, it is hoped that students will develop lifelong habits. Behavioural studies by C. Bouchard and R.J. Shephard (1994, 2000) showed that a child's physical activity habits influence their intentions of being active as adults.

- Studies (Vanreusal, B. Et al. 1993) in Belgium showed that 59% of males who were active at 18 years old were still active at 35.

- A Finnish study (Raitakari, O.T. et al., 1994) interviewed youth about their activity levels during adolescence and early adult life. They tracked the subjects for six years, finding that for youth aged 15 to 21 or 18 to 24 years, 50% of those who indicated that they were originally active, persisted in this behaviour. Whereas, 55% of those classified as inactive remained inactive.

- An American study (Taylor et al., 1999) correlated regular physical activity in male subjects aged 32-60 with childhood and adolescent memories of exercise. Those who were active as adults perceived themselves as being more active than their peers as pre-teens and teens. Conversely, those whose recollections of childhood activity were those of being forced to participate in exercise were often less active as adults.

- A Swedish study (Glenmark , Hedberg, Jansson, 1994) found that adults (27 years old) were more active at leisure activities if they were fit at the age of 16.

- Physical activity has been linked to improved health habits, less or no smoking, improved physical skill development and increased self-esteem among female students (CFLRI, 1988).

- Research (Salliss, Hovell and Hofstetter, 1992; Trudeau et al, 1999) has found that females are less likely to be active as adults if they do not have a history of being active as children or youth

b) The quality and quantity of children's physical education programs effects their adult health and attitudes towards activity. This is especially true for females.

Longitudinal studies have shown that enhanced physical education can make lasting differences in activity levels. This has been shown to be more apparent with females. The value of daily physical education extends beyond the physical fitness of children to the long term effects on the lifestyle of adults.

A recently published paper, *A Long-Term Follow-Up of Participants in the Trois-Rivieres Semi-Longitudinal Study of Growth and Development* (Trudeau, F., L. Laurencelle, J. Tremblay, M. Rajic, and R.J. Shepherd, 1998) shows that quality daily physical education can make a long term difference. Between 1970 and 1977, an extensive study was conducted involving 546 primary school students in Trois-Rivieres. Half of the students received five hours a week of quality physical education taught by a qualified physical education teacher. They received this 'enriched' physical education for six years. The other half served as a control and received the standard 40

minutes a week. It was found that the experimental group was less active outside of school hours during the week, but was dramatically more active on weekends than the control group. The experimental group showed increased aerobic power, back extension force, abdominal muscle endurance, and other field performance indicators. The 14% reduction in classroom instruction time in academic subjects had no negative impact on academic performance. Standardized Provincial Grade 6 tests showed a slight improvement in mathematical and French scores versus the control group.

Between 1995 and 1997, the original participants were contacted and some interesting results were found. Participants were asked if they exercised or laboured strenuously three or more times a week. Results showed that the women from the experimental group were significantly more active than those in the control group.

Group	Yes (3 or more/wk)	No	Do Not Exercise
Experimental			
Men and Women	46.9%	4.8%	48.3%
Men	52.1%	8.5%	39.4%
Women	42.1%	1.3%	56.6%
Control			
Men and Women	37.7%	12.3%	50.0%
Men	50.0%	11.5%	38.5%
Women	25.9%	13.0%	61.1%

When asked to compare their activity level to those at their work site who are of a similar age/gender, the experimental group reported more frequently that they were more active.

Group	More Active	About the Same	Less Active	Does Not Apply
Experimental				
Men and Women	53.0%	26.5%	14.9%	4.8%
Men	53.5%	23.9%	19.7%	2.8%
Women	52.6%	28.9%	10.5%	6.6%
Control				
Men and Women	38.7%	33.0%	22.5%	5.7%
Men	42.3%	28.8%	23.1%	5.8%
Women	35.2%	37.0%	22.2%	5.6%

It has been suggested that self-perceived health is an excellent health indicator. The women in the experimental group reported a significantly better self-perceived health (19.7% excellent, 50% very good) than did those in the control group (11.1% excellent, 38.9% very good). The study also showed a trend towards regular smoking among the experimental group (19.8% vs. 26.9%).

Years later, the experimental group still had favourable impressions of their physical education program. 76.8% could remember the name of their physical education teacher and 71.4% remembered that they had received five classes per week. The experimental group expressed a much higher feeling of satisfaction with their physical education. 38.9% expressed that they were very satisfied with their physical education program, compared to 12.2% for the control group.

A number of the original subjects were given some health tests 20 years after the experiment. The experimental group showed significantly better results: resting heart rate (men only, 71.1 vs. 76.9 bpm), the Flamingo balance test (2.0 and 3.4 attempts vs 5.5 and 5.3 attempts in men and women) and HDL cholesterol readings (1.37 vs. 1.26 mM, men only).

Stanford University School of Medicine researcher, Caroline Schooler (1995), has found that comprehensive, school-based intervention can influence knowledge, attitudes, and behaviours of

young people. The likelihood of student behaviour change was heightened when parental education and motivation were also added.

Analysis
Research indicates that physical education can have an impact on the lives of students both in terms of immediate health benefits and the development of lasting positive attitudes towards physical activity and health. As a result, one way of making the society more active is to begin with ensuring that children have positive experiences in physical education. This investment will, over time, benefit the lives of the participants and reduce health care costs.

c) Many jurisdictions enhance their physical education program with arms-length promotional programs that encourage physical activity and other curricular outcomes. With these programs, the impact and effectiveness of physical education is increased.
The goal of the Ever Active School (Alberta) school-based program is to help schools promote the benefits of a healthy, active lifestyle. It encourages initiatives that effect the entire school population. The program aims to create a school environment that is supportive and encouraging of active living. Registered schools receive a one day workshop, resources and individualized consultations. The program has been piloted this past school year and is due for full implementation during the 2001-02 school year. Further information is included in Appendix F.

Active Schools (Ontario) is a comprehensive plan to increase physical activity levels among children and youth using school-based programs. It aims to support schools attempting to implement activity programs. It connects a variety of initiatives that support physical activity in schools. Included in these are:

- HPE (Health and Physical Education) Curriculum Implementation Plan which supplies support services and resources to educators to assist them in implementing the curriculum.
- RSG (Ready-Set-Go) is an interactive web site supplying sport information to students and parents.
- ACTIV8 is a free curriculum-based (K-12) physical activity program for students who are less active. It is design to help less active young people develop a positive attitude towards physical activity.

Further information is available in Appendix G.

Sport England manages Active Schools (UK) to involve more young people in sports. Funded with revenue from a national sports lottery, the program aims to encourage activity among school-aged children. A key element of the program is the Activemark/Activemark Gold (primary schools) and Sportsmark/Sportsmark Gold (secondary schools) awards. These two national accreditation schemes recognize schools committed to providing quality physical education and sports. Schools intending to apply are given a free resource pack which includes practical ideas for lessons and activity promotion. Schools applying for the awards are also eligible to attend specific workshops.

Active Schools also provides support, training and resources for teachers. Over 35,000 teachers have attended Active Schools-sponsored courses to enable them to better teach physical education, active living and sports. Awards For All offers one time grants between £500 and £5,000 to help schools develop links with local sport clubs that enhance extracurricular sports.

'Life. Be in it.' is an Australian multi media social marketing campaign aimed at encouraging active and healthy living. It began on a national level in 1977, and has endured various levels of government funding cuts as Australia re-allocated their spending priorities prior to the Sydney Olympics. It operates various programs, but also serves to promote other organizations that encourage physical activity and sport. The overall emphasis in their programs is active fun and the cartoon mascots have become recognizable to most (i.e. Norm the lazy and obese beer guzzling Aussie male).

The strength of the 'Life. Be in it.' campaign is that it gives a context for other programs. It is unique in that it does not promote itself, its certifications or awards. It promotes activity as a way of life and directs people to many of the other programs available to schools and communities. It effectively uses all of the key social marketing techniques, and could be seen as a model of how to promote activity to an entire population. More information is included in Appendix H.

Sportsearch is an interactive computer program developed in Australia that helps students find a sport that matches their physical attributes and interests. The student fills in a simple computer survey and the program identifies an individual list of sports through which the student might be expected to excel. It is currently used in Australian and British schools to enhance the probability that a young person will find an activity at which they can experience success. The Sport Branch has announced that they will soon have the program available for use in BC schools.

Go For Green is a national organization that encourages Canadians to pursue outdoor physical activity. They promote active transportation, trail use and trail building. The Go For Green Awards Program recognizes communities, schools and workplaces for their achievements in active living and environmental stewardship. The award program includes a $1,000 bursary and a plaque. They also sponsor the International Walk to School Day. This past year, 846 Canadian schools participated and 49 BC schools reported over 75% participation.

Much of their school efforts are aimed towards encouraging walking or biking to schools. This includes the International Walk to School Day and its accompanying award program, the Walking School Bus program, the promotion of central school bus drop off and pick up points that require some walking, the promotion of a no-idle zone around schools and Active and Safe Routes to School programs. Go For Green is a strong proponents of active living.

Analysis
Physical education has been proven to make real and lasting differences in the health of students. These positive impacts are heightened by the curriculum support given by arms-length promotional programs. They provide teachers and students the motivation to pursue physical activity and provide a context for increases in exercise.

IV) Our Students Are Not Meeting The Aim And Goal Of The Curriculum.

a) Current levels of activity among BC children and youth are not sufficiently high for healthy growth and development.
All Canadian provinces require that elementary school children take Physical Education and the overarching curricular goal of most provincial curriculum focuses on increasing physical activity and laying the foundation for lifelong active living. Despite these goals, research by the Canadian Fitness and Lifestyle Institute shows that most students are not sufficiently active for healthy growth and development.

Experts consider that energy expenditure of at least eight kilocalories per kilogram of body weight per day (KKD) is required for optimal growth and development. This is equivalent to half an hour of martial arts and half an hour of walking for a total of one hour of activity throughout the day. Physical activity is a key component of what scientists refer to as the energy balance. An individual becomes fatter when the energy balance becomes positive, meaning that the overall kilojoules consumed exceeds the kilojoules expended.

