EVERYBODY IN:

A REPORT ON THE APPLICATION OF NEW GAMES IN A SCHOOL SETTING

JULY 2010

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THE PROJECT PARTNERS

Dale Le Fevre is the director of New Games Ltd, a social enterprise that is engaged in teaching New Games to teachers and pupils. New Games are cooperative group games for all ages, sizes and abilities. Dale has been involved with New Games since 1975 (in England since 2004), and during that time has seen the positive effects it has had on people's lives, including adults. His latest book is The Spirit of Play (2008) and DVD is Complete Cooperative New Games (2010). Other creations can be seen on his web site: www.inewgames.com

Perry Else is the Course Leader for the Children and Playwork Degree Course at Sheffield Hallam University. He is a playwork author with chapters in Playwork Voices (2007), Foundations of Play work (2008) and The Value of Play (2009) as well as his own publications as part of the Ludemos Consultancy (www.ludemos.co.uk). Perry has contributed to policy agendas and quality assessment initiatives in children's work over many years and involving many national agencies.

Claire Wolstenholme, Centre for Education and Inclusion Research, acted as adviser to the project and helped design the research tools and carry out data processing.

Field Research was carried out by Level 5 students from the Children and Playwork Degree Course at Sheffield Hallam University.

OUTLINE OF THE PROJECT

The purpose of the Project was to investigate, through quantitative and qualitative research, the outcomes of playing New Games with primary school pupils from Year 4 (Key Stage 2).

SUMMARY

The project involved working with a partnership school in the North of Sheffield to carry out an intervention programme with field testing before and after the intervention. Two classes of thirty pupils were involved, one as the target group, receiving the New Games programme instead of the usual sports session, the other as a control. A series of tests and questions were designed in line with the Framework Model (explained below) to assess a range of physical skills and attributes as well as the pupil's self evaluation of their mood and relationship to others.

As with many small scale studies, conclusions were reached on the validity of the approach within the setting, though agreeing an 'overall truth' applicable to all settings is not possible on such a small scale.

Initial conclusions showed a small but significant benefit was gained by the target group who were involved in the New Games Approach. As a whole, the target group showed an improvement in their stamina over the period of the programme; this improvement was more marked in target group boys who did better than control boys. In the tests for coordination and balance, target group girls did better than control group girls.

The pupils were interviewed using a range of questions for them to assess their feelings on a range of issues looking at self esteem and their relationships with others. Overall the findings were varied due to a number of factors, however, the largest change for the control group seemed to be that they were less inclined to 'share their feelings with those closest to them' than the target group. When

thinking about friends and classmates, there was a slight increase in the target group reporting that they ‘don’t mind who they played with’.

Teachers were asked to comment on classroom behaviour as a result of the programme. They reported about the same or slightly better on response to most questions as a result of the New Games intervention. However the most dramatic responses were for two important questions:

> Have students learned to cooperate more during the New Games sessions?
>
> Are students cooperating more or less in the classroom since the start of the programme?

Class teachers reported that cooperation was 'Much better' as a result of the programme.

The most significant benefits were noted for individuals, for whom teachers reported key changes. Examples include an overweight pupil, who had felt excluded from games, was, at the end of the study more active, better involved with their peer group and more willing to join in active games sessions. Another pupil was assessed to have a 'more positive attitude toward others and more willing to talk about problems'.

Though noted with caution due to extremely low sample sizes, Asian pupils in the target group did better on the stamina test compared with Asian control group pupils. Black target group pupils did better on all three tests than Black control group pupils.

Overall it may be concluded that in this setting, compared with a traditional games session, the New Games approach was better at improving stamina of children as a whole, and was better at integrating minority groups and children who were more overweight into their social group. These findings were consistent with those of Mackett (2004) who showed that children who are enjoying their physical activity were more willing to do it and for longer than children doing traditional sporting games. The additional benefits of play for social interaction and friendliness have long been reported anecdotally by teachers and other children’s work practitioners.

THANKS

The researchers would like to thank all the pupils assistants, admin staff and teachers of the primary school used in this research. Everyone in school engaged with the project in a positive and helpful manner and it was a pleasure to work there with the children.

