

# Go Dance

Inspiring children to dance to 2012  
and beyond

## Research Report

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## Acknowledgements

*Go Dance: Inspiring children to dance to 2012 and beyond* was commissioned by East Youth Dance, the partnership organisation for Youth Dance England in the Eastern region.

The project was funded by:

Department of Health

Norfolk Dance

Youth Dance England

DanceDigital

University of Bedfordshire

Dance in Herts

The project was managed, delivered and evaluated with the following partnership organisations:

Norfolk Dance

Dance in Herts

DanceDigital

The project was delivered in three schools:

Holy Rood Catholic Primary School, Watford, Hertfordshire

Quarry Hill Infants and Junior School, Grays, Essex

Norwich Road Primary School, Thetford, Norfolk

Many thanks to the research teams involved in collecting and analyzing data:

Annika Spampinato-Korn, Sadie Hunt, Sarah Lewis, Katie Ryan, Laura McGill, Demi Milton, Abigail French, Meghan Bailey, Sophie Cryer, Cheryl Bennett, Niamh Morrin, Lois Devlin, Kerry Childs, Isabel Brett, Laura Miller, Nicola Jones, Kirsty Russell, Jodie Merry, Kate Donovan, Lorna O'Connell and Emma Lansley

Many thanks to:

Helen Angove, Head of Teaching and Learning, London Contemporary Dance School

Professor Helen Bailey, Head of Performing Arts and English, University of Bedfordshire

Chrissie Harrington, Head of School of Arts and Humanities, University Campus Suffolk

Jane Langston, East Youth Dance Coordinator, DanceEast

Cheryl Bennett

Sophie Cryer

Mileva Donachie

All the children for participating in this project and their teachers and schools for supporting the research with such enthusiasm for learning and dance

Findings of this project have previously been presented at the 1<sup>st</sup> International Congress of Dance and Health at the University of Bedfordshire in June 2011.

Produced on behalf of all the partners of the *Go Dance* project  
Ipswich, Suffolk, UK.

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## Executive Summary

The Go Dance Research project was commissioned by a consortium of dance organisations and providers throughout the Eastern region of England, to examine the impacts of dance on physiological health and psychological wellbeing on young people in Year 6, as they near the transition from primary into secondary education. The partners in the project wanted to examine how dance might positively impact the lives of boys and girls and whether dance might be a sustainable physical activity choice for young people in pursuing healthy lives.

The Go Dance project was placed in areas where there was little or no existing dance provision, in geographical communities which had reported increasing levels of childhood obesity and where access to dance provision could be sustained and developed for the long term. It took place over a 6-month period in 2011, in three counties in East Anglia; participants were drawn from participating schools and dance artists based in the locality were selected to lead the work with a view to sustaining provision beyond the life of the project itself.

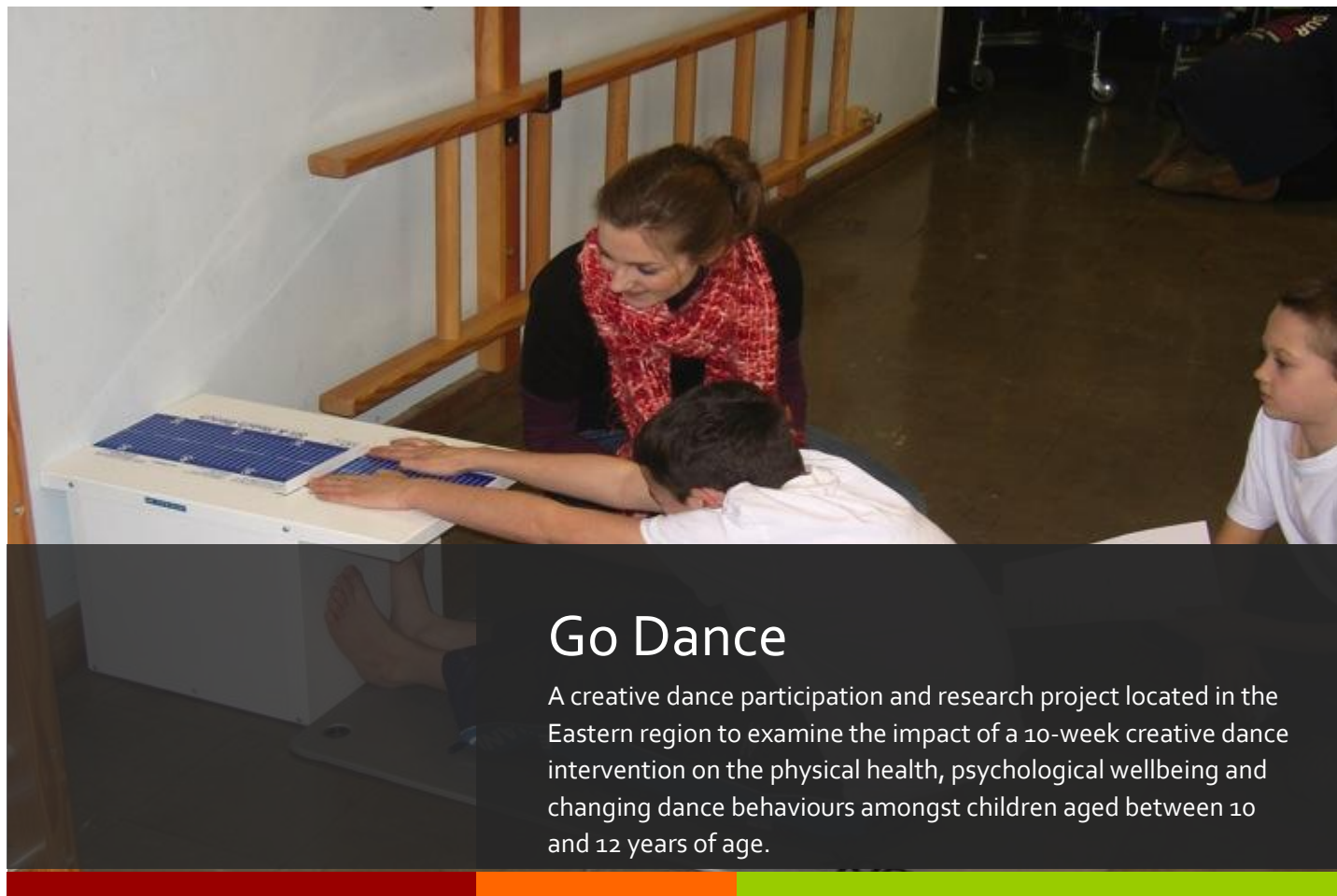
Some interesting findings presented themselves, drawing on both quantitative and qualitative data analysis, which points to the increasing tide of evidence of dance as a viable, sustainable and vital contributor to enhancing and maintaining the physiological health and psychological wellbeing of young people. Importantly, boys' perceptions of pressure and tension as an indicator of intrinsic motivation reduced as a result of doing this project, with the male participants and their teachers relating their increased focus in other curricular subjects to their participation in the dance workshops. Results from this study also indicate that participating in a dance project during school time can inspire positive behaviour change in terms of physical activity levels, outside of the school structure, and furthermore that the opportunity to perform dance to an audience can encourage the participants to continue their involvement and also inspire audience members to get involved and consider dance as part of their physical activity repertoire.

