The FeelGood PE programme: Designing an autism-friendly PE curriculum in a residential school setting

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Editorial comment
Clare Stockley is the PE Co-ordinator for all pupils who attend Purbeck View School which is a specialist school for children on the autism spectrum. In this paper, she describes a programme she devised called the FeelGood Programme. This takes account of the particular needs of children on the autism spectrum. She conducted a small-scale evaluation of the programme gaining the views of the support assistants who assisted the students in the PE sessions and obtained some feedback from the students themselves. There is relatively little literature on how PE and Games might best be taught to students on the autism spectrum, so this is a welcome addition and the Editors are keen to invite readers to submit other papers on this topic.

Introduction

The *Let's Get Moving* document (Department of Health, 2009a) recommends 30 minutes of moderate physical activity a day, at least five days a week, to help to improve health and protect against being overweight in childhood and in later life. Moderate physical activity reduces the risk of over twenty conditions and diseases, including coronary heart disease, Type 2 diabetes, mental health problems and musculoskeletal conditions. Despite the wealth of positive reasons to adopt a physically active lifestyle, only 40 per cent of adult men and 28 per cent of adult women meet this recommendation (Department of Health, 2009a).

Evidence from this campaign states that people with disabilities are at particular risk of inactivity. The approach in the *Be Active, Be Healthy* document (Department of Health, 2009b) recognises the barriers faced by people with disabilities, ranging from physical and neurological to sensory impairments and learning disabilities, all creating different barriers to participation in physical activity.

There are many studies that examine the effects of exercise on individuals on the autism spectrum or intellectual/developmental disabilities in scientific conditions, generally for short time periods (Kern, Koegel, Dyer, Blew and Fenton, 1982; Rosenthal-Malek and Mitchell, 1997; Watters and Watters, 1980; Kern, Koegel and Dunlap, 1984; Levinson and Reid, 1993). These effects not only contribute to good health but are also essential to well-being and lay the foundations for the value of an accessible and regular physical activity programme. This starts in our schools. Physical Education (PE) presents a distinctly practical setting that enables children to participate in enjoyable, stimulating and challenging physical activities through the National Curriculum, enabling children to build up good health and fitness and the ability to make informed choices about healthy, active lifestyles. PE also helps pupils develop personally and socially; pupils can learn how to work as individuals and in teams, developing concepts of fairness and of personal and social responsibility (National Curriculum, 2007).

I am PE Co-ordinator across the whole age range at Purbeck View School, a residential school for students aged 9–19 with a diagnosis of autism, or whose difficulties place them on the autism spectrum. Our students often have complex needs, learning difficulties associated with autism and challenging behaviour. When this study was conducted the role of PE Co-ordinator was a new full-time role.

Aim of the study

The aim of this study was to investigate how to create an accessible PE curriculum that provides an autism-friendly approach to leisure education and motor skill development in a school setting. The FeelGood Programme is the curriculum that I have devised to improve functional access to the PE National Curriculum at the Purbeck View School. *Figure 1* gives an overview of the intentions of the FeelGood Programme and the outcomes that I hope to achieve for the students.

Physical activity has a unique part to play in the lives of students with autism and can be presented as both a physical and a sensory experience. The FeelGood Programme is a physical development curriculum that has been designed to address the triad of impairments and promote the strengths of individuals with autism.

Figure 1: Aims of the FeelGood Programme

The FeelGood Programme aims to facilitate students to feel:

***F**lexible*
***E**mpowered*
***E**asygoing*
***L**evel*
***G**reat*
***O**rganised*
***O**riented*
***D**ynamic*

and to enable students to have:

***F**un*
***E**njoyment*
***E**ndurance*
***L**aughter*
***G**rowth*
***O**wnership*
***O**ptions*
***D**irection*

Creating a physical programme for children with autism

When developing the activities that make up the FeelGood Programme it was important to take into account the issues arising from the triad of impairments and those related to sensory perception. Some of these issues are considered further below.

Social skills and social understanding

Some children with autism are not always cognitively or socially able to deal with competitive games. Some do not see themselves as team members (Attwood, 1998). In inclusive situations, they are often not chosen to be on a team in a PE lesson, or on the playground, and so get less experience and practice. Claire Sainsbury (2002), an able adult with autism, describes having a poor understanding of the rules in PE and needing more time to work at her own pace. Schleien, Heyne and Berken (1998), in their study, found that the main area that children with autism did not improve on was in team interaction. Through personal observation I have found that team games are not ideally suited to the needs of students on the autism spectrum. They struggle with the demands of a large group situation and of the roles within a game. I have aimed to provide a PE curriculum that promotes teamwork through adapted cooperative games which are not competitive.