WHY THE PROJECT STARTED

Many reports have commented on the quality of children's lives in the UK in the 21st century. UNICEF (2007) reported that UK children were the unhappiest in the westernised world across a range of indicators including self image, experience of bullying and relationships with families and peers. Children's health was increasingly at risk, the number of children in England with a body mass index over 30 (the definition of obesity) has tripled in the last 20 years (Crown Copyright 2003). Overall children in 2000 were 70% less active than 30 years previously – less than 50% meet the recommended minimum levels of activity; at least one hour of moderate level activity every day. The evidence is that 70% of children give up all physical activity on leaving school, often due to self perceived assessments of their own ability, i.e. not being as good as everyone else (Lee, Carter and Xiang 1995).

Other reported effects of the lack of play in children's lives included:

- decreased resilience to deal with stressful or traumatic events (Goleman, 1996)
- reduced brain growth and flexibility (Gopnik, Meltzoff and Kuhl, 1999; Pellis and Pellis, 2009)
- reduced physical ability in tasks (Lester and Russell, 2009)
- decreased social skills, causing difficulties in negotiating social situations (Smilansky, 1968)
- difficulty in assessing personal risk (Gill, 2007)

In April 2010 the British Psychological Society reported that adults who had engaged in more creative play as children were more likely to have a healthy diet and take regular exercise. Conversely adults reporting environmental restrictions on play (e.g. having less time to play) were more likely to be overweight and have less healthy lifestyles

The World Health Organisation and Food and Agriculture Organisation (USA) concluded in 2002 that there was 'convincing evidence' that regular physical activity reduced obesity and that sedentary lifestyles increased it.

In 2004, Mackett published findings of a long term study which showed that 'walking and playing provide children with more physical activity than most other activities'. When children were enjoying what they were doing they were more engaged and used more calories per hour.

Environmental issues have in impact but were not considered in this study. For example there was more traffic on the road; in the 1970s, 90% of primary school children walked to school, 90% now travel by car.

In summary, children's lives were increasingly affected by the lack of playful exercise in their lives.

The Research Aims

It was planned that a six month intervention, using the New Games materials and approaches would be used with a class in a primary school in North Sheffield. It was anticipated that the benefits of the intervention would be many fold. What the project attempted to show was that through playing New Games, pupils would experience:

- Improved coordination and physical ability
- Better general health and reduced obesity
- A better self image, since all will be able to participate successfully in the activities
- Better academic performance through flexibility of brain function, creative problem solving and improved learning skills such as listening and following directions
- Improved cooperation and respect for others
- Better understanding of teamwork skills in a group

Pupils were expected to develop a high motivation to participate, picking up the benefits in the process.

The Research Philosophy

The project made use of the Integral Play Framework (see Appendix 1). The model proposes that children, as well as experiencing the physical world of actions and roles, are influenced by the internal world of thoughts and beliefs; a balance of these worlds is necessary to work with the whole child. That is, in order to help the child physically, we also needed to recognise that the child's motivation and relationship with others affected their willingness and ability to participate in games.

Methodology

The project involved working with a partnership school in a large, northern, inner city primary school with around four hundred pupils on roll. The school has a very high proportion of ethnic minority students, who make up the majority of the intake. The area of Sheffield where the school is located has a higher than average level of unemployment and indicators of health place it in the lower quartile in the city; leading to an average life expectancy of ten years less than more affluent areas of the city. The area has a higher than average number of pupils with Special Educational Needs.

Two classes of thirty pupils from Year 4 (Key Stage 2, eight rising to nine years of age) were involved, one as the target group, receiving the New Games programme instead of the usual sports session, the other as a control. The school was chosen for the age and range of pupils, and as it was felt that the community would be unaware of the nature of the activities being used in the programme; i.e. they would be new to them.

The pupil sample was identified with the support of the school and the necessary permissions for inclusion in the research agreed with children and family members. Two classes in the same school in the same year were selected as target and control groups to limit the influence of outside factors.

A series of tests and questions were designed in line with the Framework Model (explained below) to assess a range of physical skills and attributes as well as the pupil's self evaluation of their mood and relationship to others.

The case study approach was chosen as it provides information pertinent to the chosen setting and is a multi method tool for ascertaining a 'rich picture' of data for that setting. From that data, conclusions may be reached on the validity of the approach within the setting. By using a spread of methods, some common conclusions may be reached, though reaching an 'overall truth' applicable to all settings will be difficult on such a small scale.

