

INVESTING IN OUR FUTURE THROUGH HEALTHY EATING

Study Focii

To study how physical activity and nutrition awareness programmes in schools are effectively supporting and influencing better learning outcomes of students.

Related Study Contexts/Foundations for Sabbatical

“Achievement in school is dependent on a number of factors, from the quality of teaching and the school environment, to the intellectual capability of the child and their ‘opportunity to learn’. Student’s health and wellbeing can either contribute to or undermine this ‘opportunity to learn’, and therefore their ability to achieve.

Although there is no clear evidence that improving physical activity and nutrition will directly result in improved academic achievement, it has been suggested that an indirect link between physical activity, nutrition and academic achievement exists due to improvements in physiological, behavioural, psychological and social health and wellbeing leading children to a state where they have the ‘opportunity to learn’.

Clinton, J., Rensford, A. & Willing, E. (2007)
A Literature Review of the Relationship between Physical Activity, Nutrition and Academic Achievement. Commissioned by
CMDHB Let’s Beat Diabetes Schools Accord. Auckland UniServices Ltd.

Acknowledgements

- I wish to gratefully acknowledge the support of my Board of Trustees in approving this Sabbatical Leave.
- Further acknowledgement with appreciation; is shared with:-
 - 1) Staff of Manurewa West Primary School.
 - 2) School Accord (LBD) – Counties Manukau District Health Board.
 - 3) School of Population Health, University of Auckland Tamaki Campus.
 - 4) Principal/MOE Officials/Schools visited in Singapore.
 - 5) Counties Manukau Sports Foundation

This Sabbatical Study was informative, very valuable and will undoubtedly support an effective implementation of Manurewa West Primary School’s Healthy School programme into the future.

Professionally, the benefits of the Action Research, Study Tasks and Professional Networking were immense. I felt challenged on many occasions; I was interested by the new information gained; and I was impressed by the many successful practices in place by schools/Health Agencies, and by the studies being conducted by various interest personnel/groups.

Most of all, this Sabbatical Leave allowed me time to reflect, review, and more importantly REFRESH.

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Background and Rationale

The project involved research of Healthy Eating, Nutrition in Foods, and Physical Activity initiatives in schools. Arising from this project were opportunities to identify possible benefits to students learning in schools, and influences on their attitudinal development in Mental and Emotional; Social; Physical; and Spiritual (Well-Being) applications.

Background

Schools in New Zealand are required to develop and implement programmes that “give priority to regular quality physical activity that develops movement skills for all students especially in years 1-6 (NAG 1(i)(c)).

Furthermore, Board of Trustees/Schools are required to:

- Promote healthy food and nutrition for all students; and
- Where food and beverages are sold on school premises, make only healthy options available (NAG 5(ii)(iii)).

The Current Health of New Zealand Children

Physical activity levels for young people in New Zealand are declining and sedentary behaviour is on the increase. These trends are worrying as one third of all children are overweight (21%) or obese (10%).

Associated interest areas of enquiry were:

- Challenges schools faced in implementing these
- Openness of teaching staff to implement and integrate HEHA*, and Healthy School Focii into their schools
- How communities were recognising related illnesses prevalent in its populations eg. Diabetes (Type 2); Obesity; and Cardio ailments.

Purposes

- To identify successful school programmes where learning outcomes are enhanced from a school culture embracing regular physical activity, and promotion of healthy food and nutritional guidelines in student school-based eating.
- To investigate teachers’ attitudes towards school based physical activity and nutrition programmes, then analyse how the attitudes are related to the teachers’ participation in programmes, and consequent engagement of students in expected programmes.
- To identify important areas to consider when engaging teachers in school based programmes eg. Professional development/delegated responsibility/salary unit allocation.

Study Contexts/Key Research Locations

The Sabbatical provided opportunities to spend time doing intensive study, action research, and undertaking observations of practice in schools (re. Rationale).