And so this report appears timely in its publication, to support previous findings regarding dance and health agendas but also extend our understanding of how dance can change behaviour and attitudes amongst children and young people.



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## Go Dance

A creative dance participation and research project located in the Eastern region to examine the impact of a 10-week creative dance intervention on the physical health, psychological wellbeing and changing dance behaviours amongst children aged between 10 and 12 years of age.

# Introduction

Youth Dance England (YDE) has been working in partnership with regional organisations such as the University of Bedfordshire, DanceEast, Norfolk Dance, dancedigital and Dance in Herts since 2009, to widen access, raise standards and improve progression routes in dance for children and young people across the East of England. A fundamental aspect of this work is to provide parity of opportunity across the region which has varying degrees of social, economic and cultural deprivation including areas of rural isolation, high obesity and low activity levels which can all, potentially, be addressed with dance activity.

The Cultural Olympiad provided the stimulus for a region-wide project which aimed to not only inspire young people to participate in dance activity but crucially, provide the opportunities for participation in areas where there has been little or no existing activity or provision previously. By

ensuring that participation was supported by partners at a local level in each participating county, the likelihood of a lasting legacy where the activities have taken place was increased and, met the core values of the Cultural Olympiad: celebrating culture, inspiring young people and leaving a positive legacy.

Given its scale and format, the 2012 Dance Project provided an ideal basis for necessary research examining the impact of dance activity and whether a region-wide dance project connected to and inspired by the London 2012 Olympic Games can influence change in dance participation behaviours.

The project itself has been awarded a Cultural Olympiad InspireMark and work continues in the participating schools and local communities.



# The literature

## The political perspective

The value of regular physical activity in ensuring the health and wellbeing of children and young people in England is at the forefront of political debate (Department for Children, Schools and Families, 2003; Department of Health, 2004; Department of Health, 2011). In 2009, thirty one percent of boys and twenty eight percent of girls between the ages of 2-15 years old living in the UK were reported as either overweight or obese while the prevalence of obesity within this population has risen 3% and 5% in females and males, respectively from 1995 to 2009 (Health Survey for England 2009). Direct correlations have been made between obese children coming from lower social groups (Lamerz et al., 2005), whilst researchers also speculate that the increase in the consumption of convenience foods, coupled with the relative increase in car travel and perceived risks of outdoor play have contributed to these rises (McLennan, 2004; Anderson and Butcher, 2006; Kirk, MacIntyre and Mutrie, 2007). Dance has a role to play within this debate as outlined by the Dance Manifesto (ACE, Dance UK and NCA, 2006, p. 11) and re-emphasised by Hall's (2008) review of dance education and youth dance provision in England. Both papers claim that the health benefits of dance participation have the potential to help address the Government's targets to halt the rise in childhood obesity, by engaging people who may be less inclined to participate in other physical activity. The Department of Health has acknowledged the role that dance can play, in diversifying the definition of physical activity and realizing the contribution that it can make to improving health and wellbeing through its *Healthy lives, Healthy people* strategy (2010). Dance has the potential to engage those who do not participate in sport because it can be a non-competitive form of physical activity, it can draw on popular culture to inspire and initiate participation and it can engage community groups which may not perceive sport as being appropriate for them (Hillier, 2007; Nordin and Hardy, 2009).

## Dance and health

A growing body of research and anecdotal evidence indicates that dance benefits physical and psychological health and wellbeing. A recent literature review reveals that the majority of studies show dance to have positive impacts on children and young people's physical health and psychological wellbeing (Burkhardt, 2009). However the review indicates the paucity of rigorous studies that provide robust evidence for these claims. An exception to this is the *NRG Youth Dance and Health Project* run by Hampshire Dance and TrinityLaban in 2005/6. The project examined the effects of creative dance participation on the physiological and psychological health and wellbeing of young people aged 11 to 14 years (Quin, Redding and Frazer, 2007). The authors found that after eight weeks of creative dance participation statistically significant improvements were seen in lung function, flexibility and aerobic capacity amongst the female cohort; the male participants' physiological health also improved, although this did not reach statistical significance. From a psychological perspective positive changes were observed in self-esteem, intrinsic motivation and positive attitudes to dance. Whilst we may infer that the participants of this study changed their exercise behaviour for the duration of the project, as with other studies of this nature, there is little evidence to suggest whether these changes were the result of changes or increases in physical activity behaviour. It is unclear what instigated their involvement in the project in the first place and due to the short-term nature of the project it is not known whether these behaviours have been maintained for the long-term. More recent studies by TrinityLaban examining the impact of dance on childhood populations (Blazy, Quin and Redding, 2010; Connolly, Chorley, Quin and Redding, 2010) have found positive improvements in physical health and psychological wellbeing amongst the female cohorts participating in dance projects, suggesting that dance may be an appropriate method in increasing physical activity levels in this population in a non-competitive environment.

