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# Engaging students in activities beyond the classroom: a social-ecological exploration of primary school students' enjoyment of school-based activities

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## **Children's enjoyment of school-based physical activities beyond the health and physical education classroom**

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Emerging research is beginning to explore the important link between enjoyment and children's participation in physical activity (Moore, Yin, Duda, Gutin, & Barbeau, 2009; Salmon et al., 2005). Enjoyment stems from kinaesthetic experiences and the achievement of personal goals and is defined as "a positive affective response to an experience that reflects generalised feelings such as pleasure, liking, and fun" (p32, Scanlon & Lewthwaite, 1986). The positive association between enjoyment and behaviour change is emphasised by the Self-Determination Theory (SDT; Lawman, Wilson, Van Horn, Resnicow, & Kitzman-Ulrich, 2011). Self-Determination Theory outlines that if children enjoy participating in a particular physical activity (e.g. intrinsic motivation) this increases the likelihood of children adopting and maintaining participation in physical activity. Enjoyment has been shown to mediate involvement and participation in sport (McCarthy, Jones, & Clark-Carter, 2008) and physical activities (Dishman et al., 2005; Moore et al., 2009; Motl et al., 2001). Other studies have also recognised the link between enjoyment and correlates of physical activity including self-determination (Ntoumanis, 2002), motor skill proficiency (Okely, Booth, & Patterson, 2001), task orientation (Boyd & Yin, 1996), self-efficacy (Rovniak, Anderson, Winnett, & Stephens, 2002), goal setting (Rovniak et al., 2002) and perceived competence (Boyd & Yin, 1996; Kriemler et al., 2011).

Mediators (e.g. mechanisms of change) of children's behaviour such as enjoyment have been identified as important to evaluate the effects of school-based physical activity interventions (Kriemler et al., 2011). A lack of effective interventions targeting school children's physical activity participation could be due to the poor understanding of the mediators of behaviour change such as enjoyment (Baranowski & Jago, 2005). While a number of studies have explored the influences of children's age and gender on school-based physical activity participation, none of these studies have considered children's enjoyment. The purpose of the present study was to assess children's enjoyment of school-based physical activities beyond the health and physical education classroom, including the type of activities children enjoy, the extent of his/her enjoyment and across age levels.

### **Methods**

Ethical approval for the study was obtained from the University of Ballarat Human Research Ethics Committee, the Department of Education and Early Childhood Development (DEECD) in Victoria and permission was gained from the school principal. Children and their parents received a plain language statement outlining the research, along with a participant and parental consent form.

Within the study, the Lunchtime Enjoyment of Activity and Play (LEAP) questionnaire was administered to 281 children aged 8-12-years-old attending three primary schools in regional Victoria. The LEAP questionnaire was used to measure children's enjoyment of school-based physical activities beyond the classroom (Hyndman, Telford, Finch, Ullah, & Benson, 2013). The LEAP questionnaire is a reliable, context-specific questionnaire consisting of 39 items, categorised into social-ecological model levels of influence with components including: (1) intra-personal (individual), (2) inter-personal (social) and (3) physical environment and policy/organisation variables to identify the broader influences on children's enjoyment of school play and lunchtime activities (Salmon & King, 2010). Social-ecological models suggest that to understand children's physical activity behaviour it is necessary to consider multiple factors; intra-personal, inter-personal, physical environment and policy/organization (Salmon & King, 2010). Within the LEAP questionnaire, the intra-personal component includes six categories (20 items) examining children's enjoyment of activity during school breaks, basic

locomotion, imaginative activities, play-based movements, activity variations and sedentary behaviour. The inter-personal component consists of one category (two items) examining children's enjoyment of social activities. The physical environment and policy/organisation component included six categories (17 items) examining children's enjoyment of activities within different climatic conditions (warm and cool), man-made items, natural items, activity area size and activity within sheltered areas. All enjoyment items are rated on a five-point likert scale (1=very unhappy; 2=unhappy; 3=not sure; 4=happy; 5=very happy; Hyndman et al., 2013). A score is computed by calculating the average of each LEAP questionnaire category.