In November 1999, the Canadian Fitness and Lifestyle Research Institute (CFLRI) released *Canada's Children and Youth: A Physical Activity Profile*. This report was based on data collected from the first phase of the National Longitudinal Survey of Children and Youth (n=22,831) and the Health Behaviour Study (n=6,357). The Profile found that three fifths of Canada's children could not be defined as sufficiently active for healthy growth and development. Only one fifth of youth accumulated the recommended seven hours a week of out-of-school sports or exercise.

Sufficient activity levels were found to be higher in school-aged children; more prevalent in boys than in girls; more prevalent in children from families with a high income; less likely to occur in children who spoke a language other than English or French at home; and increased with the length of residency for immigrant children. Higher activity levels were found to be linked with better overall health, pro-social behaviour and high academic achievements. The Executive Summary is found in Appendix I.

The *1999 Physical Activity Monitor* found that girls are less active than boys: 39% of girls and 52% of boys are considered active enough. 43% of the girls aged 5-12 were active compared to 54% of the boys. This gap continued into adolescence as 32% of girls and 50% of boys were active. It should be noted that activity declined more in the adolescent girls than in the adolescent boys.

Regular studies conducted by the CFLRI beginning in 1981 have shown a steady increase in activity levels throughout the 1980's and early 1990's. However, this positive trend has since slowed. By the mid 1990's, the percentage of Canadians considered active had increased from 29% in 1981 to 37%. The latest figures taken in 1999 show no change in the activity levels. Although BC citizens are more active than the Canadian average, only 43% meet the minimum recommended physical activity levels.

In the past, many students were active in commuting to and from school. However, recent research (The Environmental Monitor, 1998) shows that this is no longer the case. 45% of Canadian children live 2km or less from their school, yet 47% of children never walk to school, 9% rarely walk to school and 8% walk less than half the time. Although 91% of school-aged children own a bicycle, 64% never cycle to and from school, 11% rarely cycle and 12% cycle less than half the time (1998 National Survey of Active Transportation, 1998).

Teachers are also noting that their students are not sufficiently active. There was a consistent appeal in the Curriculum Survey comments to add and emphasize more active living. Teachers responding to the survey said:

- "I think it is very scary to see primary students who are exhausted after running around the gym twice."
- "Children aren't as active outside of school as they should be. Several reasons—family work schedules, safety concerns, proximity of facilities."
- "I am still amazed at the number of girls (Gr. 5 to 7) who do not participate in PE classes, or teachers using gym time as a "punishment" or time to miss. Too many of our children are out of shape at a young age—we need to get them moving."

Recent research (M.Tremblay and D. Willms, 2000) reports that the prevalence of overweight has increased by 92% in boys and by 57% in girls between 1981 and 1996. The same paper states that the BMI of Canadian children has increased by nearly 0.1kg/m^2 per year. Whereas in 1981, 15% of the boys and girls were considered overweight, and by 1996 the numbers had climbed to 28.8% of the boys and 23.6% for the girls. The relative risk of becoming an obese adult is 2 to 6.5 times higher for obese children than for children in the healthy-weight range (Baranowski, 2000).

Although much of the increase in obesity can be blamed on poor dietary habits and the prevalence of fast food and high-fat foods, this alone is not the cause.. As children choose a more and more sedentary lifestyle, physical activity levels drop and the kilojoules expended declines. US studies show that those children who watched 4 or more hours of television per day had higher BMI and thicker skin folds than those who watched fewer than 2 hours per day. *Canada's Children and Youth: A Physical Activity Profile* (1999) found that 25% of Canadian youth watch 4 or more hours of television per week. The Profile also reveals that 22% of inactive youth watched four or more hours of television per day.

Analysis

Although the aim and goal of the physical education curriculum is to "enable all learners to enhance their quality of life through active living", all evidence indicates that this goal is not being met. The curriculum supports this aim, but the desired outcome is not being reached. Research shows that BC's children and youth continue to suffer a declining quality of life due to inactivity.

b) Health care organizations are lobbying that physical activity and physical education be given a greater priority within the school system. They believe that the current priority given to physical education in most schools does not allow student health needs to be met.

The Canadian Medical Association (CMA) is the national voice of Canadian physicians, providing leadership for physicians and promoting health care standards. At their 1998 General Council meeting, the CMA passed a resolution calling for 30 minutes a day of compulsory physical education for all children. The July 23rd edition of the Globe and Mail contained an article where the BC Medical Association (BCMA) spokesperson called on the Ministry to increase the amount of Physical Education in schools.

In January 2001, the BC Ministry of Health released a consultation document entitled *Cardiovascular Disease Prevention Strategy*. This document addressed the risk factors and issues specific to cardiovascular disease. As part of this strategy, recommendations for priority action were established. The first priority was the prevention/health promotion for children and youth in schools. The rationale for making this the top priority was that the patterns of health behaviour are established early in our lives. Activity levels and nutrition were identified as two of the three key ingredients required to prevent cardiovascular disease.

The Society for Children and Youth is a provincial advocacy organization dedicated to improving the well-being of children and youth. The SCY is a strong supporter of physical activity for children and youth and participation in sport. They have been involved in the promotion of healthy and safe sports for the last twenty years.

The SCY published a Position Statement on Children/Youth and Sport in March 2001 which states that:

> the involvement of children and youth in enjoyable physical recreation activities is a corner stone of their health and well-being. Children and youth develop physically and socially through involvement in sport and research shows a connection between physical fitness, academic ability and positive behaviour generally.

The SCY recommends that the provincial government commit to a "sports for all" initiative that would emphasize and support school and community sports. This initiative would be delivered through schools, municipalities and community-based sports associations.

The SCY position paper highlights the documented benefits that physical recreation programs can have on children and youth at risk. Their recommended initiative is based on a policy of inclusion which would ensure that programs are accessible to all regardless of economic conditions, gender, ability, culture or other barriers. The position paper is included in Appendix J.

The Coalition for Active Living (CAL) is a group of organizations and individuals working together to promote healthy active living, enhance quality of life, and reduce the risk of illness associated with sedentary lifestyles. The members include diverse organizations such as the Active Living Alliance for Canadians with a Disability, Canadian Parks and Recreation Association, the College of Family Physicians of Canada, the Heart and Stroke Foundation of Canada, and the YWCA. A complete list of members is available in Appendix K.

The CAL has held nationwide consultations to identify priorities and strategies to promote physical activity. During this process, over 200 active living leaders across Canada were consulted and a six point agenda was drafted. Of these six strategies, one of which is to "implement a complete set of measures to ensure that Canadian youth are educated about physical activity and making healthy lifestyle choices, as well as provided with suitable physical activity opportunities where they live, learn and play." Included in this priority is a call to schools to move towards the same quality and quantity of Physical Education instruction as was present prior to the early 1990's. The complete six point agenda is included in appendix L.

Researchers are increasingly blaming schools for lower activity levels among children and youth. Dr. Ross E. Anderson (2000), working out of the Johns Hopkins School of Medicine, writes:

> With school budgets tightening across Canada and elsewhere in Western countries, physical education and after-school sport programs have recently been on the chopping block....This is particularly troubling since high-quality, school-based physical education can help promote healthier living and encourage a lifetime of active living.

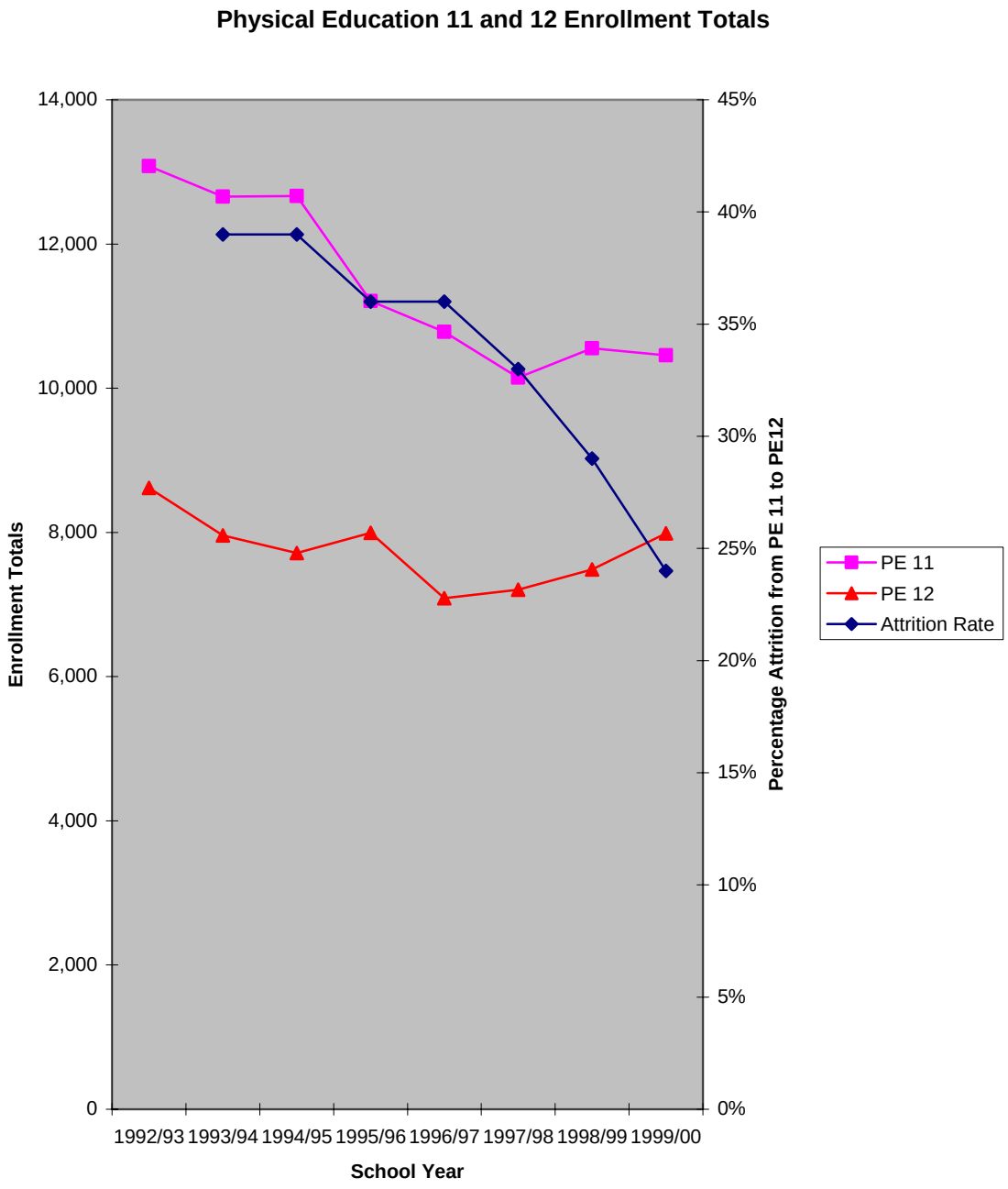
Analysis

The health community has recognized the need to address the problem of inactivity with children and youth. They recognize that the research links positive Physical Education experiences with positive attitudes towards physical activity among adults. They are requesting that the Ministry of Education and the school system play a more active role in encouraging students to be active by mandating daily physical education. The IRP recommendations are consistent with the values expressed in the IRP.