Communication and language

Children with autism often lack the communication skills to take part fully in these team games. The Social Stories (Gray, 1994) they have used in other situations often do not help in a fast-moving game situation. Skills in turn-taking, sharing and negotiation are all essential factors that, whilst not impossible to acquire, put a child with autism at a disadvantage if a PE curriculum is based on team games. Their literal understanding of language can also pose problems.

Creativity and flexible thinking

Dance and gymnastics offer opportunities for balance and posture work, movement sequencing, and general coordination (Freundlich, 1989). A child with autism may not easily be able to plan a dance or gymnastic sequence, but can be helped to organise this by giving prompts that still allow the child to be in control. I use action cards for students to choose from which can be put into their chosen order. I also have a large foam 'movement dice', which is constructed with pockets on each face into which cards can be inserted. One

adaptation of these aids is to use removable laminated symbols of movements. When the dice is rolled, the symbol showing is the movement that the student performs and the symbol card can then be removed if necessary and laid out along the mats as a permanent reminder of whagt they have to do.

Adaptations made in the FeelGood programme

I decided that the main issues to teaching PE to children on the autism spectrum were:

Choices and requesting

Having good health is the key to a good quality of life. Maintaining good health depends on being able to make informed choices about key issues such as lifestyle and diet, and individuals with autism may not always be able to express their needs. They can be poorly informed about the choices open to them. Learning how to make a choice and communicate can be taught alongside physical activities. Towards the end of the session, they can be given a free choice time. It helps if the choices available are shown to them, as many children are not able to call up in their minds – what they might do.

Giving information and instructions

Children on the autism spectrum struggle to hold information in their heads long enough to make sense of it and then to act upon it, so tasks must not be presented only verbally, without support from visual aids. In the sports hall I have a large noticeboard with a fuzzy-felt covering. Velcro symbols, schedules and instruction cards can be placed on here to be collected and returned to a central information point.

Houston-Wilson and Lieberman (2003) identified difficulties of processing information in wide open spaces. The nature of PE is that activities are usually taught in large sports halls or outside in a playground or in a field – all of which have a number of distractions. I use pocket-sized schedules that can be carried around to give more concrete information when we go outside. Setting physical boundaries and work zones using rope boundaries or hoops, minimises the size and space and reduces the number of stimuli.

The sports hall is a classroom too and it is important to keep a balance between the need for open space for throwing activities and for children to be able to run about in, with the need for clear working areas and boundaries. I use TEACCH (Treatment and Education of Autistic and Communication related handicapped Children) strategies to provide a familiar structured environment (TEACCH Manual, 2005). The physical educational environment in a sports hall can be organised into activity zones, where is mats are laid out to indicate different tasks. Activity zones have themes and build on individual skills with clear boundaries and purpose. Communication in print (CiP) instructions (reference needed) or simple symbol cards show children visually what is expected of them. Helpful resources include 'throw-down feet' to indicate where to stand and large arrows which point to the direction of movement. They need to be taught first what the throw-down feet and arrows mean in the first place.

Equipment and resources

Adaptations to games can be made by adapting the equipment itself. These can include wearing Velcro gloves for catching; using a static batting 'tee' instead of striking a moving ball; using double-sided Unihoc hockey sticks rather than the one-sided traditional hockey sticks, or a swing-ball set to develop batting skills. These adaptations are easy to implement and can be tailored to individuals depending on their skills and interests.. Balloon balls are a good way of helping children who are frightened of catching a ball, or bell balls can be used to motivate children to play throwing and catching games. If a child has an interest in animals or shapes, it may be useful to buy beanbags to throw with pictures on or which are shaped.

All students at Purbeck View School have a PE profile which describes which part of the FeelGood Programme they might use and they also have a personal fitness programme which is implemented during the school day, in the evenings or at weekends.

Programme delivery

The FeelGood Programme is currently delivered through two, one-hour PE lessons a week in the Key Stage 2–4 age groups and a one, two-hour leisure lesson in the 16–19 years age group. Although I am well-supported by class Teaching Assistants (TAs), I work without a designated PE team, so it was essential that I gained feedback from the TAs when the FeelGood Programme was introduced to PE lessons.

