USING A GAME SENSE APPROACH FOR IMPROVING FUNDAMENTAL MOTOR SKILLS

Paper Presented at

AUSTRALIAN ASSOCIATION FOR RESEARCH IN EDUCATION CONFERENCE

Melbourne, Victoria. December, 2004,

by

Bradley Austin, John Haynes and Judith Miller
School of Education
University of New England

ABSTRACT

Children in a rural township in northern NSW were measured for efficiency level in the performance of five fundamental motor skills. Children (average age: 11 years) were assessed using the NSW Get Skilled Get Active skill checklist (2000). Based on the recommendation that 240-600 minutes of instructional time is required to master one skill, (New South Wales Department of Education and Training, 2000: 79) a 'needs based' selection process was instigated to take one skill and provide remedial intervention using a Games sense approach. Soccer was the sport of choice of the students and therefore the kick was the priority skill for this group to improve. The pre-test scores revealed zero students at the 'mastery' level for the kick and one student was at the 'near mastery' level (Booth et al., 1997). The Games sense approach was selected, to maintain high motivation and to test the efficacy of this approach. More specifically, the children were involved in two lessons of 45 minutes for six weeks (540 minutes), which focused on the skills associated with soccer. Post-test results showed overall improvements in the level of mastery performance of the kick. Implications of this research include the teaching strategies employed to increase fundamental motor skill proficiency.

INTRODUCTION

As part of a final year of the University of New England Bachelor of Education degree (Primary) all students are required to undertake, what is termed an internship. This normally involves placement of the trainee teacher within a primary school, under the supervision of a regular practising 'classroom' teacher. The class range in primary schools is from kindergarten (5 year old children) through to year six (12 year old children). The internship for the trainee teacher takes place over a continuous ten-week period during the final term of study. During this time an action research project is required to be undertaken.

The student undertaking this research project had received additional training in the Physical Education area. This training was part of an attempt by the Physical Education Team from the School of Education (UNE) to address a perceived need for better-prepared generalist primary school teachers in the K-6 Physical Education Key Learning Area (Miller, Haynes & Dickson 2004).

As Action Research related to Fundamental Motor Skills is the basis of this study, an outline this process is provided, along with the a review of the literature. McKernan (1996:5) provides the following 'minimalist definition' of action research.

> Action Research is the reflective process whereby in a given problem area, where one wishes to improve practice or personal understanding, inquiry is carried out by the practitioner - first, to clearly define the problem; secondly, to specify a plan of action - including the testing of hypotheses by application of action to the problem. Evaluation is then undertaken to monitor and establish the effectiveness of the action taken. Finally, participants reflect upon, explain developments, and communicate these results to the community of action researchers. Action research is a systematic self-reflective scientific inquiry by practitioners to improve practice.

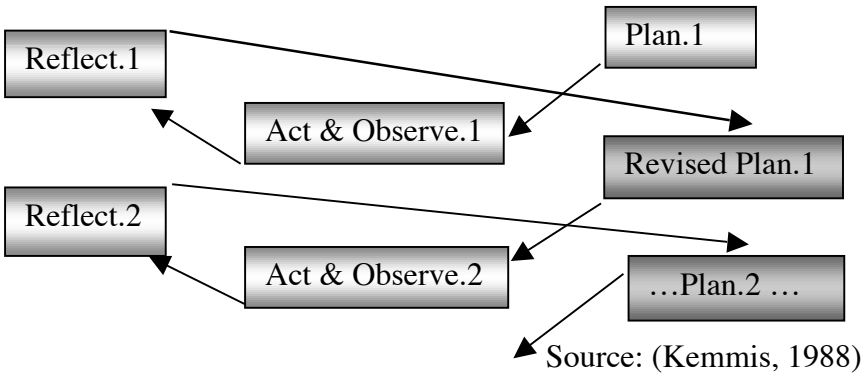
McKernan's definition includes the stages of an Action Research study. The first stage, i.e., the planning stage involves the search for, and the identification of a genuine research question (which should result in more than a 'yes' or 'no' - answer) (Macintyre, 2000:30). The second stage (aiming to answer this question) is then formulated, and a method of reporting the findings is designed. This stage also needs to carefully reflect the offerings, which come from the undertaking of