The research team was made up of experts with the full range of professional, research and play and games backgrounds relevant to the successful completion of the project. The project involved five distinct phases in the first year:

Methods employed for data collection were:

- A survey of pupils self image. A short questionnaire was produced to administer with pupils asking questions relating to their sense of self and individual ways of dealing with particular situations.
- A series of three basic physical fitness tests designed to measure pupils; balance, coordination and stamina.
- Any negative behaviour from pupils was to be measured by tally through researcher's/teacher observations and teacher classroom assessments

Details of the Tools are shown in Appendix 2.

The New Games intervention was then run in place of pupils 'normal' physical education with the target group of students, whilst the control group continued with their physical education as scheduled.

Pilot Assessment and Evaluation

The first assessment was seen as a pilot to test the process and the assessment tools, then to form a baseline assessment for both the control and target groups. Assessments were carried out by student researchers trained by academics. Adjustments to the research tools and programmes were made at this stage. Details are in Appendix 2.

The Intervention Programme

The intervention activities were designed by Dale Le Fevre using his extensive knowledge of New Games. These included a variety of activities to develop the children's bodies, work with others, respect for others, and self esteem. In summary 50% of the time were active games, 25% moderately active, 25% low activity games. The programme was to be led by Dale Le Fevre initially, then as skills were learned by practitioners, on a diminishing basis over ten weeks. In fact the programme ran for 20 weeks, led mainly by Le Fevre.

These games were not the typical activities like football or cricket, but were cooperative New Games. What that means is that everyone was actively able to participate playing the games – unlike traditional games – regardless of age, size, ability level or gender. While it can be argued that those also applicable to football, cricket, and the like, in fact, it is not true. Many, if not most, pupils play these traditional games only superficially while the faster, more skilled, more aggressive players control the play. Eventually the less skilled and lower players drop out.

In New Games, there are no real experts because few children have played the games before, and even after they become familiar with the games, the whole emphasis is different, even when the element of competition is present. For one thing, it does not matter who wins. No big deal is made about winning, so players are free to enjoy the game without worrying about winning the game. They are not afraid they will be criticised by teammates for ‘blowing’ a game, as while winning may be an element of some of the games, it is not more important than the players. Often during the

course of play, players change sides or roles, so the elements of competition and winning are reduced, allowing those who are normally not viewed as athletic a chance to play and enjoy the game.

As a consequence, players who normally do not get the chance to do so, increase their physical skills by being an active part of the games. This has other positive consequences, including the increase of self esteem and feeling of self worth for those who are normally left out of games, or whose role is normally minimised. Empirically, it would seem that those children participating would lower their tendency towards obesity, bullying, and negative social behaviour. The reason for the study was to assess if these beliefs can be verified through research.

Beyond this, even the players who are normally able to do very competitive games are given a breather with New Games. Since they do not have to be so concerned about winning, they can enjoy the games rather than be consumed by winning them. The stress level is reduced. While they can still play to win, it does not matter if they do not win. They change roles or sides and keep playing. In typical traditional sports, there may be a negative feeling about losing. The winning side may even taunt the losers. That never happens in New Games because simply playing is winning.

The New Games used in the study can be found in the DVD *Complete Cooperative New Games* and in the book *Best New Games* by Dale Le Fevre (http://www.inewgames.com/newgamesproducts.htm).

In practice, the children adapted well to the new regime. As with any new activity or member of staff there was a period of getting to know each other; at first the leader found the children did not follow the rules of New Games, but quickly adjusted to the format. One amendment made was to introduce a game of 'Rock, Paper, and Scissors' to resolve any disputes over getting 'caught' by the others.

The Future

The results of this pilot project while positive are too small scale to hold any general truths for the wider population. However, it was noted that the findings echo the comments of many New Games participants over the years, that these games increase fitness, sharing and community spirit.

After the pilot project, we anticipate expanding the research project. Options include more classes at a single school or possibly to expand the research involving a number of schools. Our long range goal would be to do a 3-5 year project with 10 schools with extended follow up to determine the longer-lasting effects of the programme.