Study forums that assisted:

- Health Promoting Schools – CMDHB**
- Manurewa West Primary School
- School Accord – Lets Beat Diabetes (LBD) CMDHB
- University of Auckland School of Population/Health (Physical Activity, Nutrition, and Academic Achievement).
- Ministry of Education – Singapore (Health Curriculum)
- Selected Singapore Schools (Primary)
- HEHA – Ministry of Health/Education – New Zealand
- Counties Manukau Sport
- Manurewa West Primary School Parents/Community

A. Study/Research Findings

Research on the Contribution that Physical Activity and Nutrition makes to academic performance in school aged children. This was achieved through examining the evidence for the relationships between physical activity and nutrition and physiological, behavioural, psychological and social wellbeing.

* HEHA – Healthy Eating Healthy Activity
** CMDHB – Counties Manukau District Health Board
*** LBD – Let's Beat Diabetes

Physiological Wellbeing

There is clear evidence that increasing physical activity and improving nutrition will lead to improved physiological health and wellbeing. Physical activity may improve brain function. (Etnier & Landers, 1995) and increase neural connections (Jensen, 1998). There is also evidence showing that the level of quality of dietary intake influences both the development and function of the brain (Wachs, 2000; Bryan et al, 2004; Gorman, 1995; Strupp 1995, Morley and Lucas, 1997).

Behaviour

Evidence suggests that physical activity and nutrition can also influence behaviour. Many studies investigating the effects of increasing physical activity in schools report a positive effect on students' classroom behaviour including attitudes, creativity and discipline (Keays and Allison, 1995). Improved behaviour and attention in the classroom then enables students to absorb what they hear and see in the classroom (Putnam et al., 2004).

Psychological Wellbeing

Like having breakfast, increased physical activity is associated with improvements in the emotional health of children. Children who are physically fit generally have higher levels of self-esteem, self-efficiency, confidence, a sense of optimism, and decreased anxiety, stress and depression (Gruber, 1986, Tremblay et al., 2000, Scully et al., 1998, Hinkle, 1992; Strauss et al., 2001; Kirkcaldy et al., 2002).

Social Wellbeing

Aspects of the social well-being of children can be influenced by physical activity and nutrition, which can also impact on their 'opportunity to learn'. Engaging with others in physical activity may be beneficial to wellbeing in itself, as it can aid children in building relationships with their peers and develop their social skills (Taras, 2005).

Improving nutrition can lead to children becoming more socially involved, interested in their environment, active and capable of effective expression (Barrett et al., 1982). Under-development of social skills in poorly nourished children may be a result of having less energy and motivation to be involved in classroom activities (Brown and Pollitt, 1996).

Hauora

The health and wellbeing of children is affected by many factors. This concept is encapsulated well by the term 'hauora'. Hauora encompasses the physical, mental and emotional, social and spiritual dimensions of health (Te Kete Ipurangi, 2006). As outlined, physical activity and nutrition can make unique contributions to the dimensions of health.

Discussion

This literature review has revealed that physical activity and nutrition has a number of interrelated and complex implications for children's physiological, behavioural, psychological and social health and wellbeing, all of which can influence their 'opportunity to learn'. Currently in New Zealand there is a high level of interest in increasing efforts to improve the health and wellbeing of children. Physical activity levels for young people are declining and sedentary behaviour is on the increase. Many children in New Zealand are suffering from the effects of poor nutrition which can severely affect children's brain development, brain function, behaviour, psychological and social functioning, all of which can impact on their ability to learn. These trends are worrying as physical inactivity and poor diet are key risk factors for obesity (MOH, 1998), and one third of New Zealand children are either overweight (21%) or obese (10%; MOH, 1998).

Conclusion

Achievement at school is dependent on a number of factors ranging from the quality of teaching and the school environment to the intellectual capacity of the child and their 'opportunity to learn'. Students' health and wellbeing can either contribute to or undermine this 'opportunity to learn', and therefore their ability to achieve academically. Although there is no clear evidence that improving physical activity and nutrition will directly result in improved academic achievement, it is suggested that an indirect link exists between physical activity, nutrition and academic achievement due to improvements in physiological, behavioural, psychological and social wellbeing. Overall, these improvements lead children to a state where they have greater 'opportunity to learn'. It is health and wellbeing combined with the intellectual capability of children that brings them to a position to be able to learn.