the previous stage. Thirdly, this stage involves beginning to collect evidence. Macintyre (2000:59) suggests that individuals should ask themselves; What action(s) can I take to gather evidence to answer the research question? And recommends that it could be done, by asking: What? How? When? Where? and with Whom? (Macintyre 2000:60). It is the "Why" question that is the basic assumption behind this action research project. Fourthly, the reflecting stage provides the opportunity to analyse what has occurred to date.

Grundy (1995) suggests that Action Research is about "making rational judgements on the basis of the evidence (and) about what (has) occurred and how worthwhile it was" (1995:16). This provides the opportunity for the researcher to analyse the 'evidence,' which Grundy refers to as the data. The reflection stage is required to determine the true findings. The researcher needs to get to the core of the matter, and make an informed change. This entails more than just 'applying make-up gloss' (Grundy 1995:16). A revised plan, arising from the reflection stage, and the subsequent cycle which follows, provide the opportunity for the researcher to redefine the problem, consider what has been discovered from the first cycle, and set about rediscovering/rectifying the issues involved in a slightly different manner.

In terms of this action research study, the emphasis has been placed on the first cycle. An outline of a possible second cycle has been included for consideration. Linking the stages of McKernan (1996) with the Kemmis' (1988) action research model (see Figure 1) provides an accurate picture of the cyclical nature of this process, involved in action research.

Figure 1: The Action Research Spiral



THE LITERATURE

There is a wide range of literature available related to the development of fundamental movement skills (FMS). The New South Wales Department of Education and Training describes them as "the building blocks for movement. They are skills, which children need to participate successfully in all types of games, physical activities and sports" (2000:11). Furthermore, the importance of fundamental motor skills to movement choices for children is stated:

> "research shows that children who are competent in fundamental movement skills are more likely to enjoy sports and activities, and develop a lifelong commitment to physical activity ... students who have achieved proficiency in fundamental movement skills have been found to have better self-esteem, socialisation skills and a more positive attitude towards physical activity. Research also indicates that the improvement in self-esteem and confidence in performing fundamental movement skills has a flow-on effect to other areas of a child's education" (NSW DET 2000:11-12).

Furthermore, there is consistent reporting that children in Australia are not performing to the expectations of educators in terms of proficiency or mastery of fundamental motor skills (Booth et al., 1997;Walkley et al., 1993). However, one feature that shows some variation within the literature relates to the age at which individuals should be considered 'proficient' (that is, displaying competence in all areas of a specific skill). Gallahue and Ozmun (1998) provide a comprehensive model of motor development. These authors consider that motor development is a "sequential progression of movement abilities throughout the entire life span" (1998:80). As Gallahue and Ozmun (1998:79) detail:

> "the process of motor development reveals itself primarily through changes in movement behaviour. We all, i.e., infants, children, adolescents, and adults, are involved in the lifelong process of learning how to move with control and competence in response to changes we face daily in a constantly changing world".

Whilst this concept is extended beyond the boundaries of sport-specific movement, it can be implied that the skills an individual develops are in direct response to daily challenges. Hence, one way to view the problems associated with the lack of skill development may not be a result of poor co- ordination, or

lack of ability - it can be attributed to a lack of exposure in a range of learning environments either in traditional 'technique' approaches or to specific sports activities.

The hourglass model proposed by Gallahue and Ozmun (1998:81) is well known for its categorisation of the stages of motor development and their approximate age associations. Notwithstanding, the focus of the fundamental movement stage according to Gallahue and Ozmun, (1998) is a process of 'exploring', i.e., it is a time when young children are actively involved in experimenting with the movement capabilities of their bodies ... "(children) are learning how to respond with motor control and movement competencies" (1998:83).