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APPENDIX 1 – THE INTEGRAL PLAY FRAMEWORK

RATIONALE

- All children and young people need to play. The impulse to play is innate. Play is a biological, psychological and social necessity, and is fundamental to the healthy development and well being of individuals and communities.
- Play is a process that is freely chosen, personally directed and intrinsically motivated. That is, children and young people determine and control the content and intent of their play, by following their own instincts, ideas and interests, in their own way for their own reasons.
- The role of the [adult] is to support all children and young people in the creation of a space in which they can play. [1]

MODEL – INTEGRAL PLAY FRAMEWORK

Building on the work of philosopher Ken Wilber,[2] this framework shows that the internal world of feelings for the child is as relevant as the world of objects shared with others. Figure 1.1 shows the Integral Play Framework[3] and balances the experiences of the child in the tangible world of structures with the insubstantial world of feelings and beliefs. As children are playing they are using their bodies to move through and experience the world, either solitary or with others. Those sensations are processed internally and inform the child's self awareness, feelings and beliefs, which may be shared with others.

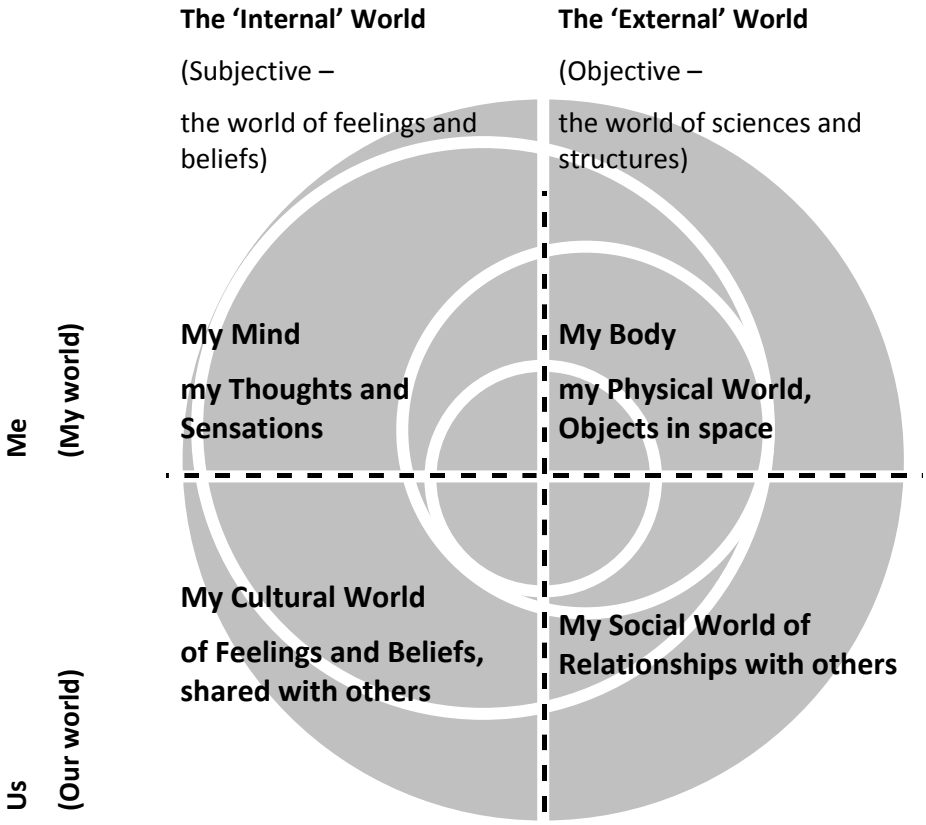
For example; a group of children are playing chase, a physical game involving running around on the ground and over obstacles to evade capture. Ethan is 'it'; he is trying hard to pass the role to another and races round energetically. Initially frustrated that he cannot catch the others, he becomes elated when he tags his friend Sohail and manages to escape onto a high platform. Later he and Sohail talk about the game and what it felt like to be 'on' and what it was like when they were running away.

[1] Based on the Playwork Principles (2005) Play Wales

[2] For more information, see Ken Wilber (2000), Integral Psychology Boston: Shambhala. In brief, Wilber has studied both eastern and western philosophies and sciences and has produced a model that shows the complimentary and integrative qualities of these approaches.