### The role of London 2012

The London 2012 Olympic and Paralympic Games has explicitly focused on achieving a significant sporting and cultural legacy, which will include increased participation in physical activity (Price Waterhouse Coopers, 2005). The previous Government minister for the 2012 Olympic Games stated that they could be “the catalyst that inspires people of all ages and all talents to lead more active lives” (Jowell, 2003). Previous research has shown that adult physical activity levels can often be traced to childhood and adolescence (Pangrazi, Corbin and Welk, 1996). However the Department of Health (2007) also speculate that activity levels can be increased through the *demonstration* effect, whereby current or lapsed participants will increase the frequency of their participation through the impact of mass events such as the Olympic Games. They also infer that people may be inspired to get active through the *festival* effect, whereby pre-contemplators or contemplators of participation may be stimulated to participate, perhaps reigniting higher levels of activity seen in late childhood and early adolescence (Department of Health, 2009). However there is a paucity of empirical research to indicate that mass sporting events and the surrounding cultural activities impact physical activity participation at individual and community levels. Murphy and Bauman (2007) suggest that because of the scarcity of such evaluations there may actually be limited changes in physical activity behaviours. Indeed physical activity participation rates were lower after the 2000 Olympic Games in Sydney (Coalter, 2007) and other research findings concur with these conclusions (Murphy and Bauman, 2007). Certainly enjoyment and keeping fit have been cited as the most prevalent reasons for sports-based participation in adult populations (and only limited correlations between the success of elite sportspeople and sports-based participation levels have been recognised

(TNS, 2004). The same appears to be true within a dance context. Young people anecdotally confirm that they are inspired by the elite dancers or dance companies that they have seen, but there is little research to indicate a correlation between seeing dance and participating in it. Similar to adult sport participants, young people have stated that enjoyment (in terms of social interaction, creativity, physical learning, wellbeing) is the key component of their dance participation in schools and community provision (Stinson, 1997; Nordin and Hardy 2009).

The London 2012 Olympic and Paralympic Games aims to contribute to a seachange in physical activity levels, through both the sporting programme and the Cultural Olympiad, thereby addressing the political agenda of raising the health and wellbeing of the population. Projects inspired by the Games may establish whether changes in participation behaviours can indeed be attributed to mass events and whether public health may improve as a result. This project aims to examine whether a dance project connected to and inspired by the London 2012 Olympic Games can influence changes in participation levels in children aged 10 to 12 years.

### Measuring changes in participation

The psychological influences on physical activity behaviour are considered manipulable through interventions, in order to change behaviour (Hagger and Chatzisarantis, 2008). Changes in physical activity behaviour have been examined predominantly from an exercise science perspective; there appears to be little research examining similar behaviour changes within a dance context. Within the exercise science realm, it is argued that basing interventions on theoretical models allows for a more rigorous understanding of findings (Hutchison, Breckon and Johnston, 2008).

Equally, authors considering the social impacts of the Olympic and Paralympic Games suggest that clear epidemiological intervention designs may allow appropriate evaluation of population impacts from mega events (Coalter, 2004). Such an approach appears appropriate for this research project. To make sense of the *festival* and *demonstration effect* models, and to create appropriate measures by which to examine changing attitudes and behaviours, the Theory of Planned Behaviour (TPB; Ajzen, 1985) has been used as a basis upon which to examine the predictors of dance behavior change amongst this particular population. This model combines personal factors such as motivation, self-efficacy and decision-making with situational constructs which may influence participation.

### The Theory of Planned Behaviour

The TPB focuses on the individual's intention to perform a given behaviour. By assessing intentions we understand more about the personal motivational factors that govern behaviour and affect whether the individual actually participates in the activity. Combined with other non-motivational factors such as the availability of activity, economic status and time these factors represent the actual control the participant has over whether to participate in the activity. The predictors to the notion of intention are shown in Figure 1.

The first determinant of intention is one's attitude towards a behaviour. Ajzen (1991) hypothesised attitude towards a behaviour (in this instance in physical activity) to be the strongest determinant of intention. This TPB variable has been found as a significant predictor of intention overwhelmingly in both children and teenagers (Trost, Saunders and Ward, 2002; Foley et al., 2008; Belanger-Gravel and Godin, 2010). Another considerate of intention is subjective norms, the perceived social pressure to perform a behaviour or not to. Possible influential persons for young people would include family members, friends, and teachers. Subjective norms were found to be the strongest determinant of physical activity intention in younger children. Mummery and associates (2000) reported the least contribution from subjective norms among three groups of students with mean ages 10.3 years, 13.9 years and 16.4 years respectively, while the same indicator was found to be the strongest significant contributor to predicting intention in school children with mean age 8.2 years. Lastly, perceived behavioural control refers to people's perceptions of the ease or difficulty of performing the actual activity and the relative confidence they have to succeed at the task. The majority of research based on the TPB has reasoned that when behaviours pose no threat to control, intentions are generally acted upon (Ajzen, 1988). This has been supported in research amongst child populations (Mummery et al., 2000; Hagger et al., 2007).

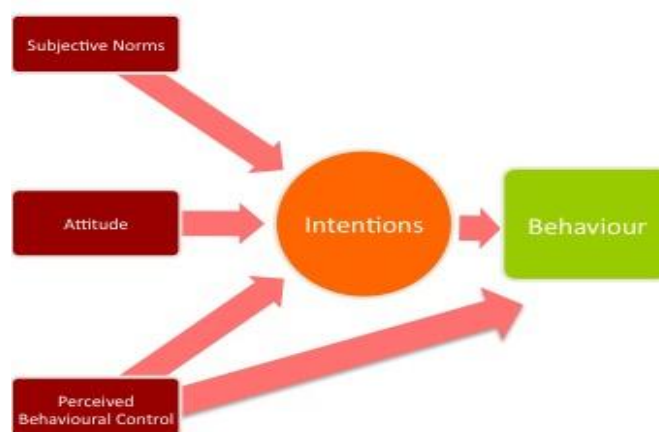


Figure 1: Theory of Planned Behaviour (Ajzen, 1988, 1991)