Gallahue and Ozmun's (1998) model prompts questions such as; Are children at a stage where they can be classified as 'mature' by the age of 6 or 7 years? Broad interpretation by Pangrazi (1998:19) may indicate that the answer is probably 'no', when he states "when growth is rapid, the ability to learn new skills decreases ... children go through a period of rapid growth from birth to age five. From age six to the onset of adolescence, growth slows to a steady but increasing pattern". Furthermore, Pangrazi states "a five or six year variation (in maturational age) exists in a typical classroom" (1998:21). A liberal interpretation of this statement indicates that 'mature' status (a Gallahue and Ozmun term) can occur as young as 3 or 4 years of age, and the upper limits can be 10 or 11 years of age, i.e., at the end of Primary school!

To add empiricism to the debate, the NSW Department of Education and Training (2000:65) simplifies the concept of teaching fundamental movement skills (FMS) into stages of 'focused teaching', 'practise and development, benchmark (or proficiency) and 'consolidation'. The focused teaching of all twelve fundamental movement skills (as outlined by Department of Education and Training) occurs during the three years of stage one with benchmarks not expected until mid stage two to mid stage three depending on the skill. As such, this guide has an expectation the students displaying 'mature' characteristics of skill performances between the approximate ages of eight and eleven years. In contrast, a planning

guide released by the Education Department in Victoria (1996:5) sets differing expectations for the achievement of mastery in some of the same skills. Of five FMS relevant to this study (kick, dodge, skip, 2 handed strike and the sprint), only one skill - the 2-handed strike displays parity for expected age of proficiency between the two Departments of Education. Thus highlighting the disparity within the literature as to the 'most appropriate age' for teaching FMS and the age expectations of the most proficient performance for a range of skills termed fundamental.

Pangrazi (1998) asserts that the best time to teach skills is during the Primary years of schooling, however, due to difference in 'maturation' between individuals there will be a difference in the levels of proficiency attained by individuals of the same chronological age, hence the benchmarks should be used as a guide. As to the question of how the various fundamental movement skills should be taught, both the New South Wales (2000) and Victorian Department of Education Victoria (1996) concur. In addition, as part of the recommendations for the teaching of FMS, the support material provided advises that a minimal number of skills should be taught at any one time. Furthermore, the New South Wales package suggests it "takes between 240 and 600 minutes of instruction time to become proficient in one fundamental movement skill" (New South Wales Department of Education and Training, 2000:79).

SITUATIONAL ANALYSIS

The research site for this project is a Primary School with an enrolment of approximately 550 students. The school is situated within a rural township in northern New South Wales. The number of enrolments has been declining over the last decade, with forecasts predicting this number will drop below 500 in the coming years. A snapshot of the school's 2003 population shows there are slightly more male students (53%) than female students, and approximately one in ten students is aboriginal. This is the only Kindergarten to Year Six school in the township. Currently 40 people are employed across all areas of the school, with about half this number (n = 19) full-time classroom teachers. Seven of these teachers are male (approximately 36%) - doubling the state average of 17%

(Bagnall, 2001:24). However, like most schools, it is facing a number retirements during the remainder of this decade. The average age of the teaching staff is over 50 years of age.

The school population draws students predominantly from within the township, as well as from rural holdings in the surrounding shire and from smaller villages (whose residents use the town as their major goods and services centre). The community is now ranked second in New South Wales in terms of the oldest average age. Due to current environmental factors (drought) and the resulting downturn in services provided by the Local, State and Federal governments, new families are not attracted to the area, and the population is in steady decline

The Action Research study was conducted with a stage three (year six) class. There were 28 students in this class comprising of 16 boys and 12 girls, who were between 10 and 12 years of age. These students appeared to have a diverse range of abilities in terms of the academic, sporting and social endeavours. An analysis of the class shows that academically, there are some top range stage three students, in terms of State-wide numeracy and literacy test results. Conversely, there is a number of students who are working below the expectations of a stage three student.