[3] Perry Else (1998, 2007) Therapeutic Playwork Reader one Southampton: Common Threads

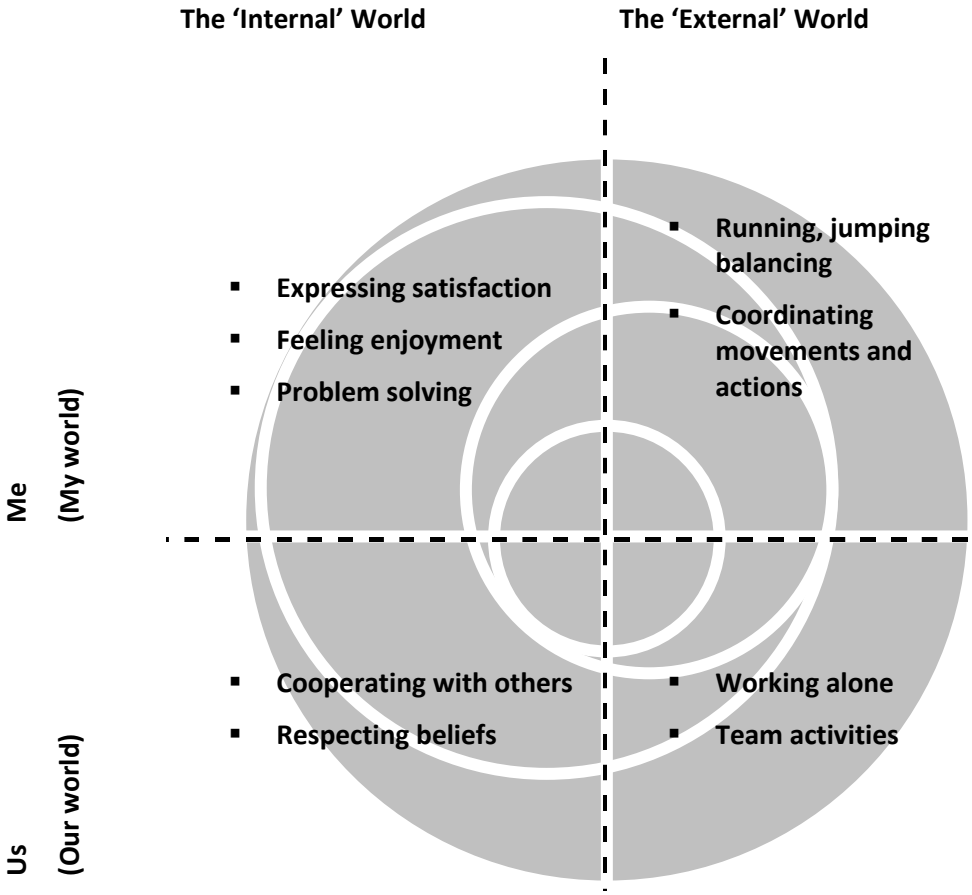
FIGURE 1.1: THE INTEGRAL PLAY FRAMEWORK



In providing interventions for children's play, the role of the adult is to support all children and young people in the creation of games in which they can play freely. Using the model we can see that we need to provide a variety of opportunities for each element; see Figure 1.2.

For example, Millie may play by herself, skipping. She gets satisfaction and achievement from her activity. When her friend Ariana arrives she invites her to join the game and then between them a new game develops that is different to what Millie was doing alone. Sobiha arrives and finding the skipping difficult, the girls use the skipping rope as a boundary to create an island for the next, imagined game.

FIGURE 1.2: PROVIDING FOR CHILDREN'S PLAY



No weighting was made of the elements, nor was an attempt been made to say which were mandatory and which optional. From a holistic value perspective all the elements should be present all the time, though it is recognised that this is hard to achieve given current resource allocations.

Perry Else, September 2008

APPENDIX 2 – RESEARCH TOOLS

The research tools were tested in the field and developed as a result of that testing. Comments are made on the effectiveness of the tools.

Assessment	Tool	Comments
A better self image will be measured through the use of questionnaires with children	Questionnaires with children 2.1	Worked well
Improved cooperation and respect for others will be assessed through questionnaires and teacher observations	Questionnaires with children 2.1 Teacher observations 2.3	Worked well Limited use due to lack of consistency
Improved coordination and physical ability will be tested through ABC activities; Agility, Balance and Coordination	Two tests – see 2.2 • Balance test • Coordination	Worked well after amendment
Better general health and reduced obesity will be assessed through a simple health check using objective criteria	Due to ethical considerations, the planned health check was replaced with a stamina test – see 2.2	Stamina test worked well
Better understanding of teamwork skills will be assessed through researcher observations	Researcher observations of intervention programme	Limited use due to lack of consistency

2.1 New Games Research Pilot Project – Researcher Script for Self Image Questionnaire for Children

You are A Boy (A) A Girl (B) How old are you? Aged 7 8 9 10 11 12 13 14

These questions are to help us find out a little about how you feel right now. We are all different and have our own feelings; there are no right or wrong answers. So please let us know the box that best describes you right now.