Programme content

The FeelGood Programme seeks to follow the National Curriculum. I have also added the further areas of fitness, relaxation, play, sensory and Option. There are many activities available on the FeelGood Programme and there are potentially many more to be developed. I have chosen two activities to illustrate how these have been adapted for children and young people on the

Figure 2: Yoga in the FeelGood programme

The aim of Yoga is to gain control of the life-currents that flow through the body (Sivananda, 2001). Yoga may be seen as a mind-body fitness programme using a combination of energising muscular activity and mental focus on awareness of the self. The discipline of Yoga may offer therapeutic effects that are not necessarily scientifically proven.

Why Yoga for those on the autism spectrum?

There are many forms of Yoga that have been used in exercise programmes in their own right. Integrative Movement Therapy is a Yoga-based treatment used by professionals with backgrounds in speech and language, mental health and behaviour support (Kenny, 2002). Koterba (2007) used SuperBrain Yoga to enable children to become less irritable which regulated their arousal states. Chissick (2008a; 2008b) believes that children whose needs included autism and behavioural problems, learned how to relax during Yoga sessions which led to better behaviour and social skills being developed. Yoga can be easily incorporated into the curriculum as a set of individual movements for cool downs or relaxing, or can be practised as sequences. I believe that Yoga principles are ideally suited to students on the autism spectrum. The postures have to be performed slowly which is useful to a student who is learning how to control their impulsiveness. The postures can be carried out lying, sitting or standing on mats, which not only marks out a designated work area, but also involves all students regardless of their physical ability. Yoga teaches that each posture must be mastered first, ensuring that students will always work within their comfort zone. They will never be shown an exercise that is too hard for them. Students explore their bodies and thus gain a sense of themselves at their own pace.

How can Yoga be implemented into the PE curriculum

There is a range of fun Yoga positions and breathing techniques that are effective in dealing with the increased levels of anxiety and disorientation often found in children on the autism spectrum. A range of sequences can be tailored to fit the needs of the individual. Some students need hand-over-hand to perform the poses, whereas others will copy. Using the names of poses with visual props such as photos or symbols of the poses is especially helpful whilst the child is attempting them. The first few Yoga sessions are spent practising the poses and are practised in the same order. When the students have mastered them, the poses are rearranged. I use an adapted topic called the 'Animal Parade' from the book *The complete guide to Yoga* by Judy Smith, Doriel Hall and Bel Gibbs. Most students enjoy the selection of birds, reptiles and animals represented in the prompt cards and like doing the actions that each creature makes. The addition of music playing in the background is helpful.

Yoga case study with Archie and Blue class

What is most evident after including Yoga in PE sessions is that the children in Blue class appeared more relaxed and had longer tolerance for sitting. Over time, they exhibited improved balance, increased eye contact and knowledge of where their bodies were in space. I have found that Yoga is an inclusive physical activity that each student can access. The class are more alert and creative in the sessions and have fun making their own animal noises during the 'animal parade' and choose their favourite moves from the selection given which changes. Students can then choose the order of the poses. Archie has some functional speech. He frequently wants to know what is next and wants to rush to the end task. He will sit on a mat but has no spatial awareness and often gets closer and closer in order to smell you. After a selection of breathing exercises and learned movements, Archie started to relax and became more focused. He then moved away into his own space. Archie has worked hard to feel comfortable with the routine. Verbal cues along with colourful visual aids help him to work out which exercises follow and then to accept much longer sessions. Archie succeeded in the Yoga session as he realised how easy it was for him to become skilled and he enjoyed it, so he appears more relaxed and receptive to learning.

Figure 3: Rebound Therapy in the FeelGood programme

Rebound Therapy (RT) was developed in 1969 by Eddy Anderson who promoted the concept of using the moving surface of a trampoline to provide recreation for those with profound and multiple disabilities (National Rebound Therapy Consultancy, 2008). RT provides opportunities for all individuals to move and experience the stimulating feedback from this movement. It is a fun, accessible and inclusive activity that is particularly relevant for students with special needs.

Why Rebound Therapy for children on the autism spectrum?
Rebound therapy can have extremely therapeutic effects (Chartered Society of Physiotherapy, 2007). This type of activity is particularly beneficial to people with sensory impairments. The bouncing itself can calm and focus while providing a high-energy workout with simple commands (Walker, 2008).

The benefits of RT can be psychological and educational, but for me the most inspiring feature is that it is a fun way of informally developing fitness! Students develop gross motor skills and postural balance, stamina and all of the obvious health benefits associated with vigorous exercise. There are many ways to incorporate key skills, cross-curricular elements and communication into tasks through the ways in which activities and games are presented.