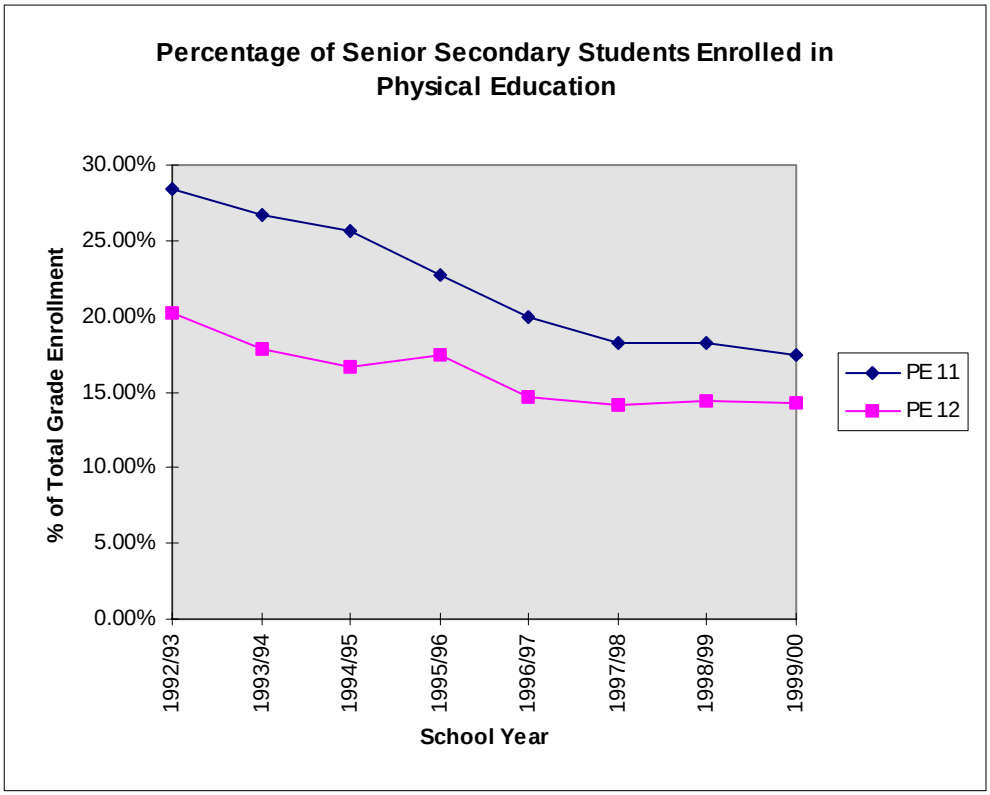
c) There has been a steady decline in senior secondary physical education enrollment numbers. Research shows that secondary students choose to enroll in physical education based primarily on past physical education experiences.

Students are required to take physical education from kindergarten to Grade 10, at which point they can opt to take physical education as an applied skills graduation requirement. Ministry of Education data shows that enrollment in physical education has been steadily declining throughout the 1990's.

The number of students continuing to enroll in physical education beyond Grade 10 has declined from a total of 21,697 in 1992/93 to a low of 17,867 in 1997/98. However, the attrition rate from Grade 11 to 12 has dropped steadily since the early 90's from a high of 39% in 1993/94 to 24% in 1999/00. Although fewer students are taking physical education in Grade 11, more are making the transition from Grade 11 to 12.



A more revealing way of looking at enrollment is to compare the total numbers of students enrolled in Grade 11 or 12 physical education and compare this to the total number of students in these grades. This shows a declining percentage of students that are choosing to take senior physical education.



A recent study (Gibbons, S., Van Gyn, G, Whar Higgins, J., Gaul, C., 2000) has shown that students elect to take Grade 11 physical education based primarily on their K-10 PE experiences and not based on their expectations of what the course will be like. Students electing not to continue in physical education often site the repetitive content, their feelings that they are being graded on their skills, an over-emphasis on team sports instead of lifelong leisure activities, and the lack of time within their timetable.

The curriculum allows for great flexibility in the types of activities which can be used to meet learning outcomes. However, the telephone interviews and Survey reveal that many teachers are frustrated by an inability to offer these activities due to the extra costs. The IRP suggests activities such as martial arts, fencing, tai chi, squash, racquetball, cricket, archery, golf, curling, horseback riding, in-line skating, rock climbing, snowboarding, kayaking, sailboarding, diving, snorkeling and underwater games. These are all activities which senior students find appealing, but few school budgets allow most schools to access such activities. As one teacher remarked in the Survey, “While much of the curriculum is practical and easily achievable, much of what is in the IRP 8 to 10 is very impractical given time and money constraints (i.e., outdoor activities and other off-campus activities).”

The teacher is caught in the predicament of having to offer activities which can be taught for no additional costs, despite the fact that many of these activities are the same as those offered in earlier grades. Teachers express a desire to provide programs that will attract senior students, but lack the money to offer many of the these activity options. The easiest option for teachers unable to provide diverse programming is to revert to the traditional activities.

The IRP includes suggested assessment strategies, but often students feel that their physical limitations lead to lower grades. Many academic students find that getting a high mark in PE 11/12 is too difficult, relying on high skills, incredibly consistent effort and participation rates, and achieving standards which are above their physical capabilities.

Students with career goals outside of recreation or physical education often cannot find the time in their timetables to take PE 11/12. They opt for courses that are more academic and help them reach their career goals. Students report that guidance counsellors frequently advise students to drop physical education in the senior grades.

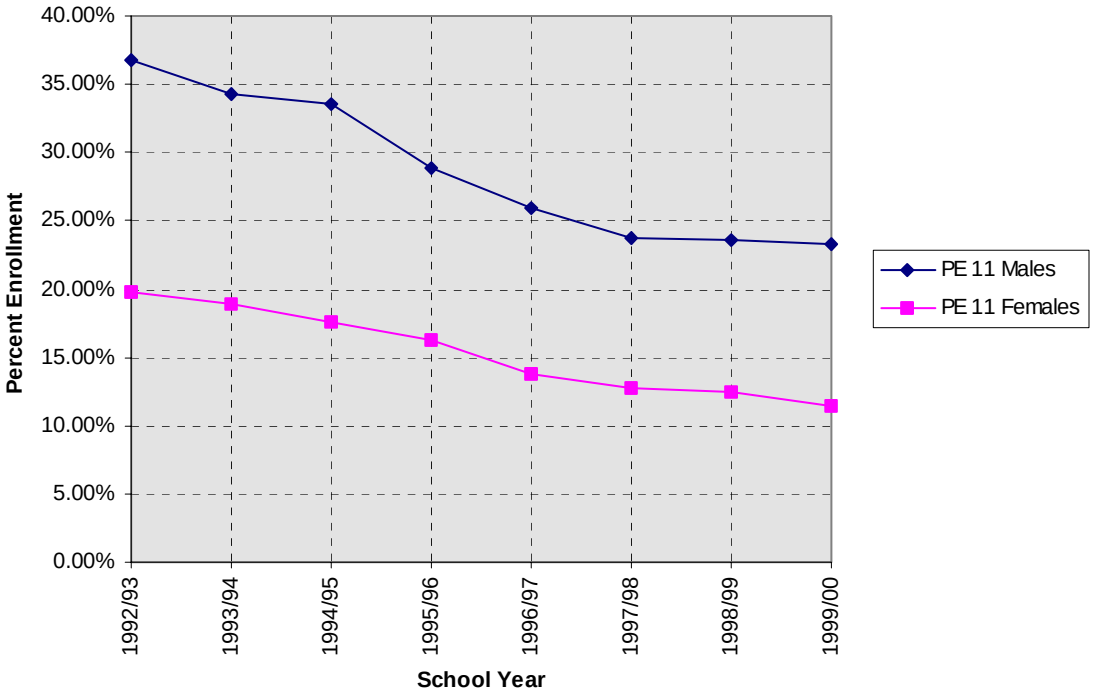
The Applied Skills Overview Team is a group of teacher, student, administrator, parent, and business representatives that meet periodically to provide feedback on the curriculum. At the team's last meeting (February 9th, 2001), they made two suggestions affecting Physical Education. The team recognized that physical fitness and active healthy living have implications across the curricula which are not necessarily equivalent to the availability of gym time. They suggested that Physical Education 11 be made mandatory for graduation in response to the increasing need for fitness training among students. The team also recommended that the curriculum better address instruction regarding nutrition within the Physical Education curriculum.