### External factors affecting activity levels

Participation patterns are also shaped by the external factors governing physical activity. Lack of local provision obviously precludes participation in a given activity, particularly when young people may be reliant on public transport or family support to attend (Weinberg and Gould, 2003). Evidently economically disadvantaged communities may also be discouraged from attending if cost is considered too dear (Edwards and Tsouros, 2006). Other factors which may negate involvement may include community segregation, typified by gang culture, 'owned' spaces and no-go zones (Worpole and Greenhalgh, 1996). The impact of the subjective norm is also relevant within this context. A number of studies have examined the relationship between group cohesion and exercise adherence. Estabrooks (2000) concluded that exercise class attendees who feel more cohesive are likely to attend more classes, will arrive on time, are less likely to drop out, are resistant to disruptions in the group, are more likely to experience positive affect as a result of their participation and have a stronger sense of self-efficacy than those who are members of less cohesive groups. The role of the leader appears to be essential in developing cohesion and supporting participation. Yukelson (1997) suggests that the group leader plays a major role in integrating a group into a unit through clear communication and encouraging a sense of pride, excellence and collective identity, which in turn can enhance exercise adherence. In addition Hagger and colleagues (in press) observed that perceived autonomy support from teachers in curricular physical education lessons predicted autonomous motivations, intentions and behaviours during leisure-time activities in young people aged 13 to 14 years. This highlights the importance of the leader in supporting self-motivated behaviours outside of the educational context. Whilst it is not clear whether such role-modelling behaviour may be inferred from the role

models of athletes, artists and activities associated with the Olympic Games, it may be questioned that if indeed these notions can contribute to a sense of national and community cohesiveness as part of London 2012, might this lead to more likelihood of a demonstration and festival effect occurring?



*"You can't underestimate the influence of the artist on the children actually. They have started to wear similar clothes to S, use the terminology that she uses quite freely and accurately."*

Teacher, Hertfordshire

*"When we started the project it was a struggle to get them to class on time, they straggled in. But after three or four weeks, they are now early, lining up at the door, no nagging about clothing etc required. Just ready and focused and eager to go. I've just kept at it, behaved in a way which I want them to behave and expected them to rise to that too. I've been aware of myself as the role model here, and from what I see in their behaviour, they too are expecting more, demanding more of themselves and appear motivated to work together. Very interesting to witness."*

Artist, Hertfordshire

## Our research questions



How does a creative dance intervention impact on the physical health of children aged between 10 and 12 years old?



How does a creative dance intervention impact on the psychological wellbeing of children aged between 10 and 12 years old?



What are the predictors of dance behaviour change amongst this population and how might these relate to notions of the festival effect?



How might a large-scale youth dance performance influence their continued participation in dance and that of the audience watching them?



## Project outline

Partners in the project wanted to know about the impact of their work on physical health and psychological wellbeing. In addition, they wanted to know about how exposure to dance might inspire future engagement in dance too.

### Project structure

School projects were located in Essex, Hertfordshire and Norfolk. Schools were identified by regional dance agencies and local health consortia where there was little or no dance provision and where there was a need to increase physical activity levels for public health purposes. Schools were offered the opportunity to opt into the project for its duration. Workshops were led by dance practitioners with experience of leading creative dance with young people in community and education settings.

### Devising the sessions

The dance artists participated in a 3-day professional development residency to define the terms of the project, develop schemes of work which were broadly consistent with each other and to understand the research parameters and their role within this. The residency was facilitated by a community dance practitioner and senior university lecturer with extensive experience in leading dance for health interventions such as the Go Dance project. The artists agreed the working definition of creative dance as “encouraging children to find their dancing voice, problem solve independently and as a team and refine the motor control of their body by engaging in *their* dance practice”. Consistent with previous research (Connolly et al., 2010), the artists agreed the content of the sessions to include:

- Warm up
- Creative tasks and choreographic development
- Cool down

The artists were made aware of the research questions to be addressed, but were encouraged not to alter their working approaches; classes were underpinned by health aims including increasing aerobic fitness, strength and flexibility as well as developing independence, autonomy and self-esteem and encouraging positive involvement in dance as a healthful physical activity.

# Participants and methods

## The participants

Project participants were boys and girls aged 10 and 12 years (Year 6 in English primary education). Average age was 10.21 years  $\pm$  0.49 at the pre-testing period. Previous research has suggested that the transition between primary and secondary education sees a fall in physical activity engagement, making this an important period in children’s development to consider (Brodersen et al., 2006). Each school had a double class intake and each class was assigned randomly to either the experimental or control group. Participants in the experimental groups worked with an artist for one hour per week from January to April 2011 over a period of 10 weeks. The control groups continued with their normal PE lessons and participated in curricular dance sessions from April 2011 (week 13).

Table 1: Participant information

	Total participants	Experimental participants	Control participants
Total	150	78	72
Male	85	43	42
Female	65	35	30

## Data collection

Physiological data was collected at week one and 12 of the project; psychological data was acquired via questionnaires and focus group interviews at the same time. Artist and schoolteacher observation records were also utilised in observing changes in behaviour and attitudes from a qualitative perspective. Participants also kept weekly diaries with directed activities such as goal setting and nutrition planning, led by the artist and school teacher, to assist in the understanding of dance for health and to assist students in conceptualizing their changing attitudes and behaviours towards dance engagement.

Data was not collected in schools from week 13 due to funding restrictions. However, all groups performed at a regional youth festival in week 21, and interview data was acquired from performance participants and audience members as a means to explore the predictors of dance behaviour change.

## Physical data measures

- Aerobic endurance: Bleep test (Loughborough, 1987)
- Hamstring and back flexibility: Sit and reach test (Wells and Dillon, 1952)
- Muscular power: Jump height test (Just Jump System, Probotics, Huntsville, AL.)

## Psychological wellbeing data measures

- Intrinsic Motivation Inventory (Ryan, Koestner and Deci, 1991)
- Self-Esteem Scale (Rosenberg, 1965)

## Behaviour change measures

- Attitudes to Dance (TrinityLaban, 2006)
- Children’s Attitudes Toward Physical Activity Inventory (Schutz et al., 1985)
- Theory of Planned Behaviour self-devised questionnaire (Adapted from Chater, 2006)



## Capturing perceptions of physical activity levels

We also collected data about the participants' existing physical activity and dance levels outside of school time at both data collection points. This data is presented below in figure 2.