Notably, the class contained twelve students (n = 12) who had represented the school at regional level this year in sports such as swimming, athletics, cricket, touch football and horse sports. Half of these students progressed to become NSW State representatives. The classroom teacher is a member of the Australian Schools Sporting Council.

Internship

The ten-week internship program consisted of three phases. Phase 1 was a two week supervised practicum; Phase 2 consisted of a four week associate teacher role; whilst Phase 3 involved a four week engagement co-teaching Personal Development, Health and Physical Education (PDHPE) across all stages of the school (this phase was undertaken with another intern from the University of New England).

The study, reported here, was conducted throughout the entire ten-week block, with maximum time allocated to the research during weeks five to ten of the practicum. The decision to focus upon the fundamental movement skill theme arose as a result of activities and games conducted during the first month of the practicum (among the activities that were undertaken were basketball, soccer and t-ball). During these lessons the basic playing skills of these students were observed and found to be at an acceptable level, however, the movements appeared to be lacking in refinement and proficiency.

A number of issues emerged as a result of preliminary assessment of skill levels of the students in this study. The formulation of the research question took account of the following considerations:

- Of the five fundamental movement skills initially assessed, the two most poorly performed skills included the kick; and the two-handed strike - no students demonstrating proficiency or 'mastery' level in either skill.
- The results of the 1997 NSW Physical Activity Survey (Booth et al., 1997: 44-45) indicate both the kick and the two-handed strike were the last to be mastered and had the lowest number of students assessed at mastery level. This is the case for students in Years 4, 6, 8 and 10.
- The survey of 28 students (average age 11 years) regarding their sporting histories revealed only one student indicated that they did not like participating in sport.
- Additionally, 18 of the 28 students indicated that the reason they enjoy participating, in sport, is because it is 'fun'.
- When asked to record any sports that they had played outside of school in the previous twelve months, the most common sport was soccer, followed by indoor volleyball and basketball.
- When comparing the data for "sports participated in outside school" to those released by the Australian Bureau of Statistics (ABS) (2003) there are many similarities. Although swimming topped the Bureau's study (the fact the local swimming pool is not open year round may contribute to these figures), soccer is the second most popular sport played by Australian children, followed by netball, tennis and basketball.

- Similarly, the ABS findings state: 'for both boys and girls, participation in organised sport peaked at the age of 11 years. However, across all ages boys were more likely to participate than girls ... there was also a higher percentage of boys participating in more than one sport (32% of boys compared with 20% of girls)" (2003).

The fundamental motor skill of the 'kick' was the focus of the research. Noting that half of all the children participated in an organised soccer match "outside of school in the preceding twelve months" - more than four times the national average. Preliminary data revealed that none of the 28 students were able to demonstrate proficiency in the 'kick'.

THE RESEARCH QUESTION

Hence, the question of this study became: If a 'game sense' approach to the teaching of the fundamental movement skill was implemented for the 'kick', would a change in the level of proficiency occur in this particular cohort?

METHODOLOGY

It has been suggested that the researcher asks: "What action(s) can be taken to gather evidence to answer the research question? The answer needs to be detailed under the headings of What? How? When? Where? and with Whom?" (Macintyre, 2000:60). The following sections outline the response to this question under the suggested headings:

The Framework

Firstly, the question pertaining to 'What?' This answered by the research question, namely, What if a 'game sense' approach to the teaching of the fundamental movement skill was implemented for the 'kick', would a change in the level of proficiency occur in this particular cohort?