Study Reference:

- "Literature Review of the Relationship between Physical Activity, Nutrition and Academic Achievement". – Prepared by Janet Clinton, Aimee Ransford, and Esther Willing 2008.
- University of Auckland School of Population Health (Tamaki Campus).

B. A School's Focus on Physical Activity; an Integral Component of it's Healthy School Programme

Manurewa West Primary School (Y5) is a successful, progressive contributing school in the South of Auckland. It is a decile 2 school, with a predominantly Maori/Pacific Island roll (83%).

The school has a daily Physical Activity programme involving all classes participating in a 'syndicate' planned programme of a maximum 20 minutes class time daily. In addition, there are organised minor games led by Teacher Aide Staff for Senior and Junior Students daily.

The school makes sure the difference between Physical Activity, and Physical Education is reflected in programme development. Essential to the success of the school's Physical Activity Programme is Professional Development support for teachers, and setting up of a Curriculum Committee with a Lead Teacher. Outside agencies such as Team Solutions, and Counties Manukau Sports Foundation provide effective support and resourcing.

Physical Activity is an emphasis in this school, because it is targeting its school population to become more aware of Diabetes (Type 2), Obesity, and Self Esteem Concerns, and how exercise can assist a much healthier School Community.

The School plan also targets the community of parents, and various incentive awards are presented at their weekly school assembly to students "Caught Being Physically Active". Parents support these assemblies by regular attendance. Television Media have also filmed the school's Physical Activity Programme, and notably DVD's of this filming can be viewed in the waiting room of many Doctor's Surgeries; Hospital Admission Dept; and other Community Health Agencies nationwide.

The School has received support from Charitable Trusts to provide sports equipment and during interval times, a wide range of equipment available, which support students to make up their own activities away from the organised ones.

The staffing similarly is encouraged to participate in Physical Activity as a benefit for their personal health and wellbeing.

Most notable in support of this, is the provision of a fully equipped on site staff Gymnasium, and a Massage Therapy Programme. Staff also run their own collegial "Walking Club" and "Weight Management" programmes.

In talking with the students, it comes as no surprise to hear them talk about the benefits they believe are gained from being "Physically Active", and so there is ample evidence to support Manurewa West Primary School's success as a very effective Physically Active School.

Manurewa West Primary School also supports visitations by Principals and Education Agencies from overseas. They have heard about the high impact which Physical Activity programmes are having in the school as part of the wider Healthy Schools programme.

C. Visitation to Selected Singapore Schools (Primary) International School Food Policies

The opportunity to visit several leading schools continued to open a new world of Education up to me. Several leading schools with differing Visions, school cultures and a range of community socio-economic backgrounds were visited. All schools were centred on the child and the development of strong community values. A huge emphasis was placed on building racial harmony, national pride and celebrating values. Nurturing and success for each child was highly valued through the partnerships between home and school and of course leading to the high educational standards found in this country. Education is the key driving force and heavily funded by the government. It is easy to see why Singaporeans' have safe, clean communities and are passionate about their beautiful country. I feel our government has a lot to learn from this.

As I moved through the schools I could see many possibilities/ideas that could be brought back to Manurewa West Primary School.

Visiting the schools also helped to reinforce, the strengths we have in the teaching profession here in New Zealand and at our school. Although there was much to gain, we also had skills in Literacy and other curriculum areas that I was able to share in Singapore. I appreciated the opportunities to do this in many of the schools visited.

Some of the highlights I observed were as follows:

At one School I was given an opportunity to observe a learning support room set up for ESOL students. The equipment was hands on and provided experiences for students who weren't proficient with English to help develop their speaking skills. I am confident that we could model this within our school without incurring a huge expense.

Ways to market our school – through an informative DVD (based on models viewed in Singapore) to welcome and inform new parents in particular new parents with preschool children. This also could be used when inducting new staff or showing visitors when they come to our school. Signage around the school promoted values and celebrated successes as being another example of good marketing.