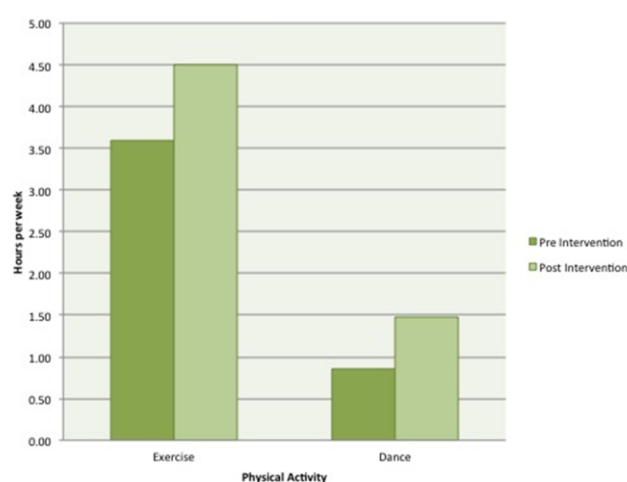


Figure 2: Changes in physical activity levels (experimental groups)

Participants reported being involved in physical activities such as football, playing in the garden and swimming, participating in approximately 3.5 ( $\pm 1.36$ ) hours of exercise per week prior to the intervention; this rose to 4.5 ( $\pm 1.36$ ) hours afterwards. It is not clear whether this rise is due to the intervention itself; teachers at the schools speculated that this may be due to the improvement in the weather and more outside activities becoming available in the spring months. However, some participants reported increased awareness of the health benefits of physical activity because of the dance project, and as a result were doing more exercise outside of school; "I feel more flexible from doing the dance workshops, and I've been working on that at home. I've built an obstacle course in the garden, do that and then do stretches to get better." A rise in hours of dancing is also evident at time two – participants reported rehearsing their dances and "practising the tricky moves" outside of class time. It is not clear from this study whether this behaviour continued after the project.

Although levels of physical activity rose over the duration of the project (be that dance or other exercise), these figures still fall short of the UK Government's recommendation of 60 minutes of physical activity per day (Department of Health, 2011).



The reason for capturing this information was to consider the extent to which levels of activity outside of the project might affect the results of this research. There are, of course, limitations in using self-report measures like this because often people forget what activities they might have undertaken. Definitions of physical activity may be blurred, especially amongst this age group, and periods of play and physical activity which are unplanned may not be counted in young people's self-assessment (Welk, Corbin and Dale, 2000).

## Physiological health: The results

### Aerobic endurance: The bleep test

Statistically significant improvements were seen across the control and experimental groups for aerobic endurance ( $p < 0.001$ ).

*"Me and my friends really loved knowing we were going to be tested again – it made us work ultra hard in the workshops with S, and try and jump as high as we could... it made me more determined."*

Male participant, Hertfordshire

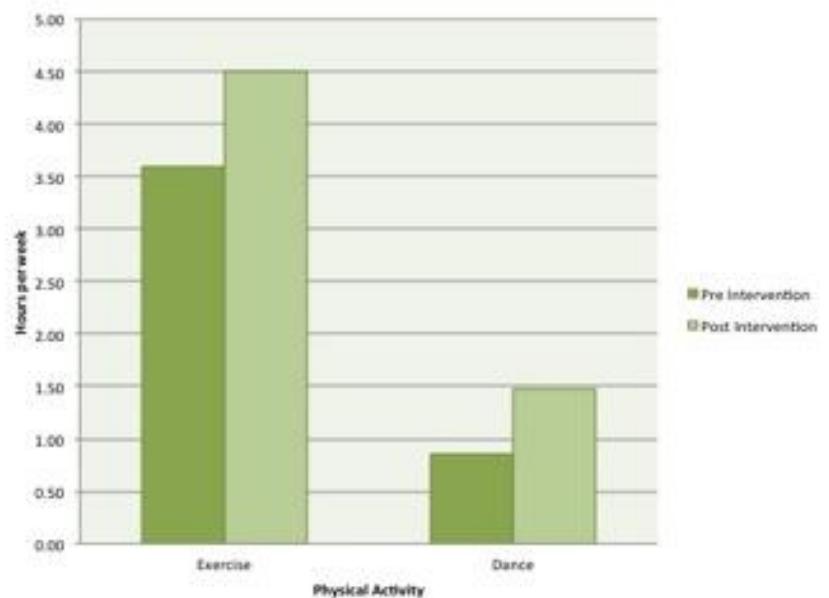


Figure 3: Changes in aerobic endurance

The changes here are not necessarily attributable to the intervention itself, but perhaps to increase in physical activity generally. Nevertheless, qualitative data mapped against this finding suggests that participants' awareness of their own fitness and their desires to improve were attributable to increased understanding and exposure to dance:

*"I'm more aware of what it takes to train my heart and lungs I think. I've been trying to run more and bike to school."*

(Male participant, Norfolk)

*"I've definitely been doing more, with my mum and dad and sister, at the weekends and stuff. Or if I eat rubbish food, I'll try and make the effort to do something, not always though. I could do better!"*

(Female participant, Essex)

*"In talking with students, I hear stories of 'making an effort' and the importance of being active for health, for feeling better about yourself and having a sense that you can achieve anything if your body and mind are on top form, fit and ready to go. That's a change in perceptions for many students who might have sat in front of the TV or computer – whether they actually do it is another matter! But the intention appears to be there, because of the discussions we have been having on the project."*

(Teacher conversation, Norfolk)



# Physiological health: The results

## Hamstring and back flexibility: The sit and reach test

Girls’ hamstring and back flexibility across the experimental and control groups was significantly improved ( $p=0.02$ ) during the intervention period.



This finding is consistent with previous research (Blazy and Amstell, 2010; Quin, Redding and Frazer, 2007). As stated in previous research (Cornbleet and Woolsey, 1996), there are apparent gender differences in hamstring and back flexibility during childhood, where females are significantly more flexible than boys when tested using the sit and reach protocol ( $p<0.001$ ). This may explain why we see higher flexibility scores for girls pre-and post-testing in this and other studies.

Due to the activity levels outside of this project, it is not wholly clear whether improvements in flexibility can be attributable to the intervention in this case. However, the artists leading the project included dynamic stretching in their warm up activities each week, and allowed time for static flexibility stretches at the end of the sessions. Flexibility was discussed as a component of fitness in the workshops, and featured in 42% of the girls’ diary goal setting. Artists witnessed participants practicing their stretches with friends (not necessarily participating in the intervention) at break. Again, it may be that whilst the sessions themselves did not bring about the changes in flexibility, the associated educative benefit of the project in school and increased participant understanding may have elicited these findings.