A number of Survey respondents spoke of the need to make PE 11 and 12 compulsory. They felt that the IRP aim of "enabling all students..." could not be met when some of those students could opt out of taking physical education at the senior grades. These teachers believe that making physical education mandatory, forces students to be active. Teachers responding to the Survey said:

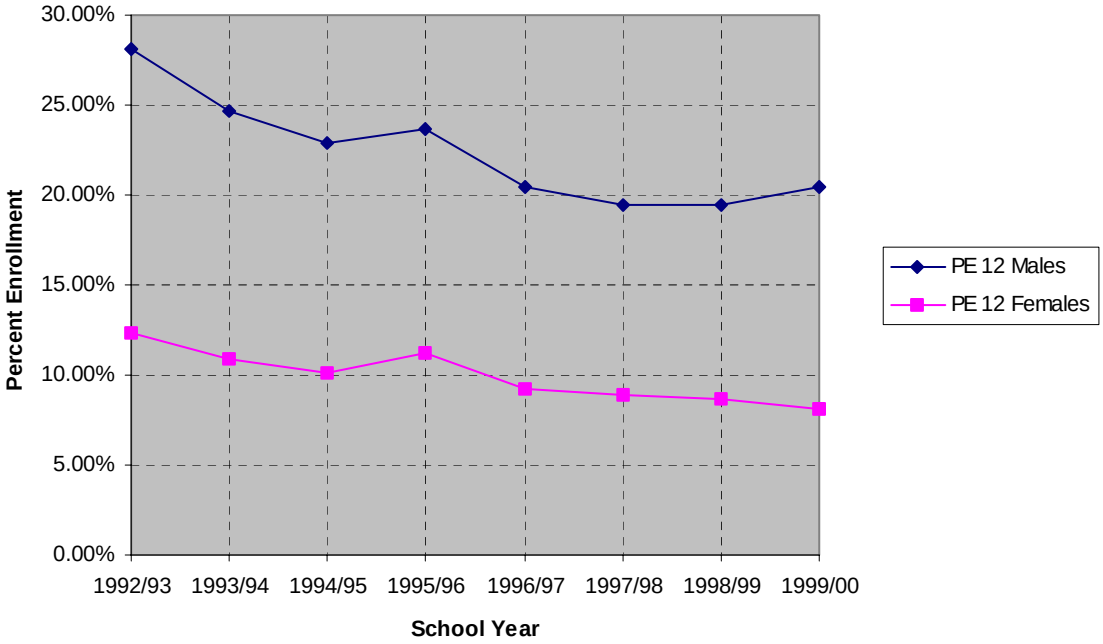
- "Children from K-12 should have at least 2 gym periods every week—compulsory. We do not emphasize the importance of exercise to our well-being especially as we get older."
- "It should be compulsory to at least grade 11. Too many young people are sedentary on computers at desks."
- "In grade 11, physical education, healthy living, active lifestyles, or a variation, needs to be a graduation requirement."
- "Why does PE [mandatory] end in Grade 10? Shouldn't it continue through to Grade 12 especially if a goal is to enhance a student's quality of life through active living."
- "With increasing adolescent obesity, PE 11 and even 12 should be a requirement not elective."

When the enrollment figures (see graphs below) are examined by gender, a noticeable trend emerges. 10% of female students take physical education in grade 11 or 12, compared to 20-25% of male students. Studies (Gill, 1995; Lirg, 1991; Tappe et al., 1989) show that female students are more likely than males to have a negative view of their own bodies (Gill, 1995), to be concerned with their physical beauty and body shape (Ibid.), to have eating disorders or to smoke to control their weight, to perceive themselves as having limited physical competence (Lirgg, 1991), and to have lower motivation or interest in exercise (Tappe et al., 1989). Some experts feel that many physical education curricula and programs overemphasize stereotypic male activities.

Percent Enrollment By Gender In Physical Education 11



Percent Enrollment By Gender In Physical Education 12



Teachers list the lack of female enrollment in senior grade PE as a major concern. In the Survey, teacher comments reflect that this is an issue to be addressed:

- "Continued concern regarding the low participation rate in Gr. 11 and 12, especially females."
- "All my PE 11 and PE 12 classes have 1 to 3 girls and 22 to 30 boys. We need more avenues for the females to continue in PE."
- "[I am concerned about] low ratio of girls participating in PE 11 and 12."
- "Decline of female participation at senior courses (Gr. 11/12)."

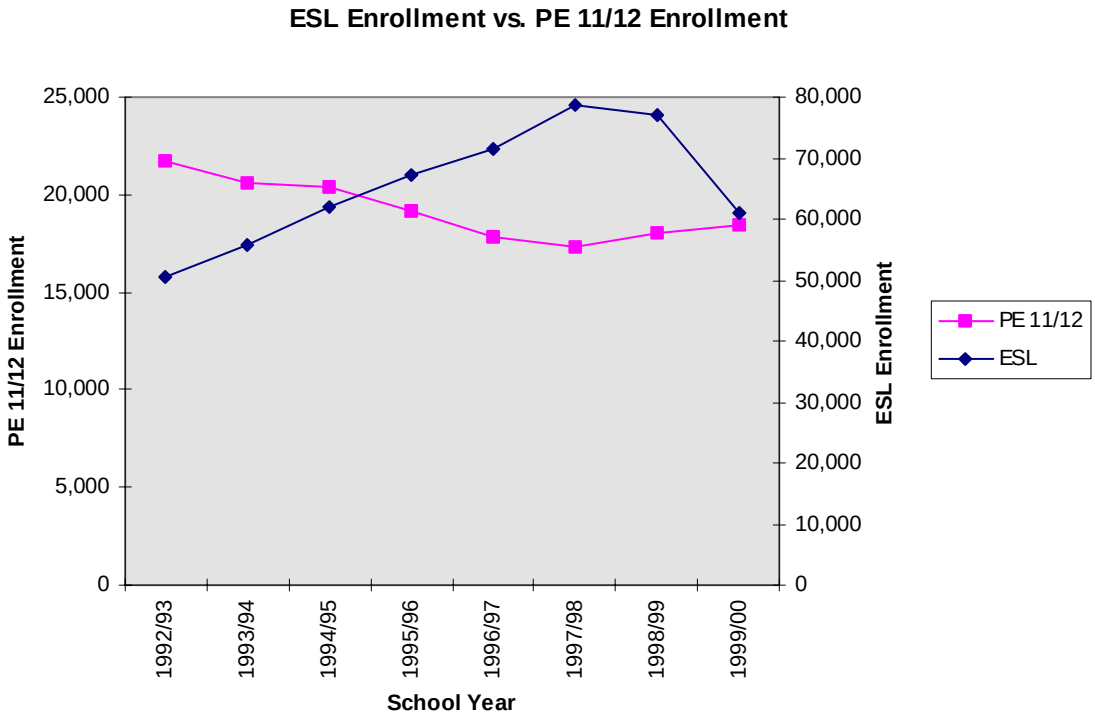
A recent research paper entitled *Listening to Female Students in High School Physical Education* (S. Gibbons, J. Wharf Higgins, C. Gaul, G. Van Gyn, 1999) quoted Grade 11 female students on their perception of physical education.

- "Grade 8-10 PE was awful—repetitive, skill-oriented, boring, and not much fun, so why would you want to take it as an option?" (Gr. 11 not in PE)
- "[In the earlier grades], they should reduce the amount of team and competitive activities." (Gr. 11 not in PE)
- "All the running...I hate the running." (Gr. 11 not in PE)
- "Students should be evaluated on effort and participation, and teachers should not pay more attention to the skilled and popular students." (Gr. 11 not in PE)
- "The guys hog the ball, and don't let you participate like you want to." (Gr. 11 not in PE)
- "I don't want to learn the same things over and over again and I never seem to get any better, in fact I think I get worse." (Gr. 10)
- "PE isn't very accessible. For our whole school of 700-800 people there are three PE classes. If there's some conflict in your timetable, then you're screwed." (Gr. 11 not in PE).
- "PE is too sports oriented." (Gr. 11 not in PE)
- "I figure that PE 11 is the same as PE 8,9, and 10 so why bother." (Gr. 10)

Gibbons et al found that one of the key determinants as to whether a female student enrolled in physical experience was her past experiences in physical education. Those with positive physical education experiences chose to continue. Their research also indicated the need to offer activities other than the traditional sports curriculum. shows that there are specific ways that teachers can use the current curriculum and appeal to female senior secondary students. Their study shows that teachers, with student input, could design and promote programs that meet the IRP and are relevant to these students and are effective at increasing their participation. This type of a program change required that the administration was supportive of such changes. This study is included in Appendix M.

Canadian research (Humbert, 1995) has documented the physical education experience of female students at an urban high school (n=50). Two themes of note emerged from the study. First, the students expressed a strong desire to "have fun" in physical education. Second, they recalled negative experiences in co-educational physical education.

Teachers have claimed that it is difficult to engage ESL students in physical education and physical activities. They claim that many of these students come from cultures that place little value sports, activity or fitness, and believe that these families choose to emphasize academics over active play. Although this is strictly anecdotal, it is noteworthy that the enrollment figures for Grade 11 and 12 Physical Education reached their lowest point as the provincial ESL numbers peaked. Likewise, as the ESL numbers have dropped, the PE enrollment has slightly increased.



Analysis

The number of students enrolling in senior secondary physical education has been declining. Various schools have tried to implement the curriculum in more appealing ways; however, this has come with only limited success. Most students decide whether to enroll in PE 11 based not on what the course description states, but rather based on their past experiences in physical education and their academic goals. These low enrollment figures are, in part, an indication of the success of physical education implementation. Research would indicate that a more effective physical education program in earlier grades would lead to higher enrollment in higher grades.

V) Our Curriculum Is Not Being Implemented In Many Classrooms.

The aim of the curriculum is to enable all students to enhance their quality of life through active living. In order to achieve this aim through the prescribed learning outcomes, physical education is compulsory for all Kindergarten to Grade 10 students, and is recommended that schools allocate 10% of instructional time to physical education. It is acknowledged in the IRP Introduction that facilities, equipment and time allocation will vary widely; however, this variation is so marked that many schools are not able to implement the curriculum. This disclaimer also does not account for many of the factors that teachers claim to be barriers to implementation.

a) Some schools have facilities and equipment challenges that make the implementation of the curriculum difficult.

BC schools range from small one room schoolhouses to sprawling state-of-the-art education facilities. Unlike many areas of curriculum, the facilities and equipment at a school's disposal dramatically dictates the activities of the physical education program. For example, some of the teachers interviewed in the telephone surveys indicated that their school had no gymnasium. As a result, they are limited in what activities they can do with their classes. Schools far from community recreation facilities are also limited in the types of activities that can be offered.

Telephone interviews revealed that most elementary schools use the gymnasium as a shared-use or multipurpose room. Physical education classes must accommodate school assemblies,

concerts, community polling stations, or in some cases lunch room usage. Telephone interviews and surveys indicated that this reduces the student's accessibility to physical activity and limits the teacher's ability to offer activities which require a lot of equipment (e.g., gymnastics).

A consistent theme emerging from both the secondary and elementary random telephone interviews was that school facilities were a hindrance to the quality and quantity of physical education instruction. 63% of those surveyed mentioned that facilities and equipment were a barrier to implementing quality programs. In some cases, the shortage of gymnasium space combined with inclement weather required that programs be dramatically altered for safety reasons.