- The first school I visited saw me welcomed by some of the younger students. The children made laminated bookmarks for me and walked around showing us the highlights. I was impressed with theme and I feel we could encourage our children to develop these skills when we have guests.
- School pride was being built through their own school song. The students enjoyed sharing this through their catchy song.
- Children very strong in their first language. Oral language precedes reading and writing. Very much an approach we hold onto.
- Building bridges with parents is very important. Teachers were in contact with parents via telephone each term, similar to our parent conferences.
- Ideas for celebrating school successes and events were presented in a colourful professionally printed quality school magazine. These were issued 2x per year and is a possibility for us to explore.
- Each school visited focused very much on school events. These included Racial Harmony Day, National Celebrations Day, Children's Day, Lantern Festivals, Learning Tips, International Friendship Day to name a few. These events were opportunities to share with parents and built school pride. I had the opportunity to share in one of these evenings. It was very professional and on a grand scale including students entertaining, food, games, local celebrities, lanterns, fundraising.
- School Sports days were also celebrated including, gymnastics, golf netball, swimming, and athletics. Very similar to what we do although celebrated in the school magazine.
- Academic success is always at the forefront in Singapore and was celebrated in a variety of ways including, learning trips, maths competitions, science projects, young authors, storytelling, enterprise and innovation. On reflection I feel we could use some of these approaches to help with fundraising projects as well as encouraging student achievement.
- The libraries were inviting, precious spaces where children were drawn in. Although professionally made, many of these models could be easily adapted, making our library a functional attractive environment where children want to go and read.

- Most recent up to date ICT tools available to enhance teaching and learning programmes. I still see the huge benefits with having a visualiser in each classroom. This could support shared reading as we could place any high impact book under the visualiser and the children could view the enlarged text on a screen. This would help save money on buying big books and possibly make the visualise cost effective.
- Great to see our Conference room at Manurewa West School is on a par with all the schools we went to (even better in many cases). All we need now is to display student art and fill our cabinets with school memorabilia.
- Ways we can enhance our school environment inside and outside – murals, signage, display areas for pupil's artwork. I enjoyed the tile-work and display cases centred around the school. Many cultural displays also helped encourage racial harmony and student pride in their own culture.
- Photo file of all special events in school stored on central server for easy access including school web site also end of year prize giving ceremony.
- I was reminded of the value to learning of puppet theatres within a school – library or technology room.
- Strong Management and leadership models to be embraced.
- Trim and fit and Fruittie Veggie Bites Programme offered interesting ways to promote good health including: outside agencies invited to speak on healthy living with children and their parents, also a 'Fruit and Vegetable Day'.

My impressions have left me appreciating the fact that I work in a school that is forward thinking. The opportunity to be involved in global education is only going to enhance our teaching and open up the world for our children that will provide innovative up to date quality learning.

D. International School Food Policies

The following Executive Summary was distributed to the 'Lets Beat Diabetes School Accord' – a Committee of school Principal Representatives, and Health Agency personnel co-opted by the Counties Manukau District Health Board (CMDHB).

As a member of this School Accord, this information was very relevant to my Sabbatical study.

Executive Summary

There are very few countries that have central legislation that directly requires schools to provide healthy food environments however in many countries there is recognition that this is an important area and a lot of work is going on at the regional, local and school level.

- **Latvia** appears to be the only country that has a national policy banning junk food from schools. The policy was introduced in 2006 and banned all foods and drinks high in sugar, salt, artificial colourings and flavourings from kindergartens, primary and secondary schools.
- **France** has banned vending machines from schools.
- The **UK** has regulations governing nutritional standards that school caterers must follow when preparing school lunches but no current requirement for schools to have nutrition policies. The Food Standards Authority has developed a Strategic Policy Framework for governing Bodies to assist school develop effective policies. Government has also set up the School Food Trust, an independent body with the remit of transforming school food and food skills.
- **Japan** appears to recognise the value of healthy food for students and requires schools to provide proper meals.
- In the **US** federal food policy only relates to subsidised school meals otherwise state policy governs all other school food.
- Schools in **Australia** and **Canada** are also controlled by state, not federal policies.
- The **EU** is working on a fruit in schools project with the Agriculture Council but it will not be compulsory.
- There are a number of initiatives which encourage healthy school environments that are being used in a number of different countries eg. EPODE which is a community based programme and Nutrition Friendly Schools which has been developed and piloted by the WHO.