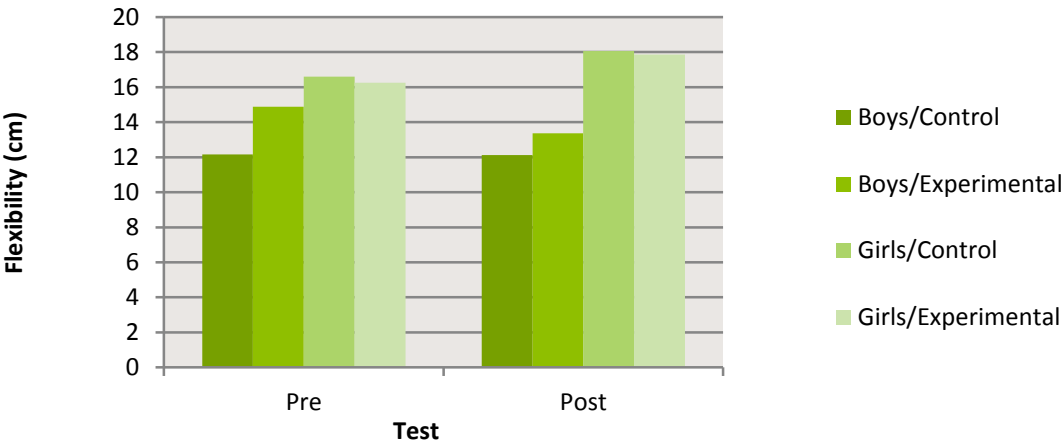


Figure 4: Changes in hamstring and back flexibility

# Physiological health: The results continued



## Muscle power: The jump height test

Jump height, as an indicator of explosive muscular power, was significantly improved across the experimental and control groups from the pre-testing to post-testing period ( $p=0.01$ ).

Again, changes over time were not necessarily dependent on the experimental conditions. As children grow, the potential for explosive muscular power increases as body mass increases (Praagh and Dore, 2002). These findings may be attributable to the physical growth of the participants in this project.

Yet similar arguments may be proposed as above. The educative influence of the project across the schools may explain these changes over time; *"it's like S says, you have to work hard to see improvements, it means practice, practice, practice – I feel like I have achieved something"* (female participant, Norfolk).

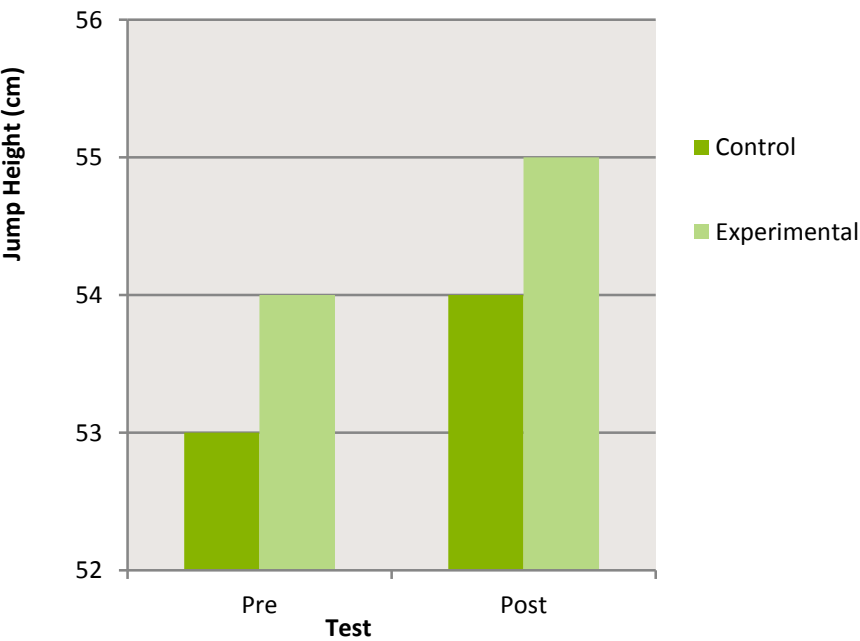


Figure 5: Changes in muscular power

# Psychological wellbeing: The results

In common with previous dance-specific studies in this age group, perceptions of psychological wellbeing were measured using the Intrinsic Motivation Inventory and Self-Esteem Scale (Connolly et al., 2010; Quin, Redding and Frazer, 2007).

## Intrinsic motivation

There were significant differences between scores at pre- and post-testing for the interest/enjoyment ( $p<0.05$ ) and effort/ importance ( $p<0.01$ ) subscales across experimental and control groups. Pressure/tension saw significant differences between gender and experimental condition ( $p<0.05$ ).

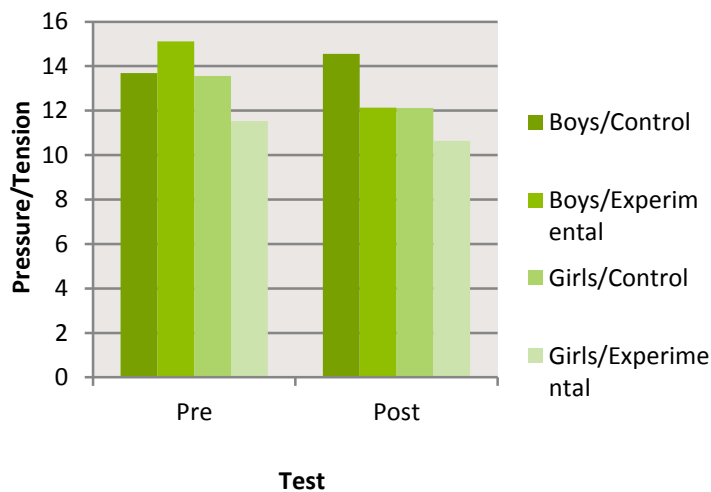


Figure 6: Changes in pressure and tension as indicators of intrinsic motivation amongst boys

Intrinsic motivation is defined as the desire to do something for personal reward rather than external benefits (Ryan and Deci, 1985) and is considered integral to sustaining long-term participation in an activity and psychological wellbeing (Reis et al., 2000). The Intrinsic Motivation Inventory was used in this study to examine four subscales representing interest/enjoyment, perceived competence, effort/importance and tension/pressure.