All questionnaires were coded and data was entered into the Statistical Package for the Social Sciences data analysis program. Normality of the data was checked by conducting a range of descriptive analyses. Data cleaning involved checking any unusual scores or missing values against the original survey and errors were amended to the spreadsheet. In order for comparisons to be made between the gender and age for the LEAP questionnaire categories independent t-tests were conducted.

## **Results**

### **Age-specific enjoyment of play variables**

#### *Children's enjoyment of intrapersonal (individual) play variables*

For the enjoyment category 'school break activities' 12-year-old children had significantly lower mean enjoyment scores in comparison to 8-year-old and 10-year-old children. The 12-year-olds also had significantly lower mean enjoyment for the categories 'basic locomotion' (in comparison to 8-year-olds), 'imaginative activities (in comparison to 8 & 9-year-olds) and 'play-based movement' (in comparison to 8 & 9-year-olds).

Within the 'imaginative activities' category, children's enjoyment of the item *using imagination* was significantly higher in 11-year-olds and 12-year-olds in comparison with 8-year-olds and 9-year-olds. The 12-year-old children's enjoyment was significantly lower for the individual enjoyment items of *playground activities* (compared with 8-year-olds; school break activities category), enjoyment of *being active* (compared with 10-year-olds; school break activities category), enjoyment of *jogging* (compared with 8-year-olds; basic locomotion category) and enjoyment of *hiding* (compared with 8 & 9-year-olds; play-based movement category).

#### *Children's enjoyment of interpersonal (social) play variables*

There was no significant age-specific difference for children's enjoyment of the 'social activities' category. Within the 'social activities' category, 12-year-old children had significantly lower enjoyment for the item examining children's enjoyment of *playing with friends* compared with all other age groups.

#### *Children's enjoyment of physical environment/policy play variables*

For the enjoyment category 'man-made items', 12-year-old children had significantly lower enjoyment in comparison to all other age groups. For the enjoyment category 'activity variation', 8-year-old children had significantly higher mean enjoyment scores in comparison to all other age groups. There were no other significant age-specific differences for physical environment/policy play categories.

Within the 'man-made items' category, children's enjoyment of *using sports equipment* and *using hard-surfaced areas* was significantly lower for 12-year-old children in comparison to all other age groups.

## **Gender-specific enjoyment of play variables**

### *Children's enjoyment of intrapersonal (individual) variables*

Females' mean enjoyment scores were significantly higher than males for the enjoyment categories 'imaginative activities', 'play-based movements', 'activity variation' and 'sedentary behaviour'. Males' mean enjoyment was significantly higher than females for the category 'cool conditions'.

Examining the individual enjoyment items, females' mean enjoyment was significantly higher than males for the *playing at lunchtime, sitting, using imagination, resting, walking, climbing, hiding, sliding and creating*.

### *Children's enjoyment of interpersonal (social) variables*

There were no significant differences between males' and females' enjoyment within the 'social activities' category. Females had significantly higher mean enjoyment of the individual item examining enjoyment of *playing with friends*.

### *Children's enjoyment of physical environment/policy variables*

Females' mean enjoyment scores were significantly higher than males for the enjoyment categories 'man-made items' and 'sheltered activities'. Males' mean enjoyment was significantly higher than females for the category 'cool conditions'.

Examining the individual enjoyment items, females' mean enjoyment was significantly higher than males for *playing with sports equipment, activities with natural features, hard surfaces, movable equipment from home, changing activity location and changing activities*. In contrast, males' mean enjoyment was significantly higher for *playing in cold conditions and playing in wet conditions*.

## **Discussion**

The unique contribution this study makes to the international literature is that this is the first study to report the influence of age and gender on primary school children's enjoyment of school-based physical activities beyond the classroom. The findings from the study suggest that younger children and females tend to exhibit significantly higher enjoyment of school physical activities across a range of social-ecological model categories.