Secondly, the 'How? is based on the teaching strategies and methods employed to assist students develop proficiency for the 'kick'. Thus the issue was deciding how to approach the teaching of the skill. Should a "traditional skills and drills, technique" be implemented or the more flexible 'game sense' approach be used? Using 'game sense' to teach physical skills focuses on the development of tactics and strategic thinking, with the added complementary issue of maintaining motivation. The Australian Sports Commission's Game Sense (1997) document suggests there:

> is limited value in technique practise that doesn't take into account other factors in the execution of the skill ... the game centred approach focuses on the teacher designing practices that progressively challenge and motivate players to develop an understanding of the strategies, skills and rules required to succeed in games - it makes the game the focus of the practice session (rather than the technique), and challenges the players to think about what they are actually doing and why (1997:2).

The motivating factor behind the decision for choosing the game sense approach for this study, ahead of the technique approach, was due to the students' response to the question posed to them "Which approach to Physical Education was preferable?" The response was 'games' because it is 'fun'. Details of the actual intervention are elaborated upon in the section below headed the 'Intervention'.

Thirdly, the 'When?' question! The 'intervention' program was implemented in conjunction with the scheduled Physical Education lessons over a six-week period, involving three lessons of 45 minutes duration per week (approximately 660 minutes of instruction). This allocation lies at the maximum of the recommended time allocation of the NSW Get skilled: Get Active program (New South Wales Department of Education and Training, 2000: 79).

Fourthly, the question 'Where?' Of necessity the lessons were conducted on the school ovals and paved surfaces. Suitable space to effect the intervention was not a problem, however, as the location of the school was in the northern highlands of NSW the climatic conditions sometimes posed a problem with windy (average

wind speed 10 km/hr) and cool weather (average daily temperature range 0.0°C to 14.6°C (FEHPS, 2004) during the time the program was implemented.

Finally, 'With Whom?' The 28 year six students formed the cohort for this study. The study was conducted with the assistance of the Supervising teacher, and a colleague who was co-teaching during the PDHPE segment of the practicum. Two UNE PDHPE staff members oversaw the project. These peers provided feedback and constructive criticism of the process. Grundy states that:

> action research is a form of social practice. As such, it recognizes that social practices like teaching and learning take place among and between people. While action research might be directed towards practitioners, it is not an individual process. It is by its history and philosophy collaborative (1995:10).

Data Collection

Data were collected at varying times throughout the study period. The data and observations were subject to triangulation through the two staff members present during the intervention. The supervising teacher and the researcher (teacher trainee) plus co-teacher trainee as well as students themselves made the observations and assessments. Triangulation attempts to reduce bias, although "it is not so much a technique for monitoring, as a more general method for bringing different kinds of evidence into some relationship with each other so that they can be compared and contrasted" (Elliott, 1991:82).

Preliminary Testing

Prior to the intervention program a range of fundamental movement skills (i.e. the kick; dodge; skip; two- handed strike and sprint run) were tested using the New South Wales Department of Education and Training's Get Skilled: Get Active package. Of the 28 students in the class, the maximum number of students considered 'proficient' in achieving each of the components described in the checklists in any one of the skills was three students (n = 3). The skills of the stationary kick, the dodge, and the two-handed strike resulted in no (n = 0)

students being considered proficient. This provides a broad picture of the skill level of the participants in this Action Research.

The performances of the kick were assessed from four perspectives. The first was the internship trainee teachers (the primary researcher/first author), the second was the supervising teacher, the third was the co-internship trainee, and fourth was the students in the class self-assessment and peer assessment.

The initial findings of self and peer assessment showed that students considered themselves to be proficient kickers, however, the trainee teachers and the supervising teacher assessments revealed the students did not achieve proficiency in specific parts of each component. One problem was that many of the students were performing a 'toe kick', rather than using the top of the foot to make contact with the ball. This is highlighted by the fact that only two students were classified as proficient in this component. The main problem was that no (n = 0) students bent their kicking leg to the 90°, required for proficiency.