How can RT be implemented into the PE curriculum?
I have introduced students to trampoline sessions including passive and active bouncing. Some simply like to bounce, others like to learn moves. I include RT under the Gymnastics area of activity in the National Curriculum, but there are many links to other areas of activity and subjects in the National Curriculum. I have found that a structured RT lesson provides a dynamic and multisensory approach to PE. The trampoline itself is a clearly organised work zone, therefore it is easy to understand. In this way, problem solving and sequential thinking can be developed and individually paced without pressure.

RT presents a reactive situation for students who do not always respond well to making quick decisions. Typically, most individuals struggle to think what they might do in a situation, but when on the trampoline, my observations suggest that students gain the freedom to be creative. By teaching students initially to copy movements, or sequences of movements, a memory bank is established. When they are given free time, they own a wider range of movements from which to choose and become confident with. I have found that the trampoline is made even more attractive when, where relevant, used alongside other equipment such as a parachute, balloons balls, soft hoops and sensory toys. Dynamic and interesting effects can be created for students who do not readily respond to instructions or information and who require a much more powerful motivator to move. Resources packs can be made that include large symbol action cards to support verbal instructions and demonstrations. Physical prompts can be used because the teacher can be on the trampoline with the student using aids to avoid direct touch. Programmes are easily adapted to be purely therapeutic, instructional or both according to the individual and depending to their needs on a particular day. Providing RT on a regular basis could be part of a good behaviour management strategy for some students.

Rebound Therapy case study with Aaron
Aaron is a 14 year old student with one-to-one support who struggles to access the school curriculum. He is non-verbal and spends a lot of time in a kneeling position displaying poor posture and body tone that fluctuates between being rigid and flaccid. He has adopted several behaviours that provide both a distraction and a sensory stimulus when asked to attempt something. It is difficult to engage Aaron in PE lessons but he is a different person when on the trampoline. He is literally delighted to be bouncing and TAs have commented that it is one of the few times that he will show appropriate laughter and smiling. Aaron has progressed so well from being an unresponsive young man who would sit on the trampoline whilst I bounced him, to standing and bouncing holding onto me with one hand and sometimes letting go. Aaron is still unable to follow instructions when on the trampoline but he understands that he has to take his shoes off to use the trampoline and he gets on and off safely without prompting. Aaron is well-co-ordinated when bouncing, knows where he is in his space and uses his body well to keep balance.

autism spectrum. These are Yoga and Rebound Therapy and are described as short case studies in *Figures 2 and 3.*

Assessment measures of the FeelGood Programme

Staff Survey

An anonymous questionnaire was given to staff to explore the impact that the new PE programme has had on students. Support staff were aware of the programme from their involvement in PE lessons.

Twenty-six educational TAs participated in this survey which took place approximately one year after the FeelGood Programme was introduced. Staff were invited to comment openly on the PE lessons after changes to the curriculum. Opportunities to meet support staff are limited outside of the PE lessons, so this was also a valuable way of discovering what TAs thought.

Data collection

The closed questions from the questionnaire have provided some quantitative data and the open-ended qualitative responses have been organised into common themes. Both sets of data are presented in *Table 1* below. There are limitations on the methods used because this has taken place in a relatively small school within approximately one academic year. There are many variables such as students' past experience in physical activities and their levels of functioning. In educational situations, experimental designs are hard to implement and conditions are difficult to maintain across an academic year (Robson, 2002). This study has been no exception.

Findings

The responses from the staff were most encouraging. Most believed that having a PE Co-ordinator and an adapted PE curriculum had made a positive impact on students and their participation in PE lessons.

Table 1: Results from staff survey of the implementation of the FeelGood PE Programme

Staff responses to the questions	
1. What are the benefits of regular PE for students with autism?	
Health and fitness	**Learn new skills**
Self-esteem	**Fun**
Behaviour management	**Therapeutic benefit**
Working with others	**Motor skill development**
Directly relevant to the triad of impairments	
2. Do you think the students in your class benefit from PE?	
YES – 26/26	
3. How often do you think that PE should be timetabled?	
Minimum twice weekly **More for some students**	
4. Do you think that the PE activities are autism-friendly in the way that they are planned and delivered?	
Yes – 24/26 **Don't know – 2/26**	
5. Do you think that the PE activities are individualised?	
Yes – 26/26	
6. What do you think are the most beneficial PE activities your class have taken part in?	
Top three responses:	
Trampoline **Fitness/Circuit training** **Parachute/co-operative games**	