Similar to the present study of enjoyment of physical activities declining with age, findings from a 12-month intervention revealed that an increased age had a negative association with children's moderate to vigorous physical activity (MVPA) and vigorous physical activity (VPA; Ridgers, Stratton, Fairclough, & Twisk, 2007). Additionally, a study also discovered that older children participate in a higher proportion of sedentary behaviour or light accelerometer-determined physical activity than younger children (Lopes, Vasques, Pereira, Maia, & Malina, 2006). In the present study, 12-year-old children's enjoyment of activities was significantly lower for basic locomotion (e.g. jogging), man-made items (e.g. using sporting equipment), school break activities (e.g. being generally active at recess), play-based movements (e.g. hiding) and playing on hard-surfaced areas (e.g. courts). In contrast to these studies, researchers examined the influence of themed weekly activities (e.g. a fitness circuit week, obstacle course week, frisbee week) on children's pedometer-determined physical activity, revealing that older children had significantly higher steps than younger children (Stellino, Sinclair, Partridge, & King, 2010). In the current study older primary school children's enjoyment of imaginative play activities was significantly higher than younger children. This suggests that the older children may need to be imaginative with their physical

activities if they have become bored of facilities.

It is important that teachers are aware of the influences on primary school children's enjoyment, as it has been reported that there is an environmental disconnect between primary and secondary school that may be contributing to a decline in physical activity as children reach secondary school (Brady, 2004; Dollman, Norton, & Norton, 2005; Pate et al., 2007). The lack of connection from primary to secondary school environments for physical activity (Haug, Torsheim, & Samdal, 2008) could be counteracted if teachers are aware of the areas of physical activity that are influenced by age and gender. Teachers and school decision makers can intervene to counteract specific or concerning discrepancies in children's enjoyment of school-based physical activities.

Gender is the most common demographic variable that has been investigated as a correlate to children's physical activity (Ridgers, Salmon, Parrish, Stanley, & Okely, 2012). A major review of the intra-personal (individual) correlates of children's physical activity between January 1990 and April 2011 revealed that being male correlated with physical activity participation across 31 studies (Ridgers et al., 2012). This finding of males being more active than females supports previous literature reviews of pre-school (Hinkley, Crawford, Salmon, Okely, & Hesketh, 2008), childhood (Sallis, Prochaska, & Taylor, 2000) and adolescence (Van Der Horst, Paw, Twisk, & Van Mechelen, 2007). However, within the present study females possessed a significantly higher level of enjoyment for the majority of school-based physical activity categories including activity variation, sheltered activities (e.g. indoors), imaginative activities, using man-made items (e.g. sports equipment), activities with natural features (e.g. trees, gardens) and on hard-surfaced areas (e.g. sport courts). Although supporting previous studies, females possessed a significantly higher score than males for sedentary behaviour (e.g. sitting). It is possible that females' enjoyment of physical activities may not convert to physical activity participation.

It is suggested that females often view physical activity periods as an opportunity to socialise (Pellegrini & Holmes, 2006), therefore promoting physical activities in which females can be social and physically active should be a high priority. The present study supports this finding with females possessing significantly higher enjoyment for social activities. Further research is warranted to examine the link between females' enjoyment and participation in physical activity. In contrast, males had a significantly higher enjoyment of activities in cool and wet conditions compared with females. Due to the study being conducted in the middle of Winter where the male-dominated Australian rules football is predominant, such a finding is expected. Future research is required to examine the correlates of boys' and girls' physical activity individually, rather than simultaneously (Ridgers et al., 2012).

Until recent decades, previous research had not investigated the context and broader determinants within which health behaviour occurs, rather focusing on the individual influences on physical activity behaviour (Stevenson & Burke, 1992; Stokols, 1996). These broader influences on health behaviour are linked to the social-ecological model of human behaviour, which emphasises a need for a 'person-environment' fit (Stokols, 1996), implying that there is an association between the intra-personal (individual) level, inter-personal (social) environment level, physical environment level and policy level influences. Many health behaviour models do not show the interactions between the environmental factors and can miss vitally important influences on children's physical activity. Knowledge of these multiple influences identified in the present study via the LEAP questionnaire are important to guide future school-based physical activity interventions. The present study provides insight for teachers of the multiple influences on children's enjoyment of school-based physical activities beyond the classroom. Teachers can use the results of this study to consider tailoring school environments to ensure that age and gender-specific enjoyment of physical activities are accounted for. Attempts to modify physical activity behaviour at a single level on its own (e.g. social activities) are often resisted by other environmental levels of influence (Salmon & King, 2010). There are many