When the students were initially asked to analyse their own performance all but one overestimated their own technique. This information was tracked throughout the remainder of the study. Only some aspects of the multiple levels of assessment are included in this paper, as the focus is the game sense intervention.

Instruments:

Data were collected using a number of instruments, including: checklists, surveys and observation sheets, as outlined below:

- Completion of checklists from Get Skill: Get Active package (New South Wales Department of Education and Training, 2000).
- Surveys completed by the subjects, designed to determine their sporting involvement.
- Self/Peer checklists and information sheets which allowed subjects to reflect upon their own level of attainment as well as providing information that allowed for a greater understanding of the requirements to achieve skill proficiency.
- Teacher observation sheet.

- School survey records from previous years, containing information about student performance.

The testing process began with a survey of the subjects to ascertain their sporting involvement. The results were tabulated and soccer was determined to be the most popular sport. The skills checklist was administered for all five fundamental motor skills – the kick was noted to be one of the skills that children performed poorly. The intervention program was designed using the Game Sense approach to address the low performance of the kick and the need for skills for a game that was popular for the majority of the class. The supervising teacher, the trainee teacher(s) and the students employed the skill checklist to assess the performances of children in the class for the kick. The final survey was conducted once the intervention program concluded.

THE INTERVENTION

The intervention process took place during weeks after the completion of the data analysis of the initial five skills. During weeks seven to ten, the intervention took place each Monday, Tuesday and Wednesday afternoons for 45 minutes for a total of twelve sessions. When students were absent during times of data collection, make-up sessions were conducted, to ensure that all students received an equal amount of time participating in the program. It should be noted that the prevailing climatic conditions had an impact on the way the students approached these sessions, and the vigour, which they showed towards participation.

Throughout the intervention period, all data (i.e., from the checklists completed by the principal researcher, teaching colleagues; and the students, in regard to their own development, and that of their peers) were collected and were maintained on a regular basis. General observations were made whenever possible, and details recorded. The triangulation of data from student self assessment may be considered a variable in the intervention, as it allowed students to self-assess and peer assess. This process contributed to the cognitive aspect of the Games Sense approach of learning in terms of verbalising and visualising the components of the kick.

The intervention program was taken largely from the Australian Sports Commission publication entitled "Games Sense Cards; 30 Games to develop thinking players" (Australian Sports Commission, 1999). More specifically those games classified as "invasion games" were the focus of the intervention. The publication includes, the purpose, equipment, how to play safely, focus questions and variations for each activity. In addition, two other games were adapted with the accompanying questions specifically designed to target the 'kick.

Those activities targeted from the Game Sense Cards (Australian Sports Commission, 1999) included:

* "Defend the Cone" (p. 51)
* "Tag ball" (p. 53)
* "5-point player" (p. 55)
* "End ball" (p. 57)
* "2 on 1" (p. 59)
* "Dribblers and robber" (p. 61)
* "3 minutes" (p. 63)
* "Keep the ball" (p. 65)

Two additional 'soccer-type' games were also included which were adapted from (Blake & Volp, 1964). The adaptations for the latter two games included the composition of the 'Games sense' technique addressing the key questions asked of the subjects.

* "Three-zone soccer" (p. 102)
* "Alley soccer" (p. 104)

Overall, standard lessons included a 'warm-up", skill development (focusing on the games sense approach), cool down and brief conclusion.

RESULTS

From observation, conducted over the course of the teaching cycle, it was evident improvement had occurred in the students' performances. Whilst the improvements did not result in a large number of students being considered proficient, it was a positive reflection on the progress being made by the students.

For the testing analysis small groups of students assessed their peers' performance using the Get Skilled Get Active checklist. The researcher completed the same checklist. In terms of the peer assessments, there were 109 observations, with 18 peers considered proficient at the mastery level, and a further 19 considered 'near-mastery'. Mastery level is defined as having all components demonstrated in all but one trial. Near Mastery is demonstrating all but one component in all but one trial (Booth et al., 1997).