The Teacher Curriculum Survey asked respondents which barriers hinder them and their school from implementing the physical education curriculum. Of the 371 respondents, 58.2% indicated that a lack of adequate equipment was a barrier to curriculum implementation. This was the seen by respondents as the greatest barrier. When asked what factors determine the content of their teaching, 93.4% of the 452 respondents indicated "equipment availability". Of those listed, this was the greatest determinant of teaching content. In the comment space provided, teachers expanded on the difficulty of implementing the curriculum with the facilities and equipment provided:

- "A gymnasium."
- "Insufficient funds to purchase equipment."
- "Only one gym! Already it is shared where there are two classes at a time using it."
- "[Our] gym should be condemned."
- "Gym too small."
- "Reduced budgets prevent/limit equipment purchase."
- "Adequate teaching space, too many students."
- "Conditions and safety of facilities. They are used so much that most gym floors are so slippery that they could be unsafe."
- "Availability of gym."
- "Time in the facility."
- "Poor gym facilities which enable you to do individual or dual activities. Otherwise, you have too many watching."
- "Why do we pretend that we can offer quality programs without adequate facilities?"
- "Money to repair broken equipment."
- "The PE departments I have been associated with are forced to structure their programs around the equipment in the school, which is generally inadequate."

The Ministry of Education (Capital Planning Branch) Space Standards Review Draft Report, released in June 2001, recommend substantial increases in gymnasium and gymnasium ancillary space. Planners and architects recognize that the gymnasium size recommendations from 1992 are no longer adequate. The report states that with elementary schools beyond a 450 capacity, a larger gym (540 m^2) will be required. For middle and secondary schools above 600 students, the report recommends an increase in gymnasium size and ancillary size. The recommended ration of students to gymnasium space ranges by age and school size from 1.38 m^2 per student for small elementary school, to .92 m^2 per student in a large secondary school.

At present, there is no inventory of BC schools which gives an indication of the average gymnasium size, the number of schools below the space standards recommendation, or the percentage of schools where increased enrollment has made facilities inadequate.

Analysis

The Introduction in the IRP acknowledges that facilities and equipment will present certain schools with implementation challenges. However, some schools are so restricted by a lack of facilities and equipment that they are unable to meet some of the learning outcomes.

b) The majority of elementary schools are do not appear to be allocating the recommended 10% of instructional time to physical education.
The IRPs recommend that 10% of instructional time be spent on physical education. The BC Manual of School Law (September, 2001) states that minimum instructional time for elementary students is 23.75 hours per week. Therefore, the recommended amount of elementary instructional time devoted to physical education should be 2.38 hours a week (142 minutes).

To determine the amount of time that students actually receive, the Ministry conducted an informal survey of public elementary schools (n=138) in October 2001. The Ministry found that 74% of the surveyed public elementary classes are not receiving the recommended amount of physical education. 40% of classes received less than 100 minutes per week of physical education. The average class receives 116 minutes of physical education every week. When this percentage is extrapolated to reflect the number of students in these classes, the number rises only slightly to 117 minutes per week. This survey is accurate to ± 7.3%, 19 times out of 20.

The Teacher Curriculum Survey asked the percentage of instructional time spent on physical education during the year. Of the 180 teachers who responded, more than one third (36.1%) indicated that they were not allocating the recommended 10% of instructional time. The wording of the question required that teachers convert the number of minutes per week of physical education into a percentage form. Those who indicated the instructional time in minutes or number of classes per week consistently were below the recommended level.

The BC Heart Health Project states that "specialists in the field suggest that, at best, most students receive two 40 minute or three 30 minute periods of physical education each week—representing 53% and 60% of the mandated (sic) curriculum time respectively." This statement is consistent with the findings from the random telephone surveys. The elementary teachers interviewed spent between 60 and 160 minutes per week on physical education. Of those randomly surveyed only one school indicated that they were spending the full 10% of the recommended time.

Telephone surveys also highlighted the obvious: a 40 minute physical education class most often only amounts to 25 minutes of activity. By the time students get to the gym or field, take out equipment, listen to instructions, and begin the activity, a fair portion of the time has been used. Time is also lost at the end of class as equipment is put away. It should be noted that many elementary classes are physically active outside of physical education instructional time. Secondary classes encounter even more of this phenomenon as students arrive from another class, change into their gym strip, attendance is taken, instructions are given, a skill lesson occurs, and then time must be left for the students to change out of their gym strip. However, secondary students benefit from longer physical education periods.

Last year, the Canadian Association for Health, Physical Education, Recreation and Dance (CAHPERD) awarded 765 schools with Gold and Platinum awards in recognition their excellence in Physical Education programming. Schools must apply to be awarded CAHPERD awards. Of the schools awarded with this distinction, 86 (11.4% of total in Canada) were awarded to BC schools. 59 of these BC schools were given Platinum Awards recognizing 150 minutes of Phys. Ed. per week at a designated program quality levels. This represents 5% of BC schools. If schools allocate 10.6% of instructional time (8 minutes more than the recommended 142 minutes per week), they would fulfill the total number of minutes required per week for a Platinum Award. 17 BC schools claimed Gold awards for 90 minutes of physical education per week. A complete list of BC's award winning schools is located in Appendix N.

In the Teacher Curriculum Survey, teachers indicated that a lack of instructional time was the second greatest barrier to implementing the curriculum. This lack of time can mean one of two things: a lack of overall time to meet learning outcomes in a variety of subjects leaving less than the desired number of minutes in a week to devote to physical education, or a lack of time in the

gym due to inadequate facilities or scheduling difficulties. Teacher comments included with this survey response indicate that both of these are factors.

- "Educators have been and are being asked to do more every year. This has made it very difficult to implement daily PE."
- "I would like to include more PE, but time is a factor. I don't have enough time to meet the PLOs in every subject."
- "School day does not allow for enough instructional time with new expanding requirements. Too many curriculum areas have been added."
- "All I know is that if you allow 10% time for PE, that leaves 90% for everything else! Which if you try to get through all the ILOs is impossible."
- "Time in facility"
- "In a large school, gym time is limited. We use outdoors when possible."
- "Too many expectations in all curricular areas."
- "Enough preparation time to create and implement."

There is a movement begun by CAHPERD to implement Quality Daily Physical Education (QDPE). They recommend that students receive 30 minutes of instruction each day throughout the year. This is to be a well planned curricular program taught by teachers who are qualified to teach Physical Education.

Many of the respondents advocated moving towards daily physical education. When asked how physical education could be improved, respondents suggested:

- "Daily PE across all levels."
- "Daily physical exercise is vital in all grades."
- "All students should be active daily."
- "PE should be every day, not semestered. Linear [schedule] is more beneficial."
- "We can't continue to have PE semestered, it must be daily!!"
- "PE should be a daily activity but with the enormous demands in other curricular areas and special needs it is too difficult to spare the time."
- "Should be daily runs or exercise program for the whole school."
- "Daily PE is essential to make exercise a lifelong habit."

The Heart and Stroke Foundation of BC and the Yukon, in partnership with the Ministry of Health, has released a series of strategies to address the causes of cardiovascular disease. The BC Heart Health Project lists children and youth as a key target group for their physical activity strategy. The Project identifies schools as one of the key settings for action, noting that:

> In spite of the research findings (and obvious common sense) pointing to the role schools should play in providing quality physical activity opportunities, there is a clear lack of commitment in British Columbia. There are no requirements of any kind for physical activity in the preschool setting. There are no requirements for elementary school teachers to include physical education courses during their training. There are no requirements for extracurricular activity in the schools—programs are decided at the school level....physical education becomes an optional subject at Grade 11. Studies have shown that many students select "more important subjects" in lieu of physical education. In terms of providing support to teachers, only one school district in the province has a designated physical education consultant. This is down from 33 in 1982 and 12 in 1994....Educators agree that the content of the current British Columbia physical education

> curriculum is a good one. Unfortunately, it is not universally implemented by teachers around the province....There is a clear need to place greater emphasis on lifetime activity pursuits and less emphasis on team and competitive sports (as outlined in the curriculum).

The BC Heart Health Project Physical Activity report is included in Appendix O.

According to *The Fall and Rise of School Physical Education in International Context* (Hardman 1998), there is a global trend toward decreasing physical education time allotments. Sweden has decreased its time allotments by 20% over 1994 levels. New curriculum in Austria and Finland have lowered mandated amounts of PE. France officially requires 5 hours per week of PE instruction, but research shows that this is not implemented and that 72% of elementary schools have less than two hours of instruction. In the Netherlands, the number of lessons per week has been lowered in primary and secondary school, and school swimming lessons have been cancelled. England and Wales attempted to implement a mandated curriculum allocating 7.5% of instructional time to physical education, but this caused a national debate, and an enquiry commission was struck. The required time allocation was subsequently decreased to 5%. Middle Eastern nations, such as the State of Kuwait, also report lowered allocations of curriculum time. This article is included in Appendix P.

Analysis

A significant number of BC schools are not allocating the recommended amount of instructional time to physical education. With less than 5% of BC schools receiving CAHPERD's QDPE Platinum awards (8 minutes more per week than 10% of instructional time), and few receiving Gold awards, it must be assumed that either a small portion of BC schools are meeting the Ministry recommendations or few of the schools have chosen to apply. Other survey findings suggest that in many cases it is the former.

For many students, the aim and goal of the curriculum cannot be met with less than the recommended percentage of instructional time. Out-of-school activity levels have dropped, hence elevating the health and fitness importance of the time spent in physical education classes.

c) The lack of priority given to physical education within the school system is a hindrance to IRP implementation.

The allocation of the instructional time is but one indication of the priority that the individual teacher and the school give to physical education and active living. Without polling each individual teacher and school, it is difficult to accurately gauge where physical education lies in the priorities of the average educator. However, it is interesting to note that only 4 out of 230 schools (1.7%) mentioned "Physical Education", "active living", "fitness", "physical development", "healthy lifestyle", or "healthy living" in their school growth plans in 1999/00.

Since many schools base their teacher professional development opportunities and in-service priorities on their school growth plans, it can be assumed that few schools are offering generalist elementary teachers any curriculum orientation or in-service opportunities in physical education. Research has shown that an increase in physical education time and improvements in the quality programs following teacher in-service. Studies have shown that the best programs occurred where physical education specialists were employed; however, the next best results were found where teachers received detailed information on the curriculum and effective in-service training. Comments by respondents to the Curriculum Survey confirm this need:

- "Appropriate in-service and professional development opportunities are limited."
- "More forums to discuss what is happening in various schools. The Pro D opportunities are often lacking for the grades 8 to 12 program."
- "Many teachers lack the confidence to teach a well-rounded program. I'd like to see some in-service teacher training."