factors within the environment that can conspire against changes that are applied addressing a single environmental level (Salmon & King, 2010). Therefore, successful physical activity programs must not only modify an individual's physical activity participation, but also the multiple level environmental context (e.g. evaluated via the LEAP questionnaire) in which physical activities are taking place (Salmon & King, 2010).

## Conclusion

In summary, this study revealed that primary school children's enjoyment of school-based physical activities declines with age. Older children had significantly lower enjoyment for a range of physical activities including basic locomotion, using hard surfaced areas, sports equipment, play-based movements, being active and school break activities. It was discovered that females had significantly higher enjoyment compared to males for the majority of school-based physical activities. In contrast, males possessed significantly higher enjoyment for physical activities within cool and wet conditions. Teachers and school decision makers can employ the social-ecological insight of children's age and gender-specific enjoyment to guide future school-based physical activity planning and design.

## References

- Baranowski, T., & Jago, R. (2005). Understanding the mechanisms of change in children's physical activity programs. *Exercise & Sport Sciences Reviews*, 33(4), 163.
- Boyd, M. P., & Yin, Z. (1996). Cognitive-affective sources of sport enjoyment in adolescent sport participants. *Adolescence*, 31(122), 383-395.
- Brady, F. (2004). Children's organized sports: A developmental perspective. *Journal of Physical Education, Recreation & Dance*, 75(2), 35-41.
- Dishman, R. K., Motl, R. W., Sallis, J. F., Dunn, A. L., Birnbaum, A. S., Welk, G. J., . . . Jobe, J. B. (2005). Self-management strategies mediate self-efficacy and physical activity. *Am J Prev Med*, 29(1), 10-18.
- Dollman, J., Norton, K., & Norton, L. (2005). Evidence for secular trends in children's physical activity behaviour. *British Journal of Sports Medicine*, 39(12), 892-897; discussion 897.
- Haug, E., Torsheim, T., & Samdal, O. (2008). Physical environmental characteristics and individual interests as correlates of physical activity in Norwegian secondary schools: The health behaviour in school-aged children study. *International Journal of Behavioral Nutrition Physical Activity*, 5(1), 47-56.
- Hinkley, T., Crawford, D., Salmon, J., Okely, A. D., & Hesketh, K. (2008). Preschool children and physical activity: a review of correlates. *American Journal of Preventive Medicine*, 34(5), 435-441.
- Hyndman, B., Telford, A., Finch, C. F., Ullah, S., & Benson, A. C. (2013). The development of the Lunchtime Enjoyment of Activity and Play (LEAP) questionnaire. *Journal of School Health*, 84(4), 256-264.
- Kriemler, S., Meyer, U., Martin, E., van Sluijs, E. M., Andersen, L. B., & Martin, B. W. (2011). Effect of school-based interventions on physical activity and fitness in children and adolescents: a review of reviews and systematic update. *British Journal of Sports Medicine*, 45(11), 923-930.
- Lawman, H. G., Wilson, D. K., Van Horn, M. L., Resnicow, K., & Kitzman-Ulrich, H. (2011). The relationship between psychosocial correlates and physical activity in underserved adolescent boys and girls in the ACT trial. *Journal of Physical Health*, 12(1), 116-129.