During peer assessment, students were asked to make constructive feedback comments on the performance of their classmates. Some of the comments that were made included:

* "Kim needs to work on making his shoelaces contact the ball."
* "Everyone kept their eye on the ball. Some people followed through with their leg but not as high as the girl (above)."
* "All eyes were forced [sic] on the ball."
* "I think most people should concentrate on the follow-through and the preparation."
* "I think Bobby did an excellent kick but she just needs to work on the non-kicking foot beside the ball."

These comments indicated the students were able to discuss and recognise the skill as a sequence of related components, rather than just the one component. The benefit in real-terms of this reflection activity was observed in the performances in the subsequent lessons.

The researcher reassessed the kick in terms of the six components. From pre intervention testing, there was an increase in the number of students assessed as proficient (n = 8) compared with (n= 4) before intervention, and (n= 14) at the near-mastery level.

More specifically, the number of children who demonstrated an improvement for each of the components of the kick is shown in Table 1.

Table 1: Change in Component Proficiency: Pre to Post Intervention

Component	Pre Intervention No. of Children	Post Intervention No. of Children
Eyes focused on ball	20	24

Forward & sideward swing of opposite arm	4	11
Step forward with non-kicking foot near the ball	2	9
Bend knee of kicking leg 90°during the back swing	0	8
Contact the ball with the top of the foot	2	8
Kicking leg follows through towards the target	5	8

The above Table shows the data for the 'kick', which was analysed by the principal researcher, the co-internee and the supervising teacher. The number of students who demonstrate improvement for each component is illustrated.

Students Perspective

The subject evaluation survey conducted at the conclusion of the intervention was designed to gauge the effectiveness of the unit of work from the perspective of the students. Results emanating from subject responses showed that they thought 3 subjects had reacher proficiency, with 12 achieving near-mastery. Some of the student's comments included the following:

- When asked whether or not they felt they received "enough teacher instruction in relation to developing each component of the 'kick', the majority of the students (n = 18), indicated that they enjoyed the style of teaching, and it made a difference to their level of enjoyment, however, they felt that they would have been able to develop greater proficiency with more instruction, and more focus on refining individual components of the skill.
- In terms of time allocation, the students were asked whether they felt they spent enough time practising the skill to become proficient. Although approximately 60 minutes more time was allocated to the intervention than the maximum time recommended, 50% (n = 14) indicated they still needed more time.
- It was noted by many of the students that they were unaware of the accepted technique for kicking a ball before the intervention began.

CONCLUSION

The results presented for the perspective of the research questions posed, indicated that for this year six class, students improved in skill level for the fundamental motor skill of the kick. Two methods of establishing the data were considered a strength of the design. Specifically, by surveying the levels of sporting involvement of the students, and skill process assessment, a convincing level of relevance was provided for the selection of the kick as the skill to improve.

The high levels of motivation and interest in the Physical Education lessons cannot be discounted as an outcome of the Game Sense approach. Eager and enthusiastic students engage in the learning process more readily and commensurate results can be expected with such as approach. Although the techniques approach to skill development may be more focused (and familiar) in terms of students knowing what the teacher wants – the sustained interest and cognitive stimulation of the problem solving/Games sense approach to learning has been highlighted in this project.

The range of assessment approaches provides a challenging progression for trainee teachers and supervising teachers comparisons help in collecting more reliable data. This was particularly relevant in the use of the skill checklists. Furthermore, the implementation of self and peer assessment for the students demonstrates an initial overestimation of skill level by children in Year 6. However, there is the peripheral benefit gained by the students in terms of their understanding of the components of the kick. Replication of this approach is recommended.