D **How often do you feel happy** [Feeling enjoyment]:

- ☐ I feel happy most of the day (D1)
- ☐ I feel happy for parts of the day (D2)
- ☐ I am occasionally happy for some of the day (D3)
- ☐ It takes a lot for me to feel happy about things (D4)

E **When happy with something I usually** [Expressing satisfaction]:

- ☐ Let everyone else know how I feel about it (E1)
- ☐ Share my feelings with those closest to me (E2)
- ☐ Tell my special friend how I feel (E3)

- ☐ Am satisfied to keep my feelings to myself (E4)

F **When faced with a problem I usually** [Problem solving]:

- ☐ Get on with sorting it without too much difficulty (F1)
- ☐ Have a go but get help if I get stuck (F2)
- ☐ Ask for help from a friend or adult then sort it out myself (F3)
- ☐ Wait to be told what to do by a friend or adult (F4)

G **When working with a group of other children I usually** [Cooperating with others]:

- ☐ Work with everyone without too much difficulty (G1)
- ☐ Join in but tend to stay with my friends (G2)
- ☐ Always stay with a special friend to do things (G3)
- ☐ Prefer to work on my own (G4)

And now the last question…

H **Thinking about your friends and class mates** [Respecting beliefs]:

- ☐ I don't mind who I play with (H1)
- ☐ I prefer to play with my own friends, but we let other people join in (H2)
- ☐ I prefer to play with my own friends (H3)
- ☐ I don't like it when new people try to join in my games (H4)

Thank you!

2.2 Tests with the children

All tests took place in the school hall or playground and replaced a planned physical activity session.

The pupils were in groups of five or six for ease of explanation and to help keep pupils motivated (not waiting too long). That required six researchers to operate the tests, with an academic 'fire fighting' and offering support.

Ideally small groups would be used in one large space, with a smaller interview room close by. In the field these conditions were hard to establish and researchers did the best they could. The school hall was a large space, big enough to contain the groups, but the noise levels were difficult at times. Also privacy was needed to complete the questionnaires, which required taking the pupils into different spaces. One of the tests (coordination) would work better with amplified music, which again suggests a small group approach may be better. In practice in a working school that was not possible as it would be too disruptive to other classes.

I Balance test

Exercise: Balance	
Equipment/conditions • One seat bench 4m long, upside down to create a beam 10cm wide, approx 30cm off the floor • Recorder • Tally sheet	Performance criteria • Children to cross the bench, on the beam, one foot in front of the other (step by step) • No contact to be made with other children or support objects (walls etc)
Directions One child to prepare to balance at a time. Others to cheer/support On the recorder's instruction child to start and keep going as long as possible Ideally one recorder per child, noting the number of steps taken before they unbalance	Repeat twice (2x), recording number of steps for each attempt across the beam

Child	1st I1	2nd I2
1.		
2.		

J Coordination tennis ball

Exercise: Coordination	
Equipment/conditions • A minimum of 1.2m clear space per child • 1 tennis ball per child • Tape to indicate 'home' on the floor • Timer • Recorder • Music player or metronome set to 60 /120 beats	Performance criteria • Use of metronome, or recoded music at 60 or 120 beats suggested • Child stays on 'home' spot • Ball is tossed approx 30cm above head height and caught every second on the beat (or second beat at 120 beats /min) for one minute duration
Directions Two children to prepare to exercise at the same time. Stand on the home, holding the ball On the recorder's instruction both to start at the same time	Repeat twice (2x), recording number of catches for each child over a minute

Child	1st J1	2nd J2
1.		
2.		

K Stamina 5 metre shuttle run

Exercise: Stamina	
Equipment/conditions • A minimum clear space of 7m deep and 10 m wide • Mark off two lines 5m apart, with 1m clearance at ends • Place four cones or similar at 1m intervals along the 5m line • Repeat 1.5 m away from first line • Timer • Recorder	Performance criteria • Child completely passes behind each line • Cones are left undisturbed • Child moves at the speed they feel comfortable with • Movement continues for 1 minute
Directions Five children to prepare to exercise at the same time. • On the recorder's instruction all to start at the same time • Child runs from one line to the other, swerving through the cones, first left then right etc • Complete as many laps as possible in one minute	Repeat 1x, recording score of each one as they complete circuits (i.e. how many circuits in one minute) Note: if pupils do not cross the line or if they knock cones, ask them to complete the circuit correctly

Child	K1 1st	2nd if time allows
1.		
2.		