Perceptions of pressure/tension increased amongst male control group participants, whereas this subscale decreased amongst males dancing in the experimental group. For females, the pressure/tension subscale decreased in both control and experimental groups. The pressure/tension subscale is typified by questions such as 'I felt tense whilst doing dancing.' Deci and Ryan (2011) propose that the pressure/tension subscale is a negative predictor of intrinsic motivation, suggesting pressure and tension that is perceived by the individual and placed on themselves rather than pressure coming from an external source such as a teacher or peers.

It could be concluded therefore, that creative dance has the potential to improve perceptions of pressure/tension and thus levels of intrinsic motivation amongst male children.

## Self-esteem

No significant changes in global self-esteem were found as a result of this project. Perceptions of self-esteem were positive throughout the project; scores at pre- and post-testing remained high.

*The festival effect* (Weed, Mansfield and Douse, 2009) is a phenomenon which suggests that mega events such as London 2012 can inspire people in our communities who are inactive and perhaps put off by the competitive aspects of sport, to take up other forms of physical activity. One of the Go Dance project's aims was to see if increased exposure to dance, as part of a regional project, might address this.

By utilizing the Theory of Planned Behaviour as a theoretical framework, we planned to ask questions which would allow us to understand the predictors of the type of behaviour change which the *festival effect* suggests. We devised our own questionnaire which asked about the children's attitudes to dance and physical activity, the people and things which influence their behaviour choices (subjective norms) and their perceptions of the control that they have to carry out a particular behaviour, in this case dance. We also asked about their intentions to carry out the behaviour and we asked them about the actual behaviours they did. Broadly, attitudes, subjective norms and perceived behavioural control predict intentions which, in turn, predict behaviour. See page 8 for a diagrammatic representation of the theory.

In order to make sense of this, we asked the same questions at the pre- and post-testing periods. We were unable to collect behavioural information at a third timepoint to make sense of the children's intentions in relation to their actual behavior at time two due to funding limitations, but we have related some of the qualitative interview data to this.

### At time one (January 2011):

As data collected at this time point was baseline, we combined data from the control and experimental groups to see if there were any other changes over time. Attitudes, subjective norms and perceived behavioural control predicted intentions to dance and intentions predicted that behaviour, predicting 39% of the variance. This means that 39% of the reasons that the children wished to dance can be explained by these cognitions.

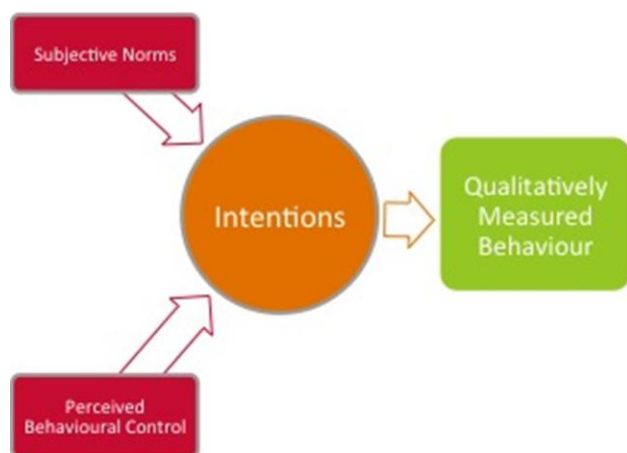
In comparison with previous research amongst childhood populations, this level of variance is high. For example in a study by Hagger et al. (2001) 30% variance was seen across the same cognitions.

*"I can see changes in the young people's attitudes to physical activity and their health more generally; they are making informed choices here"* Teacher, Essex.

## Changes in predictors of behaviour change

### At time two (April 2011):

At post-testing we see a change in the cognitive predictors of intention.



The cognition of attitude has dropped away and is no longer a significant predictor of intentions at time two. In examining the mean scores for attitude at time one, we see that attitudes towards dance were high across both groups, and amongst male and female participants. Although curricular dance in the schools was limited and there was an identified lack of dance provision in these geographical areas, student's attitudes towards dance were positive. Perhaps dance is well-placed in these locations to get children moving in line with the propositions set out by the *festival effect*.

At time two, we see subjective norms and perceived behavioural control continuing as cognitive predictors of intention. The change in statistical significance of the importance that subjective norms play in predicting intention, increases.

At time one, the statistical significance of the predictive value of subjective norms is  $b = 0.29$ ; at time two this increases to  $b = 0.49$ . It would appear that the importance of social influences becomes a stronger predictor in both the experimental and control groups over time.

The qualitative data that we collected from interviews, some of which is presented below, reiterates the social nature of the project across the schools. Perhaps the reason that we did not see many changes as a direct result of this intervention is that regardless of whether children were in the control or experimental groups, they sensed the 'event' of the Go Dance project in their school and at the youth festival. The presence of the artists, the regular workshops and anticipation of working together towards a performance opportunity for both groups may have influenced their cognitions and intentions to engage in that behaviour, as proposed by the *festival effect* itself.

This is, of course, inherently problematic when trying to 'control' the factors which govern physical activity experiments such as the Go Dance project. Yet, the project co-ordinators, partners and researchers felt that the educative value of all participants developing an embodied understanding of dance as a potentially powerful influence in physiological health and psychological wellbeing was far-reaching and hopefully sustainable for their future 'healthy' lives.

*"There's something about dancing that's exciting. I like the build up before the lesson, getting ready and practicing with my friends."*

Female participant, Essex

*"Mr K is different now – he loves to talk about the project. And he looks quite proud of us in the lesson. I like it best when we make our own moves and put it together, and sometimes we make up new bits in the playground."*

Female participant, Hertfordshire

*"Yeah, my mum likes dancing and she's glad there is more chance to do it at school now. She asked me to show her what we did today and then started doing it in the kitchen – I liked showing her but [it was] embarrassing when she did it."*

Male participant, Norfolk

*"I'm really looking forward to doing the dancing after Easter – the others have said it's fun and they have learnt how to do new moves."*

Male participant, Essex

## The demonstration effect: Some thoughts

### Children performing

The groups who had not participated in the experimental sessions between January and April 2011 were invited to participate in weekly sessions with the artists between May and July, as part of developing a sustainable dance infrastructure in the locations in which the Go Dance research project had taken place. A further 46 children took part in this phase of the project, working towards a youth festival performance on 2<sup>nd</sup> July 2011 in Brightlingsea, Essex.