- "In-service for teachers should be facilitated by Ministry of Education."

Most school districts have left the delivery of elementary physical education to the generalist teacher. There are very few specialist physical education teachers at the elementary level. Not all university teaching programs require physical education training for elementary generalist teachers. Of those schools who do require a methods course in PE instruction, most require a single semester class. The Physical Education Provincial Specialist Association (PEPSA) reports that there are only three school districts with a designated physical education consultant/coordinator to support generalist teachers with their PE instruction (Surrey, Burnaby, Coquitlam). All of these are working part-time. Since the early 1980's this number has dropped from a peak of 33 districts in 1982, to 12 districts in 1992, to the current number. There are more districts with athletic coordinators than districts with physical education coordinators.

Some of the respondents to the Teacher Curriculum Survey commented on the low priority given to physical education by their school and their colleagues.

- "A lot of elementary teachers look at PE as a frill or something that disrupts their classroom work."
- "Not a big enough priority."
- "There needs to be a higher profile for PE/active living and its connection to an individual's health."
- "I am concerned about the lack of importance given to PE. It is poorly taught in elementary school as specialized programs have been cut. We need louder voices to promote the importance of physical fitness, and healthy lifestyle management. Then maybe PE will be important again."
- "It is still not viewed by many as important."
- "PE is being marginalized both by time and other curriculum areas getting larger."
- "In our district, PE is part of the program but not really part of the reporting process (report cards). How important is the program if this is the case?"
- "It needs to be just as important as English, Math, SS, etc. PE classes are losing time to other subjects."
- "Students who fail PE 8,9,10 and are then given a standing granted because of a medical excuse or are pushed into the next grade level without passing the prior course. PE is still not regarded as important as math, English science or socials."
- "Lack of (or perceived lack of) importance of physical activities in students' educational program. Lower priority in eyes of parents and sometimes administration, when compared with "academic" courses."
- "A lot of school administrators treat PE as a low priority item. Quality goes down as a result."
- "For the most part PE is viewed as play time by teachers and students. Often it is used as a reward for good behaviour and is cancelled for bad behaviour."
- "Not highly valued by administrators."

PEPSA, the provincial specialist association, believes that physical education is being given a low priority within the school system.

> At the elementary level, physical education is a very low priority, with schools designating few specialist teachers to the subject, allocating little space on student report cards for physical education, and most schools falling far short of the recommended 10% of instructional time. At the secondary level, many "old school" teachers still emphasize the team games and focus on developing the athletes rather than the average student. These teachers generally use assessment and evaluation techniques which reward the athletes in the class with the highest marks.

PEPSA believes the low priority which schools, school districts and the Ministry place on physical education is one of the chief reasons that the curriculum is not being implemented.

BC teachers are not alone in feeling that physical education is occupying a low priority (Hardman, 1998). Educators in Scandinavia report that they also feel that PE is being marginalized by recent curriculum changes. In Belgium, curriculum reforms have placed physical education within fine arts and have emphasized expression and creativity while phasing our sports and competition. In France, government policies have emphasized elite sports over physical education programs that benefit all students. In the former East Germany, the physical education curriculum is seen as a socialist relic of the former GDR competitive sport system. Many teachers have allowed students great freedom in selecting their activities for fear of being seen as 'authoritarian ex-socialists'. The quality of instruction has fallen along with the subject's perceived value. The Czech and Slovak Republics are experiencing similar declines, as educators have attempted to model democracy and freedom within their physical education classes. This also has led to programs centered on student preferences and not based on any scientific or pedagogical soundness. The result is that the subject is now undervalued. In Saudi Arabia, there is no physical education for Muslim girls. In many Muslim nations in Africa, physical education and sport is associated with the evils of gambling and alcohol. PE in these countries occur only under strict conditions. In many countries, there is no physical education curriculum.

Analysis

In the absence of any provincial expectations or norms for physical fitness, physical skills or activity levels, physical education remains a low priority. Currently, students are assessed in grade 4,7 and 10 in reading, writing and numeracy and are compared to provincial expectations. In the absence of such assessment tools for physical education and fitness, the true state of our children and youth's fitness is based on anecdotal evidence and vague estimates. When schools are compared by Foundation Skills Assessment results and Provincial Exam scores, the declining state of student fitness is often not seen as a priority.

d) Many teachers are not implementing the gymnastics movement category (recommended minimum of 15% of physical education instructional time). Safety concerns and equipment are the major reason why the gymnastics movement category is not implemented.

There is a constant theme emerging from the telephone interviews, the Survey and individual letters, calls and teacher comments regarding gymnastics. It is suggested that teachers spend a minimum of 15% of the instructional time on gymnastics. The rationale, as stated in the IRP, for including gymnastics is:

> Through a variety of gymnastic activities students develop movement skills and concepts, and effective body mechanics. Within each gymnastic theme, activity-specific motor skills are taught in progression, providing the basis for the development and performance of a variety of gymnastic sequences using small and large apparatus.

In the May/June issue of BC Education News, Sherri Taylor the Program Co-ordinator for Gymnastics BC defended the role that gymnastics plays in physical education. "The obvious benefits of learning and participating in gymnastics include enhanced agility, co-ordination, strength, flexibility and spatial orientation." Aside from the physical benefits, it is often an activity where girls can experience success. The article is included in appendix Q.

Gymnastics is the most controversial activity in the physical education curriculum. It is seen by many teachers as a legal risk which, due to a lack of expertise, equipment, and adult support, they are not willing to take. 54% of the Survey respondents felt that gymnastics should be either removed or de-emphasized. Equipment, cost, expertise, student-teacher ratios and safety/liability were the most common reasons stated as to why gymnastics instruction should be de-emphasized or removed.

Many teachers, especially generalist teacher with little specific training, see gymnastics a dangerous legal liability which they are simply not willing to take. Comments from the Teacher Curriculum Surveys echo these concerns:

- "[I am concerned with] providing gymnastics without adequate training to ensure student safety."
- "Concerned about the liability risk in teaching gymnastics."
- "Potential liability concerns from having generalists teaching difficult areas such as gymnastics."
- "Gymnastics is a major concern but all sports topics have their own safety issues."
- "I never use the gymnastics equipment or the climbers and ropes which swing out from most gym walls, because I've never seen any safety guidelines, and I refuse to accept legal responsibility for children's safety without some kind of training or approved guidelines to follow."
- "I don't feel qualified to safely coach kids in some gymnastics activities."
- "I feel very uncomfortable working through the gymnastics outcomes even though I am a PE specialist because the student-teacher ratio is far too high to ensure the safety of the children."
- "Too many legal issues—teachers afraid to teach it. I would like to see equipment being used, but teachers don't feel comfortable."
- "Scary to teach."

The IRPs offer one page of safety considerations for any physical education activity. Some of these considerations are not much more than common sense. For example, "Have the students been given specific instruction about how to use and handle the equipment appropriately?" and "Are the students being properly supervised?" The Ministry offers no specific safety guidelines for gymnastics or other high risk activities which it endorses. Alberta, on the other hand, publishes a 142 page document entitled *Safety Guidelines for Physical Activity in Alberta Schools*. This includes specific safety guidelines for over 100 sports and activities ranging from pole vault to dodgeball. Nine pages of specific guidelines are devoted to gymnastics.

Some of the respondents to the Survey suggested that gymnastics be removed from the IRPs.

- "Why have this [in the curriculum] if districts are sending the message that we're not to teach it due to risk of injury?"
- "It's time to get rid of gymnastics—not everyone does it and it's too dangerous, needs experts. Many of the suggested strategies are not realistic, not age appropriate, and are boring for the students (and teachers)."
- "I feel that gymnastics should be eliminated—many do not do gymnastics—the safety, liability, lack of training."
- "We're not trained gymnasts. Gymnastics requires lots (too much) parent help."
- "This is a specialized subject that is awkward to teach in a meaningful way. Guys tend to hate it."
- "Take it out completely. Many safety issues with one generalist and 27 children."

Analysis

The safety concerns held by many teachers, schools and school districts with regard to gymnastics are real. Real and alleged legal liability cases in the past have left teachers scared to teach this movement category. Without proper training and safety guidelines, most teachers choose not to teach this portion of the curriculum. Many teachers feel that the risks of gymnastics outweigh the student benefits. The IRPs safety considerations are too general to give a non-specialist teacher any sense of comfort that they are following safe practices that could be defended should an accident occur. Proper training and safety guidelines will be required if this section of the curriculum is to be implemented.

e) Dance is valued by the majority of the physical education teachers, but implementation is hindered by a lack of resources, social awkwardness of students, and lack of teacher expertise.

Dance is one of the movement categories within the K-10 IRPs. It is hoped that through dance, students will gain an awareness of cultures including their own, enhance their self-esteem, express feelings, co-operate with others, create and lead movement sequences, be exposed to social and recreational opportunities, and perform basic and complex movement patterns to music. 55.9% of the elementary teachers who responded to this section of the Survey felt that dance should be emphasized or added.

Some teachers find that dance is a very important and enjoyable part of their physical education program. Survey respondents said:

- "It is good for developing social skills and coordination. It's fun." (Grade 8-10 teacher)
- "Emphasize creativity in dance. Add more [dance]." (Grade 1 teacher)
- "Emphasize—teach more hip hop culture dance as well as folk—my kids love it!" (Grade 4 teacher)
- "Lifetime skills we should promote—dance is needed for socialization." (Grade 5 teacher)

44%of those who responded to this section of the Survey felt that dance should be de-emphasized or removed from the curriculum. Secondary teachers felt that it was a struggle to motivate students for dance (especially male students). A number felt that resources were scarce and that music should be made more readily available. The overlap between physical education and fine arts was also mentioned as a reason to remove or de-emphasize dance.