L Researcher observations of intervention programme [Not used due to lack of researcher time]

Negative responses = refusal to take part, refusal to work with another child, refusal to follow requests, arguing, fighting

Child	Negative responses Tally system ~~////~~
1.	
2.	

2.3 New Games Research Pilot Project: QUESTIONS FOR TEACHERS

We'd like to record your views on any changes experienced by you in the pupils since the introduction of the New Games Programme in October.

[Write additional comments below the boxes, if desired.]

1A. What changes if any have there been to how children listen to you or others since the introduction of the New Games Programme in October?

☐ Much worse ☐ A Little Worse ☐ About the same ☐ A little better ☐ Much better

1B. How did this change in listening if any carry over to the classroom, positively or negatively?

☐ Much worse ☐ A Little Worse ☐ About the same ☐ A little better ☐ Much better

2A. During the New Games sessions, did children follow directions better, including following the rules, at the end of the programme than at the beginning?

☐ Much worse ☐ A Little Worse ☐ About the same ☐ A little better ☐ Much better

2B. Did their following directions carry over to the classroom positively or negatively?

☐ Much worse ☐ A Little Worse ☐ About the same ☐ A little better ☐ Much better

3A. Have the children shown more cooperation during the New Games sessions at the end as opposed to the beginning?

☐ Much worse ☐ A Little Worse ☐ About the same ☐ A little better ☐ Much better

3B. Have the children carried over the cooperation or lack of it to the classroom?

☐ Much worse ☐ A Little Worse ☐ About the same ☐ A little better ☐ Much better

4A. How has the confidence of students changed during the games sessions since October?

☐ Much worse ☐ A Little Worse ☐ About the same ☐ A little better ☐ Much better

4B. Thinking particularly those who are not athletic or coordinated, has the confidence of students changed during the games sessions since October? How?

☐ Much worse ☐ A Little Worse ☐ About the same ☐ A little better ☐ Much better

4C. Has any change carried over to the classroom?

☐ Much worse ☐ A Little Worse ☐ About the same ☐ A little better ☐ Much better

5. How has the programme affected students' academic performance since it began?

☐ Much worse ☐ A Little Worse ☐ About the same ☐ A little better ☐ Much better

6 A. In the classroom, are there any other factors that have changed that appear to be due to the New Games sessions?

6B. What other significant factors if any that have changed positively or negatively since October? (If you need more room, use the reverse of this paper)

☐ Positively ☐ Negatively

7. Could you relate the story of an individual and how the programme has affected him or her during the games sessions and in the classroom, please? (Continue on back, if necessary.)

Please choose someone who you have seen a real change, positively or negatively.

☐ Positively ☐ Negatively

Pupil Name Age

APPENDIX 3 – RESEARCH FINDINGS – SAMPLE

As with many small scale studies, conclusions were reached on the validity of the approach within the setting, though agreeing an 'overall truth' applicable to all settings was not possible on such a small scale.

The findings should be noted with caution due to extremely low sample sizes in some cases.

Overall frequencies

	n	%
Control Group	30	51
Experimental Group	29	49
Total	**59**	**100**

Gender

	Frequency	Valid Percent
Male	20	43.5
Female	26	56.5
Total	46	100
Missing	13	
Total	59	

As is reported here, there were 13 pupils for whom the gender data was missing

The gender ratio appeared slightly skewed with a female bias females: N= 26 (57%) and males: n = 20 (44%) however there was a substantial amount of missing data.

Ethnic group

	Frequency	Percent
White British/Irish (including: any other white background)	11	19.0
Asian or Asian British (including: Indian, Bangladeshi, Pakistani, any other Asian background)	25	43.1
Black or Black British (Including African, Caribbean, Somali, or any other black background)	14	24.1
Unsure	8	13.8
Total	58	100.0
Missing	1	
Total	59	

The Asian or Asian British category accounted for the majority of pupils: N= 25 (43%). However there were 9 pupils for whom ethnicity was unknown.