We interviewed the groups for a third time, asking them about their perceptions of dance, having performed in front of a large crowd and been a part of a large youth festival event.

*"performing as part of a large event like this is inspiring, and having that goal to work towards makes me want to do it more definitely."*

### Audience reactions and attitudes to dance

We also interviewed 36 audience members between the ages of 10 and 51 years old during the Go Dance performances in Brightlingsea, to find out their thoughts about dancing for health and whether seeing young people dancing might inspire them to do the same.

Seventy-six percent of those interviewed, stated that music was highly influential in getting them dancing, that the rhythm encouraged them to move their body.

Many of the older audience members (30 years +) felt that they might be embarrassed to perform in public, but did recognize that dance was a means to improving health and fitness. Many mentioned the current Zumba craze as a means to getting moving themselves. They were inspired by the young people's commitment and courage to perform challenging dance material in front of a largely youth-oriented audience. One adult female interviewee aged 42 said, *"if I could overcome my self-consciousness, then I would certainly be inspired to dance like this myself, yes."*

Younger audience members were inspired by the performances too, especially those who were nearer the age of the performers themselves. *"They really looked like they were having fun, trying really hard. That was inspiring for me to have a go",* and *"I like it when they do bigger moves, stunts and stuff like that – that's cool. I'd like to think I could do that."* There are tangible links here with theories which underpin the learning of new skills (Weiss, 1993) and developing perceptions of self-efficacy amongst groups (Bandura, 1994). Schunk and Hanson (1985) found that children realised higher levels of self-efficacy and achieved more effectively when taught skills via peer-modelling activities rather than teacher-led approaches to learning. In the case of the Go Dance project, it might be suggested that by seeing people like themselves succeed in a challenging situation, audience members might be more inclined to participate in a similar way.

The demonstration effect requires further examination in this context. Qualitative data from this project suggests that performers may be well-placed to inspire behaviour change amongst those who are not already dancing.

*"It does kind of make me think that if they can do it, then so can I."* Audience member, aged 12



## Summary of findings



### How does a creative dance intervention impact on the physical health of children aged between 10 and 12 years old?

Statistically significant improvements were seen in aerobic endurance and muscular power across all groups. Females' hamstring and back flexibility, in both groups, significantly improved over the duration of the project too. From a qualitative perspective, participants reported greater awareness of dance as a healthful activity, and efforts to improve their lifestyle by engaging more in physical activity outside of school. School teachers also reported discussions with students about engaging in physical activity and dance in particular, its effects on the physical health of the body and plans of how they might be able to integrate this into their lives.



### How does a creative dance intervention impact on the psychological wellbeing of children aged between 10 and 12 years old?

Perceptions of pressure/ tension (as a subscale of intrinsic motivation) were significantly improved amongst male members of the experimental group. This suggests that creative dance has the potential to reduce perceptions of pressure and tension and improve levels of intrinsic motivation amongst boys. Some of the school teachers reported improved behaviour and focus in other lessons, particularly amongst the male students. These students were seen to persevere for longer than perhaps they might have done previously. These findings resound with previous dance writings (Carter, 2004; Hanna, 2001) and warrant further empirical study.



### What are the predictors of dance behaviour change amongst this population and how might these relate to notions of the festival effect?

The predictors of behaviour change altered over time in both groups, with the importance of subjective norms increasing over time. The importance of social grouping and the development of the 'team ethic' seems to be embedded in the likelihood that the children in this project will develop intentions to be involved in dance. This is a common emergent theme in dance psychology research at the current time (Nordin-Bates and Urmston, 2011) and again warrants further examination.



### How might a large-scale youth dance performance influence their continued participation in dance and that of the audience watching them?

Audiences appear inspired by the courage, commitment and energy of young people performing in front of their peers, although it is not clear whether this will get audience members actually moving themselves! Music was cited as the most common inspiration to dance across all interviewees. Younger participants were inspired by impressive movement skills, especially if the people doing the dancing were similar in age to them. Notions of the demonstration effect require further longitudinal study, perhaps examining the differences between recreational and elite dance performances as catalysts for people to participate themselves.



## Conclusions



The impact of the Go Dance project has been complex to unpick, drawing from a range of quantitative and qualitative information to paint an interwoven web of understanding and experience from the children's, teachers' and artists' perspective. What is clear is the educative value of a project like this being placed in locations where there is little existing dance provision and positive attitudes to dance as a healthful activity. Interview data from the children in all three counties would suggest that this educative value is far reaching, as they describe their parents, family and friends talking about dance, physical activity, health and wellbeing beyond the actual dance sessions themselves. This appeared to extend to other classes and year groups across the schools that we were working in; an excitement and energy built towards the project, where other groups were excited about their own prospective involvement and others wanted to see and hear about the activities that were happening in class. We might conclude that the *festival effect* was flourishing in this context!

As such, controlling the parameters of the testing and intervention from a scientific perspective was compromised and this is borne out by the quantitative results; changes were seen across the control and experimental groups over time, physical activity levels and dance participation rose between January and April, and so attributing the changes to the intervention alone must be done with caution. Yet changes and improvements **did** occur, and in terms of the health and wellbeing of these particular youngsters now and potentially in the long-term, this project has had a measurable impact.

Further research should seek to examine the long-term effects of increased provision and dance participation in locations such as those in the Go Dance project. What happens to children's participation over time, especially when mass events such as London 2012 are not on the horizon? If the provision is there, how does their experience and perception of dance for health alter in the long-term? What are the differences between recreational and elite performance as inspiration for those who are less active to get up and move? As ever, this study throws up new lines of enquiry for the future for us to better understand participation patterns amongst our communities. There is no doubt, however, that the evidence base for dance as a physical activity which promotes health and wellbeing, is growing and warrants further investment for projects of this kind which can be thoroughly researched and evaluated.



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