Overall, students were exposed to 540 minutes of Physical Education time. However, practitioners know that approximately 30% of that time would be devoted to skilled movement and practise, which is noted by other researchers (Siedentop 1991:41). As such many of the students would not have been 'exposed' to the full time recommendation needed to learn and consolidate a skill at the most efficient or proficient level. However, the Games Sense approach has provided an effective method of gaining and maintaining children's interest in the

participation and performance of the kick in the context of soccer. More conclusively, the Game Sense approach has resulted in an increase in the number of children in this class being considered to have achieved the mastery or near mastery level of skill performance, which was the question posed in the project.

The approach described in this paper is one method of addressing the inadequate level of fundamental motor skill performances, and represents a viable methodology. The interconnectedness of the university requirements for trainee teachers as part of their internship demonstrates the valuable contribution Action Research projects can have for future teachers, the students that they work with and the importance of teachers acting as researchers in their professional practice. Enhancing the skills of teacher trainees through specialist PDHPE practicums, such as those at University of New England have the potential to enhance the status of PDHPE in the schools, as well as improve the skill levels of children in the primary grades.

REFERENCES

Australian Bureau of Statistics. (2003). *Culture and recreation: Children's participation in sport and leisure activities, Year Book 2003*. Retrieved 24th September,2003,http://80www.abs.gov.au.ezproxy.une.edu.au/ausstats/abs @nfs/)/FEC2DFAF7A7D7OD5CA256C32002415A9?open

Australian Sports Commission. (1999). *Game Sense Cards: 30 Games to develop thinking players*. Belconnen ACT: Australian Sports Commission.

Bagnall, D. (2001, June 5). Lost Boys. *The Bulletin,* pp. 24 - 28.

Blake, W. O., & Volp, A. M. (1964). *Lead - up Games To Team Sports*. Englewood Cliffs, NJ: Prentice- Hall Inc.

Booth, M., Macaskill, P., McLellan, L., Phongsavan, P., Okely, T., Patterson, J., et al. (1997). *NSW schools Fitness and Activity Survey 1997 Summary*. Ryde: New South Wales Department of Education and Training.

den Duyn, N. (1997). *Game Sense: Developing Thinking Players*. Canberra: Australian Sports Commission.

Department of Education Victoria. (1996). *Fundamental Motor Skills: A Manual for Classroom Teachers*. Melbourne: Community Information Services.

Elliott, J. (1991). *Action Research for Educational Change*: Open University Press.

FEHPS. (2004). *The weather*, from http://fehps.une.edu.au/X/Weather/

Gallahue, D. L., & Ozmun, J. C. (1998). *Understanding Motor Development: Infants, Children, Adolescents, Aduts* (4th ed.). Boston: McGaw-Hill.

Grundy, S. (1995). *Action Research as Professional Development, Occasional Paper No 1*. Paper presented at the Innovative Links Project AGPS, Canberra.

Kemmis, S. (Ed.). (1988). *Action Research in Retrospect and Prospect* (3rd ed) Geelong, Victoria: Deakin University Press.

Macintyre, C. (2000). *The Art of Action Research in the Classroon*. London: David Fulton Publishers.

McKernan, J. L. (1996). *Curriculum Action Research; A Handbook of Methods and resources for the Reflective Practitioner*. London: Kegan Page.

Miller, J., Haynes, J., & Dickson, S. (2004). *Tertiary Educators Addressing Challenges to Primary School Physical and Health Education*. Paper presented at the ACHPER, Wollongong, NSW.

New South Wales Department of Education and Training. (2000). *Get Skilled: Get Active*. Ryde: NSW DET Curriculum Support Directorate.

Pangrazi, R. P. (1998). *Dynamic Physical Education for Elementary School Children* (12th ed.). Needham Heights, MA: Allyn and Bacon.

Siedentop, D. (1991) *Developing Teaching Skills in Physical Education*. (3rd ed) Mayfield Publishing Co. Mountain View Ca.

Walkley, J., Holland, B., Treloar, R., & Probyn-Smith, H. (1993). Fundamental motor skill proficiency of children. *ACHPER National Journal* 40(3), 11-14.