- "Reduce dance to 10% of the program. More resource info is needed. Current music to support hip hop and swing."
- "[Dance] is successful for the girls class. Not successful with boys."
- "Difficult to teach without training, skill and confidence." (Grade 9 teacher)
- "This is duplicated under Fine Arts. The outcomes need appear only in one IRP or the other, not both." (Grade 2 teacher)
- "Remove dance unless music is provided with IRP for a collection of dances." (Grade 2/3 teacher)
- "This is a difficult area for teachers with no dance background." (Grade 4 teacher)
- "I personally am uncomfortable teaching rhythm or dance, so making it a LO has made seek some materials, workshops, experts that would help, but haven't had much luck so far."
- "Self-consciousness makes it awkward for students. Those active in community dance don't need it in school at this age." (Grade 5-7 teacher)
- "The PLOs for Dance in some cases are too difficult for the grade (i.e. Grade 4's creating their own dance sequence). Also suggestions how to teach partner dance helping students overcome the fact they will have to hold hands of another person (boy/boy or boy/girl)."
- "Dance is the worst to teach, tough to motivate kids (8,9,10) who are worried about how they look, to look bad (no rhythm)."

Many commented on the difficulty of finding dance music and resources. This seems to be a definite gap in the grade collections.

- "Dance tapes are not readily available."
- "There is little music etc. to match the PLO's that make it comfortable to teach."
- "Inexistent (sic) in dance."
- "More dances that will use hit songs to get the intermediate kids interested!"

Analysis

Although most teachers recognize the value of dance, they are having implementation difficulties. More dance resources should be added to the grade collection. Professional development in this movement category is required.

f) Many teachers are not able to meet the learning outcomes for the alternative environment activities movement category.
Alternative Environment Activities is one of the five movement categories that teachers are to spend no less than 15% of instructional activity fulfilling. This movement category includes such activities as aquatics (e.g., water adjustment, survival, stroke development, diving, snorkeling, synchronized swimming), land-based activities (e.g., hiking, backpacking, rock climbing, skiing, snowboarding, horseback riding), or water-based activities (e.g.,canoeing, rowing, kayaking, sailing, sailboarding).

The Canadian Fitness and Lifestyle Research Institute produces a regular survey of physical activity. The *Physical Activity Monitor* includes a list of the most popular physical activities for adults and children. The top 15 most popular physical activities for Canadian adults are: walking (81%), gardening/yard work (70%), swimming (54%), social dancing (46%), home exercise (45%), bicycling (45%), weight training (29%), bowling (27%), golf (26%), jogging/running (25%), skating (23%), baseball/softball (19%), exercise class/aerobics (18%), basketball (15%) and alpine skiing (14%). The most popular physical activities for Canadian school aged children are bicycling, swimming, tobogganing, swings/slides/etc., walking, skating, in-line skating, soccer, running/jogging, basketball. The alternative environment activities movement category is intended to expose students to activities such as swimming, skating, bowling, golf, and boating which are popular adult activities.

For most schools, these are expensive activities requiring a field trip and student or parental funding. Often these activities also require adult or parent supervision and transportation arrangements. Teachers responding to the survey indicated that these activities were unrealistic without administrative support and extra funding.

- "Expensive to transport and budget."
- "Lack of funds to take the class to Alternative Environment Activities. Admission fees as well as transportation."
- "Remove most of the alternative environment activities for Gr. 8 and 9. They are not mature enough and we do not have the finances to do it in all grades."
- "Extra activities outside the classroom require money from parents that some cannot afford."
- "When the new IRPs were first introduced and stressed environmental activities, there was no funding provided to complement these costly activities. Resource money was available to other subjects."
- "It is very hard to offer a variety of recreational pursuits when students have to pay extra to attend these pursuits."

Analysis
Schools are often not meeting the learning outcomes in this part of the curriculum due to the high costs and logistical challenges of taking students to alternative environments. Most school timetables and budgets do not make regular trips to the swimming pool or ski hill a realistic option. It would appear based on both the Teacher Curriculum Survey and the telephone surveys that teachers are not devoting the minimum 15% of instructional time to this category.

g) Elementary teacher expertise is a barrier to curriculum implementation. There is a call among the health and education communities to re-instate specialist physical education teachers for elementary.
Most school districts rely on generalist teachers to teach physical education at the elementary level. Many generalist teachers lack a background in physical education. Comments on the Survey emphasized the need for specialist teachers. These comments came from both elementary teachers having to teach a subject that is not their strength and from secondary specialist teachers who must structure their classes to accommodate Grade 8 students with poor skills and fitness. Survey respondents said:

- "If secondary PE is to remain important, more emphasis (specialists) must be placed on the accountability of elementary PE programs (i.e. specialists).
- "It is essential that elementary schools hire physical education specialists."
- "Specialists are important to make sure that students get a balance in the program of gymnastics/games/dance."
- "Teachers aren't qualified to teach many aspects of the PE curriculum, but are forced to."
- "Generalist teachers lack the skill and confidence to teach topics like gymnastics."
- "We are limited by our own skills/knowledge/expertise in the various areas of PE (teachers have to be an expert at everything!)."
- "The curriculum is only as thorough as the teacher implementing it. When classroom teachers and people such as myself (an ESL specialist) are providing small amounts of PE instruction in addition to their other duties, teachers don't have time to implement the curriculum as thoroughly as a specialist would be able to do."
- "Elementary teachers are generalists with specific interests. This means that it is impossible to be an expert in all subject areas, yet the IRP's assume an expertise that is not warranted....Come out of your ivory tower and see what real teaching life is like and what we have to deal with on an ongoing basis."

The BC Medical Association is the professional association representing over 8,000 medical practitioners. The BCMA's Council on Health Promotions has been very vocal in their support of physical activity among children and youth. The Athletics and Recreation Committee made the following resolution in their 2001 Annual Report:

> Eleven years ago one-third of Canadian children had less than the minimum amount of physical activity to maintain health. Last year two-thirds of Canadian children were not active enough to maintain health. The Ministers of Health from across Canada have pledged to decrease physical inactivity by 10% between 1998 and 2003. From 1998 to 2001, there have been no noticeable efforts on the part of the Ministry of Health or Ministry of Education to reach this goal.
> Be it resolved:
> That the BCMA lobby the Ministry of Education to ensure that all elementary schools have a physical education specialist teacher and all school districts have a physical education coordinator.

The BCMA lobbying efforts have already begun, with the issuing of a press release highlighting the need for more specialist teachers on June 25th and announcing that their resolution had been forwarded to the Ministry. The complete BCMA Council on Health Promotions Annual Report is included in Appendix R.

Research (Lawson, Lawson& Stevens, 1982) has shown that there are dramatic differences in the effectiveness of elementary generalist and elementary physical education specialists. Elementary students taught by a generalist teacher (n=298) could not distinguish between recess and physical education. Numerous studies (Harris and Jones, 1982; Shephard et al, 1982; Bischoff and Lewis, 1980; Nestroy, 1978) have found that students taught by specialist teachers make greater improvements in their physical fitness and motor fitness measures. Specialists most often have more student interactions regarding skill practice, while generalists relate more to game play (Twa, 1982). The former facilitates activity specific and motor skill development. Biscan and Hoffman (1976) found that specialists were able to better observe and analyze student skill performances.

Analysis

Teachers and the medical community are calling for the reinstatement of specialist teachers at the elementary level. Research has shown that specialist teachers are much more effective at teaching physical education than are generalists. The solution is not for the Ministry to mandate specialist teachers. The allocation of funding to physical education specialists is a district decision. Class size restrictions have caused many districts to limit the number of non-enrolling teachers. Greater flexibility in class size restrictions could help districts use non-enrolling specialist teachers in physical education, music and the fine arts.

h) There is a need for more physical education resources and professional development opportunities to implement the IRPs.

The Curriculum Survey attempted to determine the adequacy of teaching resources. Respondents were asked what other principal learning resources they use for physical education. 456 teachers responded to this question. The below chart shows the more frequently mentioned responses:

Resource	Number of Responses
Locally Developed District Resources	52
Premier Sports Awards Program	39
Physical Education for Elementary School Children	39
Quality Lesson Plans (Zabraysek)	10
St. John's Ambulance First Aid	10
Physical Education Activities For Grades K-2 (Landy)	9
Active Health Resource Guide (1986 Ministry of Education)	7

The most frequently used resources were those developed at the local level. These very practical resources simplify the teaching of elementary physical education for the generalist teacher. Those listed were from the large school districts (Coquitlam, Burnaby, Richmond, Vancouver, Naniamo). The Kirchner text is the one used in most university education programs. The Premier Sports Awards Programs comprises a series of "how-to" manuals for various sports.

Although 68% of the respondents stated that they were generally satisfied with the recommended resources for the curriculum, 61% later indicated that they were unaware of the physical education grade collection.

60% of the survey respondents stated that they use information and communication technology to find instructional materials. The Ministry does not circulate any lists of internet resources for physical education.

The Teacher Survey asked teachers to comment regarding the need for resources and in-service:

- "Give us a textbook which would contain core lessons which we could implement at each grade."
- "Learning resources need to be available in hard copy. Costs are currently prohibiting their use."
- "We need resources written by PE people that have actually seen their ideas work."
- "Someone should come up with simple, teacher friendly, easy to use, month-long units that are complete and teachers could get at them easily."
- "We should have resources available to us other than the IRP."
- "The list of resources needs some updates, including web sites, print material and other helpful material."
- "Many teachers lack the confidence to teach a well-rounded program. I'd like to see some in-service teacher training."
- "Not enough time and funds for teacher in-service."
- "Make a collection of the programs uses by different teachers and make it available for all."

- "Our staff have undertaken a PE workshop series run here at the school to improve background knowledge and skills as well as teacher resources. This is useful."
- "Should be more conferences to update PE teachers on different ways to deliver instruction in particular activities and creating enthusiasm in PE classes."

Analysis

With most elementary schools relying on generalist teachers, and university education programs only requiring minimal methods courses in physical education, there is a need for professional development opportunities and resources. The Teacher Survey indicated that most frequently used resources were locally developed and simplified physical education teaching and planning for generalist teachers. Unfortunately, only the large districts produce these locally developed resources. There are excellent resources available on the internet or through individual provincial or national sport associations; however, few teachers are aware of their existence. Most generalist teachers do not have the time to search for lesson plans, units or assessment tools.

i) Teachers need greater guidance in assessment strategies and philosophies. There is an enormous diversity between teachers and schools in what is assessed.