Ethnicity across groups

	Control		Experimental	
	n	%	n	%
White British/Irish (including: any other white background)	6	20	5	18
Asian or Asian British (including: Indian, Bangladeshi, Pakistani, any other Asian background)	14	47	11	39
Black or Black British (Including African, Caribbean, Somali, or any other black background)	5	17	9	32
Unsure	5	17	3	11
Total	**30**	**100.0**	**28**	**100.0**

The primary ethnic group was Asian or Asian British, with over a third fitting into this category. There were a higher proportion of Black or Black British pupils in the experimental group.

Self Image questions

It is important to state that the sample size is very small and some of the data recordings are inconsistent. Information presented is an outline of the findings from the data collection.

Control group

	Stamina test mean	Coordination mean	Balance mean
T1 n=24	8.9	38.0	27.2
T2 n = 24	14.9	19.1	6.5
difference	+6	-18.9	-20.7

Target group

	Stamina test mean	Coordination mean	Balance mean
T1 n=21	8.2	40.7	33.4
T2 n = 23	15.4	34.6	8.3
difference	+7.2	-6.1	-25.1

Comparing progress overall: stamina test slightly better result for target group, Coordination test much better result for target group, balance test, slightly worse result for target group. Note measures used for Coordination and balance at T1 and T2 appear to be different, so treat with extreme care.

Control

	Stamina test mean		Coordination mean		Balance mean	
	Girls	Boys	Girls	Boys	Girls	Boys
T1	9.1	8.4	31.4	18.8	33.1	47.9
T2	15.9	13.7	16.9	20.8	5.8	8.3
difference	+6.8	+5.3	-14.5	+2.0	-27.3	-39.6

T1: girls n=16 boys n=8 T2: girls n=16 boys n=6

Target group

	Stamina test mean		Coordination mean		Balance mean	
	Girls	Boys	Girls	Boys	Girls	Boys
T1	9.0	7.6	44.9	28.9	29.6	67.1
T2	14.5	16.7	32.8	37.2	9.1	7.9
difference	+5.5	+9.1	-11.9	+8.3	-20.5	-59.2

T1: girls n=10 boys n=11 T2: girls n=8 boys n=10

Comparing progress by gender: for shuttle runs and Coordination, target group boys did better than control boys, although they did worse on the balance test. For Coordination and balance, target group girls did better than control girls, worse on shuttle run. Note caveats above.

Control

	Stamina test mean			Bounce mean			Balance mean		
	White	Asian	Black	White	Asian	Black	White	Asian	Black
T1	7.3	9.6	9.5	28.6	26.9	14.4	38.7	35.6	33.3
T2	15.5	14.4	14.0	14.8	17.3	18.0	7.5	6.2	6.6
difference	+8.2	+4.8	+4.5	-13.8	-9.6	+3.6	-31.2	-29.4	-26.7

T1: White n = 5 Asian n= 11 black n = 4 T2: White n = 4 Asian n= 12 black n = 4

Target group

	Stamina test mean			Coordination mean			Balance mean		
	White	Asian	Black	White	Asian	Black	White	Asian	Black
T1	10.5	5.6	9.7	22.4	45.9	17.8	60.1	59.7	24.5
T2	12.0	15.4	15.4	33.7	31.9	38.1	8.7	7.9	8.9
difference	+1.5	+9.8	+5.7	+11.3	-14.0	+20.3	-51.9	-51.8	-15.6

T1: White n = 4 Asian n= 7 black n = 7 T2: White n = 3 Asian n= 10 black n = 8

Comparing progress by ethnic group: white pupils in the target group did much better on Coordination test, but much worse on the stamina test and balance compared with white control group pupils. Asian pupils in the target group did better on the stamina test but worse on the other tests compared with Asian control group pupils. Black target group pupils did better on all three tests than black control group pupils. Note that sample sizes are extremely low here.

APPENDIX 4 – CLASSROOM TEACHER COMMENTS

New Games Research Pilot Project: QUESTIONS FOR TEACHERS

Example response:

T8 In the beginning of the year [the child] would not participate in group games, 'not feeling well' or finding excuses to get out of playing. [The child] was large, overweight, slow and awkward in movements. By the end of the programme, however, [the child] did not feel reluctant about being in the games, often participating joyfully. [The child]'s lack of skill was not focused on in the games since they don't make a big deal about winning and losing, which took the pressure off to do well every time, thereby giving [the child] the opportunity to learn skills such as throwing, catching and running.

APPENDIX 5 – RESEARCH TEAM CONTACT DETAILS

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