- Lopes, V. P., Vasques, C., Pereira, B., Maia, J. A. R., & Malina, R. M. (2006). Physical activity patterns during school recess: a study in children 6 to 10 years old. *International Electronic Journal of Education*, (9), 192-201.
- McCarthy, P. J., Jones, M. V., & Clark-Carter, D. (2008). Understanding enjoyment in youth sport: A developmental perspective. *Psychology of Sport & Exercise*, 9(1), 142-156.
- Moore, J., Yin, Z., Duda, J., Gutin, B., & Barbeau, P. (2009). Measuring enjoyment of physical activity in children: validation of the Physical Activity Enjoyment Scale. *Journal of Applied Sport Psychology*, 21(1), 116-129.
- Motl, R. W., Dishman, R. K., Saunders, R., Dowda, M., Felton, G., & Pate, R. R. (2001). Measuring enjoyment of physical activity in adolescent girls. *American Journal of Preventive Medicine*, 21(2), 110-117.
- Ntoumanis, N. (2002). Motivational clusters in a sample of British physical education classes. *Psychology of Sports & Exercise*, 3, 177-194.
- Okely, A., Booth, M., & Patterson, J. (2001). Relationship of physical activity to fundamental movement skills among adolescents. *Medicine & Science in Sports & Exercise*, 33, 1899-1904.
- Pate, R. R., Saunders, R., Dishman, R. K., Addy, C., Dowda, M., & Ward, D. S. (2007). Long-term effects of a physical activity intervention in high school girls. *American Journal of Preventive Medicine*, 33(4), 276-280.
- Pellegrini, A. D., & Holmes, R. (2006). The role of recess in primary school. In D. Singer, R. Golinkoff & K. Hirsh-Pasek (Eds.), *Play=learning: How play motivates and enhances children's cognitive and social-emotional growth*. Oxford, UK: Oxford.
- Ridgers, N. D., Salmon, J., Parrish, A. M., Stanley, R. M., & Okely, A. D. (2012). Physical Activity During School Recess: A Systematic Review. *American Journal of Preventive Medicine*, 43(3), 320-328.
- Ridgers, N. D., Stratton, G., Fairclough, S. J., & Twisk, J. W. (2007). Long-term effects of a playground markings and physical structures on children's recess physical activity levels. *Preventive Medicine*, 44(5), 393-397.
- Rovniak, L. S., Anderson, E. S., Winett, R. A., & Stephens, R. S. (2002). Social cognitive determinants of physical activity in young adults: a prospective structural equation analysis. *Annals of Behavioral Medicine*, 24, 149-156.
- Sallis, J. F., Prochaska, J. J., & Taylor, W. C. (2000). A review of correlates of physical activity of children and adolescents. *Medicine & Science in Sports & Exercise*, 32(5), 963-975.
- Salmon, J., Ball, K., Crawford, D., Booth, M., Telford, A., Hume, C., . . . Worsley, A. (2005). Reducing sedentary behaviour and increasing physical activity among 10-year-old children: overview and process evaluation of the 'Switch-Play' intervention. *Health Promot Int*, 20(1), 7-17.
- Salmon, J., & King, A. C. (2010). Population approaches to increasing physical activity and reducing sedentary behavior among children and adults. In D. Crawford, R. W. Jeffery, K. Ball & J. Brug (Eds.), *Obesity epidemiology: from aetiology to public health* (2nd ed.). New York, N.Y.: Oxford University Press.
- Scanlon T.K., & Lewthwaite, R. (1986). Social Psychological Aspects of Competition for Male Youth Sport Participants: IV. Predictors of Enjoyment. *Journal of Sports Psychology*, 8(1), 25- 35.
- Stellino, M. B., Sinclair, C. D., Partridge, J. A., & King, K. M. C. (2010). Differences in children's recess physical activity: recess activity of the week intervention. *Journal of School Health*, 80(9), 436-444.

- Stevenson, H. M., & Burke, M. (1992). Bureaucratic logic in new social movement clothing: the limits of health promotion research. *Canadian Journal of Public Health. Revue canadienne de sante publique*, 83, S47.
- Stokols, D. (1996). Translating social ecological theory into guidelines for community health promotion. *American journal of health promotion*, 10(4), 282-298.
- Van Der Horst, K., Paw, M. J., Twisk, J. W., & Van Mechelen, W. (2007). A brief review on correlates of physical activity and sedentariness in youth. *Medicine & Science in Sports & Exercise*, 39(8), 1241-1250.