Assessment in physical education is a very complex and contentious issue. The debate over participation vs. competency assessment rages. Many teachers feel that physical education should be graded primarily based on participation. If the student tries their best, displaying a consistent effort, participating in all activities and arriving with their PE strip every day, then they should earn an "A". Teachers with this assessment philosophy will de-emphasize skills and emphasize play and participation.

Other teachers feel that physical education should not be treated any differently than other subjects. Those mathematics students who have an innate ability to do math receive an "A" based on their competency in mathematics. Therefore, why should an athletic and coordinated student not receive an "A" based on their innate athletic abilities? Teachers holding to this assessment philosophy (often older and more traditional teachers) will emphasize skill and ability.

As a result of this philosophical debate, students are assessed much differently in various schools. This is further complicated when students are maturing at different rates, coming to class with vastly different levels of fitness and confidence, developing motor skills at hugely different rates, growing at different rates, undergoing puberty at different rates and experiencing menstruation (females). All of these factors will dramatically effect a student's ability to perform skills. Balanced programs offer assessment in skills, knowledge of physical education and sporting spirit (participation). Although our curriculum suggests ways that this balanced approach can be instituted, the ultimate assessment decisions are left to teachers. The IRP states that that "teachers determine the purpose, aspects, or attributes of learning on which to focus the assessment."

Some teachers responding to the Survey mentioned this frustration:

- "It is hard to grade students' skill level when there is so much difference in size, strength, and coordination developmentally. What is "A" level for the shortest, skinniest kid in the class who tries but can't manage to get a basket?"
- "Make sure you emphasize sportsmanship and fair play."
- "We have left skill-based curriculum to participation-based and we therefore have watered expectations down too low."
- "When considering assessment tools, think of evaluating outside in the wind and rain. I tried journals, etc. this year and it was not practical."
- "We are in a K-5 school system. Having to give a letter grade to grade 4's and 5's is really crazy. Like computers, PE should only be required to give an effort or participation mark. It is difficult to grade and is a headache. Why can't it be like computers?"
- "Personally, I would like to eliminate marks in PE in all elementary schools so that students only receive an effort mark—therefore less focus on assessment and more on teaching core values and enjoyment of PE to lead to healthier, more active kids."

- "Emphasis should be placed on participation and enjoyment instead of marks."

Senior secondary female students opting not to enroll in physical education mentioned that assessment in early grades was a factor in their decision. Research by Gibbons et al (1999) quoted Victoria students as saying:

- "Students should be evaluated on effort and participation, and teachers should not pay more attention to the skilled and popular students." (Gr. 11 not in PE)
- "If you aren't really skilled, it's hard to get an "A," grades should be based on participation and effort." (Gr. 10)
- "The players on the school teams get better marks because they get more practice."

Analysis

The IRPs give some very sound and diverse assessment strategies; however, there remains some confusion in this area. Because of this ambiguity, the curriculum has not been implemented as intended. Further Ministry clarification regarding assessment philosophy would be helpful to the teacher.

j) There is no provincial testing to hold schools and districts accountable for curriculum implementation and student performance. Unlike reading, writing, numeracy and all provincially examinable Grade 12 subjects, there is no measurement of student achievement in physical education.

There are currently no provincial performance standards and provincial assessment. This has not always been the case. *The British Columbia Assessment of Physical Education* (Ministry, 1979) examined a provincially representative sample of approximately 3000 public school students in Grades 3, 7 and 11. Students completed 3 hours of assessment including paper and pencil knowledge tests, attitude inventories, questionnaires about their participation in PE, and performance measures of physical fitness and motor abilities. The physical tests were very comprehensive and included a timed run (cardiovascular fitness), a flexed arm hang (static muscular endurance), a one minute speed sit-ups test (dynamic muscular endurance), grip strength (static strength), standing long jump (explosive strength), sit and reach (flexibility), side slide (agility), wall pass (eye-hand coordination), 50 foot hop (locomotor skill), and throw for form (manipulative skill). The assessment revealed that the overall physical fitness demonstrated by the students was "weak" with the exception of grade 11 students who were generally considered "marginally satisfactory" (females) and satisfactory (males). All elementary students generally received "weak" ratings. The assessment summary also noted a "disturbingly high incidence of overweight students." The summary report is included in Appendix S.

A number of jurisdictions use a standard fitness test as a motivation and incentive for students and teachers to place a priority on fitness. The rationale is that such tests give the students an indication of how their fitness compares with other students of their age, teaches how fitness effects overall health, and motivates students to pursue fitness. It is hoped that standardized fitness tests provide schools and teachers with an indication of the need to emphasize fitness and activity. There is often an award given for different levels of excellence and for participation. During the 1970's and 80's, many BC schools used the Canadian Physical Fitness Awards program which awarded students with crests for achieving fitness standards in a series of tests.

Many states and districts in the US have begun to mandate the use standardized fitness tests. California, Illinois and soon New York require the use of the *Fitnessgram* test for all students. It is also used extensively in Florida, Texas, South Carolina, Pheonix, Minneapolis, and Denver. It is used in Ottawa-Carleton and other Canadian districts. No province mandates its use.

The *Fitnessgram* test was developed by the Cooper Institute for Aerobic Research, and the primary goal of the program is to assist students in establishing physical activity as part of their daily lives. *Fitnessgram* provides a number of options for each performance task so that all students, including those with special needs, have the maximum opportunity to complete the test. The test measures aerobic capacity, abdominal strength and endurance, upper body

strength/flexibility, body composition, trunk extensor strength/flexibility and flexibility. The test is sold through Human Kinetics to a school or school district for approximately $200. This provides the school with the testing kit and the right to use the test every year.

California law states that all students must be tested using the *Fitnessgram* test in Grades 5, 7 and 9. The results are reported every two years to the State Board of Education. The test gives an accurate indication of the fitness of their students. This program has had little effect on increasing the profile of physical education or boosting student fitness levels. California students are tested in most subjects, with the results from some of those tests going towards published school rankings. Since the *Fitnessgram* test results are not included in this ranking, schools do not devote any more time towards improving the fitness of their students. In fact, the incentive is to further lower the priority given to physical education and emphasize subjects which will effect a school's ranking. The test simply reaffirms every two years that students are below accepted fitness levels, and that the situation is getting worse.

Most researchers have moved away from measuring student fitness in favour of measuring activity levels. The rationale is that activity is a better measure of behavioural shifts. The Nova Scotia government has just launched a pilot project to test student activity levels by measuring the volume, frequency and intensity of exercise that they perform during a one week period. Pager-sized accelerometers record how often the student exercises and for how many minutes, the time of day and the intensity of the activity. Theses monitoring devices will be given to 2,160 Grade 3, 7 and 11 students. Nova Scotia purchased 160 accelerometers for approximately $90,000 ($562 each) as part of the program which will cost $200,000 over 3 years. The province plans to repeat this test every four years.

Analysis

Fitness tests, if administered properly, teach the student the elements of fitness and explain what each test is assessing and why this is important to overall health. Such tests give students the data about their own personal fitness that enables them to create their own goals and fitness programs. The motivation to improve should come not from the actual test scores, but from what the test teaches as far as the health benefits of fitness.

Much of the emphasis of late has shifted away from fitness and towards activity. It is reasoned that activity is a determining behavioural factor in the acquiring of fitness. Physical fitness is therefore, seen as an objective measure or indicator of regular physical activity. Many educators feel that an emphasis on fitness will lead to students becoming fit in the short term, but being turned off physical activity in the long run. As a result, many physical education curricula have moved towards outcomes that are behaviour based, and that stress the development of positive attitudes towards physical activities.

k) There are no provincial performance standards for physical education. A physically educated person has not been defined in the BC.

Beginning in the late 1980's, the United States focused on the development of national standards in all subjects. There are a number of groups that produced these standards for physical education. In 1992, the National Association for Sport and Physical Education (NASPE) published its first attempt at defining a physically educated person with *Outcomes of Quality Physical Education Programs*. In 1990, the Mid-continent Regional Educational Laboratory (McREL) began the systematic collection, review, and analysis of national and state curriculum documents in all subject areas with the goal of identifying, synthesizing and publishing national standards.

NASPE later published *Moving into the Future: National Standards for Physical Education: A Guide to Content and Assessment* (1995), listing five standards with benchmarks at grades K, 2, 4, 6, 8, 10, and 12. Standards are described for each of these grades including rationale statements, sample benchmarks, and assessment examples. These content standards were intended to expand and complement the 1992 work. The assessment examples are quite extensive, providing numerous ideas. The use of national standards places a heavy emphasis on

the need to assess skills. Educators do not only assess the end result (e.g.. accurately serving a tennis ball), but also of the process (e.g. grip, angle of racket, etc.). Such assessment analyzes movements that can be applied to a variety of physical activities. McREL used NASPE's standards to create its own national standards, including benchmarks for each at grades K-2, 3-6, 7-8 and 9-12. The McREL standards and benchmarks are included in Appendix T.

Analysis

There are some benefits to having performance standards to accompany the curriculum standards (expressed as Learning Outcomes). It could be argued that performance standards would better support the curriculum goal of developing "the knowledge, skills, and attitudes necessary to incorporate physical activity into regular routines and leisure pursuits to live an active, healthy lifestyle." Content standards describe a skill or ability that a student would use in everyday or academic life, whereas curriculum standards emphasize classroom outcomes. If the aim of the curriculum is changing people's routines to incorporate active living, then it might be best to emphasize the skills and abilities that would be used in everyday routines. The learning outcomes, however, are helpful to generalist teachers as they define what the student should be able to do in class. The two are not mutually exclusive, but rather could be complementary in the physical education curriculum.

l) The majority of teachers do not integrate Aboriginal content into their physical education instruction.

In Appendix C, the IRP encourages teachers to integrate Aboriginal content into their instruction. The Curriculum Survey found that 72.5% of the respondents (316 of 436 respondents) did not. Teachers who did integrate Aboriginal content into their classes (27.5% of respondents), stated that they taught lacrosse, Aboriginal games, and dances. When teachers who responded that they did not integrate Aboriginal content were asked what might assist them to integrate Aboriginal content, the majority of respondents stated that they would need more resources and instruction. Only 9 of the 316 respondents who stated that they did not integrate Aboriginal content chose to state what would assist them to integrate it in the future.

Analysis

There seems to be a modest desire among teachers to integrate Aboriginal content in physical education. If this is a Ministry priority, then there is a need to provide Aboriginal teaching resources to teachers.

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