E. Physical Activity and Nutrition Programmes in Schools; Teacher's Attitudes and Programme Implementation

An Action Research Summary:

I wish to acknowledge Mr Morris Gambiza for his huge contribution in the compiling of this/his Sectional Report. Ref: School of Population Health University of Auckland (Tamaki).

Mr Gambiza reported this summary to the LBD School Accord of which I was a Principal representative.

Aims

The study aims were to investigate teachers attitudes towards school based physical activity and nutrition programmes, then analyse how the attitudes are related to the teachers' participation in programmes. The study also sought to identify important areas to consider when engaging teachers in school based programmes.

Goals

- a. Record and analyse attitudes of teachers to school based physical activity and nutrition programmes.
- b. Examine emerging themes regarding the engagement of teachers in school based physical activity and nutrition programmes.
- c. Investigate the relationships between teacher attitudes and participation in school based physical activity and nutrition programmes.
- d. Investigate what would facilitate better participation of teachers in the implementation of school based physical activity and nutritional programmes.

Teacher Attitudes

- Overall most teachers expressed positive attitudes towards programmes.
- Teachers believed that programmes benefit students' health and wellbeing.
- Schools were seen as an appropriate setting for programmes.
- Teachers noted that characteristics of schools impact on programme implementation.
- When implementing programmes teachers considered it important that they have control of key tasks that enhanced student participation and wellbeing.
- Teachers were keen to be active, were enthusiastic about programmes and sought to motivate students for maximum benefit.

Why Teachers Participate?

- Perceive benefit of programmes.
- View school as a place for learning whole life skills. Some feel that schools may be the only place some students can learn these skills.

Aspects important for teachers in programme implementation

- Family, community and agency support.
- School environmental factors including time and resource constraints.
- Teacher characteristics and attitudes towards programmes.
- Teachers' involvement in programme planning.
- Teachers' level of control in programmes.
- Properties of programmes, including timing of implementation.
- Student interest and input.
- Time and resources available.
- Principal as a Role Model

Key areas to consider when conducting programmes

- Programme characteristics
- Student input and interest
- Teacher
- Resources

Barriers

- Negative attitude and lack of motivation of teachers.
- Time constraints mainly due to a crowded curriculum.
- Lack of resources, particularly in low decile schools.
- Lack of family support
- Sustainability of key staff appointments/delegations.

Analysis of teachers responses identified four key elements to consider when engaging teachers in programmes, these were:

- The value teachers place on the benefit of a programme.
- The setting in which the programme is being implemented.
- Amount of control teachers have in programme implementation.
- Actions teachers are likely to take when implementing programmes.

These four factors were found to interact with each other in a predictive manner with the mediating effect of school decile and teaching experience. Through the interactions, attitudes expressed by teachers can be linked to their likely participation in programmes.

Sabbatical Study Outcomes/Proposals/Contributions

1. The visitation to Singapore Schools Report will be shared with the Manurewa Principals Association.
2. An Education Study Tour to Singapore will be undertaken by teaching staff of Manurewa West Primary School in 2010. Focus: Healthy School Programmes.
3. Manurewa West Primary School's Healthy School Focus will be reviewed in 2010 by its Health and Physical Education Curriculum team. Possible development will include Teacher's Professional Development; Physical Activity Equipment; Sustainability with leadership staff; Survey of staff responses to Healthy Schools implementation/programme.
4. Report to be provided to School Accord – Counties Manukau District Health Board and discussions invited with view to supporting Strategic Actions with Lets Beat Diabetes' programmes for Counties Manukau Schools.
5. Propose developing Healthy Eating Workshops for Manurewa West Primary School families each school term.
6. Review of the Schools Canteen Menu, to align with Health Nutrition Guidelines.
7. Action vegetable growing activities among classrooms/school garden.
8. Introduce school cooking classes (on a rostered basis) to prepare cost effective simple healthy food options.
9. Promote 'Lets Beat Diabetes' awareness with display of School Banners in the playgrounds.
10. Seek to have more ROLE MODEL Assemblies (Guest Personalities).

Conclusion

I wish to acknowledge with my appreciative thanks, the approval granted by the Teachers Study Awards Committee (Ministry of Education Wellington) to provide this valuable study and refreshment leave for Term 2, 2009.

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