Table 1: Continued

Staff responses to the questions
7. In general, do most students in your class participate in the activities provided in PE lessons? **Yes – 26/26**
8. Has having a full-time PE teacher made any difference to PE lessons? **Yes – 26/26**
9. Has making PE more autism-friendly, ie the FeelGood Programme, made any difference to student participation? **Yes – 24/26** **Don't know – 2/26**
10. Your comments are welcome The activities make students progress and benefit from the topics This is a more varied PE curriculum PE role allows activities to run smoothly Activities are flexible Enjoyable PE lessons for staff and students PE lessons are adapted for moods and needs PE helps students to calm and stay on task Lessons are differentiated so can be experienced by all Student needs are taken into account PE has improved 100% Relevant equipment and activities are used Teacher makes sure every student is catered for at a level which is appropriate PE structure is meaningful and relevant Teacher enables individual needs to be met long-term PE is lively, pleasant and fun PE has an organised, calm environment PE is valuable part of the curriculum Programme works and encourages children to participate in an attainable environment Full-time PE Teacher is crucial for students to get the most from PE sessions Generally all students are happy and co-operative during participation in PE

Staff were unanimous and upbeat in their views concerning the benefits of PE for students on the autism spectrum and felt that the students in their classes did benefit from their PE lessons.

The students' views

This school-wide project was designed to provide a student-centred curriculum so it was important to ask the pupils who received the FeelGood Programme what they think. The difficulty is that the students are, by the nature of their learning disability, likely to find it difficult to express their opinions in ways that we can understand. I run a plenary at the end of each session where students are asked whether they liked or did not like the activities using CiP symbols. This works well with the higher-functioning students and those with an understanding of symbols who can comment that they like or do not like something.

A questionnaire supported with CiP was distributed to students across the school. Students were helped to in fill out the survey by staff during class time. Fifteen students from across the age range at the school participated in this survey. They answered questions about their PE lessons, including who teaches them, when and how often.

The responses from students were interesting. Students liked PE lessons, could name activities they had participated in and what sports they like to do (see *Table 2*).

Table 2: Results from the student survey (n=16)

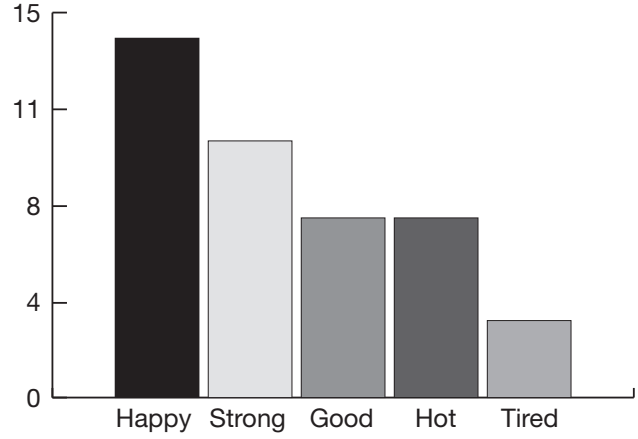
Question	**Responses**		
Question 4: Do you like PE?	Yes	No	Not sure
	14	0	1
Question 5: Which sports do you like?	Swimming – 8 Football – 4 Running – 5 Trampoline – 6 Exercise/Fitness – 4		
Question 6: Which sports would you like to do in PE?	Golf – 1 Bowling – 1 Snooker – 1 Archery – 1 Swimming – 2		

Figure 3 shows the the views of students on their feelings after exercise in PE lessons. This indicates that some students have started to realise that exercise is a positive experience and that they recognise the benefits to them personally. The choice of answers were given as prompts, with a category called 'other'. None of the students gave an alternative here or said that they felt 'sad' after exercise.

How I felt after exercise

Many of our students are non-verbal, so it is important to note here how I believe they demonstrate their preferences. I believe that the non-verbal students show a positive response to the sessions simply by participating. They usually take part in the activities quite willinglyIf they did not like the activities, or feel motivated to try them, then they definitely would not do them!

Figure 3: Views of the students on how they felt after exercise



Concluding comments

Based on my personal observations and staff feedback, it is clear which activities are working for most students in my school and what the positive effects are. The use of PE goes beyond merely improving physical fitness. The wider application means that exercise can also be embedded in a timetable throughout the day as a behavioural intervention by letting off steam, a weight-management method, a fun way of practising social skills and a way to learn lifelong leisure pursuits.

A PE curriculum for children with autism must be broad enough to involve students across the spectrum of needs and abilities, but also be flexible enough to engage in interests and strengths. It needs to be challenging and appropriate.Accessibility is enhanced by appropriate equipment and the way in which the tasks are presented. We are constantly thinking about how to enhance what we do and will continue to consult staff for ideas and develop ways to gain the students' views. It would be also useful to find out the extent to which students engage in the activities outside of school, with the care staff and with their families during holiday periods.

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