An investigation into whether there exists a relationship between a child's drop-out levels from physical activity and their academic achievement

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Abstract
The overriding aim of this investigation was to determine whether or not a correlation exists between a child's drop-out level from physical activities and their academic attainment. The sample population consisted of 114 Primary 6 pupils, 57 females and 57 males, aged 9 to 10 years. These individuals attend five schools across Northern Ireland, from a variety of social backgrounds in both rural and urban settings.

For the purposes of collecting information pertaining to the chosen sample pupils, each individual completed a questionnaire detailing their current levels of participation in and their dropout rates from sporting/physical activities, including the type of activity in which they partake. Academic attainment was measured using standardised scores for the Progress in English (PIE) test. Stanine bands were used to group the standardised scores into three categories consisting of low, middle and high ability. Once the data was gathered, the results were added to a database using Microsoft Excel and presented in a variety of graphs to allow ease of comparison and analysis.

The study revealed that there was little correlation between the pupils' drop-out rates from physical activity and academic attainment. The study did however reveal that although drop-out rate may not produce a correlation, the current levels of participation do have a positive relationship with academic attainment.

Key words
Activity; Physical activity; Drop-out; Academic attainment.

Introduction

Background to the Study

The Northern Ireland Curriculum (2007) for Primary Education outlines its principal aim; "to give every pupil the opportunity to experience success in learning and to achieve as high a standard as possible." At present, numerous barriers exist which prohibit children from performing to the best of their ability. These factors can affect a pupil's level of achievement; they include their social class, religion and gender (Burns et al., 2015).

Participation in physical activity has been strongly associated with having a positive impact on the academic performance of pupils. Kohl et al. (2013) highlights that physical activity is imperative to a child's social, physical and cognitive ability. Bradley et al. (2013) support this claim and further adds that it promotes benefits for motor skills and prosocial behaviour; all of which contribute to academic progression. Reports from Trudeau and Shepherd (2008), Bradley et al. (2007) and Woods et al (2010), all echo the same conclusion; that there is a strong, positive correlation between participation in physical activity and academic attainment.

It has also been documented that the vast array of reasons that exist which result in children's dropout rates from physical activity, make the issue as whole much more complex to address.

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Studies have found that pupils tend to drop out of physical activity in the 'exam years' with the intentions of improving their own academic attainment. Lunn et al. (2013) stated that "The public examination system has a strong negative impact on participation in sport: students are far less likely to participate during exam years…" Dropping out of activities in order to focus on improving academic performance is in direct contrast to the evidence that previous research has found; that physical activity has a beneficial impact on academic performance.

Need for the Study

The World Health Organisation (WHO) (2010) reported that, "levels of physical inactivity are rising in many countries with major implications for the general health of people worldwide…" Not only does a decrease in physical exercise have a detrimental impact on a child's overall health, but also it could potentially have a negative impact on their academic achievement.

There have been numerous investigations into the correlation between participation in physical activity and academic attainment. Wilson (2009) concluded that "The benefits of participating in extracurricular activities included having better grades, having higher standardised test scores and higher educational attainment…" There are also a number of studies which investigate the factors that affect children's drop-out rate from sporting/physical activity.

There is, however, a lack of research that directly investigates the correlation between the drop-out from physical activity and academic attainment. A study is necessary to determine if dropping out of physical activity has an impact, either positive or negative, on pupil's academic achievement. It is anticipated that this research will be beneficial in building upon existing research, which strives to improve academic performance and address the attainment gap within Northern Ireland.

Aims and Objectives

The aim of this study is to investigate the relationship between Key Stage 2 pupils' drop-out rate from physical activity and their academic attainment. The objective is to establish whether a direct positive correlation exists between the variables.

Children's level of physical activity is a prevalent issue in our society today as the WHO (2010) asserts that, "The scientific evidence available for the age group 5–17 years supports the overall conclusion that physical activity provides fundamental health benefits for children and youth." Yet, Woods et al. (2010) recorded that only, "19% of primary… school children met the Department of health and Children physical activity recommendations".

The information found within this study will be gathered and analysed from a sample of Primary 6 pupils from across Northern Ireland. There will be a total of 114 pupils; 57 males and 57 females. Individual questionnaires will be used to collect information regarding pupil's level of activity and their drop-out rates. Standardised scores for Progress in English tests will be collected from the teachers in order to assess academic attainment.

This information will then be added to an Excel document. With the use of a range of graphical representations, the results found will be interpreted and analysed in relation to the overall aim of this study; to determine whether or not there is a correlation between children's drop-out rate from extra-curricular activities and their academic attainment.

Review of Literature

Drop-out of Sporting Activities

Drop-out is defined in Collins dictionary as a verb meaning, "to abandon or withdraw from". 'The Children's Sport Participation and Physical Activity Study' (CSPPA) (Woods; 2010) defined physical

activity as "any bodily movement that is produced by the contraction of skeletal muscle and that substantially increases energy expenditure" The Department of Health and Children's guidelines currently recommends that children participate in a minimum of 60 minutes of physical activity a day.

According to a report by True Sport (2012), there are a multitude of reasons why children drop-out of sport:

- Pressure
- Confidence
- Specialisation
- Academic Attainment
- Parental involvement
- Changing schools

The reasons are varied which therefore makes addressing them complex. Nelson (2015) states that a key motivator for children taking up a sport is enjoyment, fun and provision of intrinsic reward. This is supported by the Irish Sports Council's (2010) vision that, "young people will see sport as an integral and enjoyable part of their lives." However, as they progress through the sport or as they move up age groups in the same sport, it becomes increasingly competitive and the original 'fun factor' that was once a reason for taking part has now been lost and rather it has now become a burden. An over emphasis is placed on winning and increasing pressure is being placed upon players by coaches, parents and team mates (Cope et al.; 2013).

'The Get Active – Stay Active, Children and Young People' study carried out by Sport Northern Ireland (2011) noted that children's competence and confidence levels whilst participating in physical activity would, in turn, have a positive effect on their likelihood of maintaining this physical activity throughout their lives. Children strive towards the mastery of a skill and are therefore motivated to become competent in a sport (Cope et al.; 2013). This competence and confidence comes from developing physical literacy skills. Sports N.I. (2011) define physical literacy as "The ability to use body management, locomotor and object control skills in a competent manner with the capacity to apply them with confidence in settings which may lead to sustained involvement in sport and physical recreation." Children who are physically literate will then be able to carry out a range of skills appropriate to their age. Woods et al. (2010) support the need for competence and confidence when engaging in physical activity, commenting that extra-curricular activities provided by the school provide a safe way for children to be introduced to sport in order to develop these. As confidence and competence build so too does the enjoyment, reinforcing their original view.

The need for this confidence could be interlinked with the 'relative age' effect among children. Lunn et al. (2013) commented on how there was a trend which had been established in a study, that those born later in the academic year tended to have a higher drop-out rate from competitive sports. This could be attributed to the fact that that size and strength are often a contributing factor to performance in particular sports. Children who drop out may not have the confidence in their ability and by comparing themselves subsequently choose to leave the sport rather than persevere and build upon their skills.

Parental involvement can also become a factor in reasons for dropping out of physical activity. If a parent is uninvolved or shows little interests in the child's sport, then this is likely to have a negative demotivating effect on the child (Cope et al.; 2013). Parents can be enablers or barriers to initial participation and sustained participation. As mentioned previously parents can also become over involved placing a lot of pressure their child and therefore the child may associate that sport with

negative connotations. A balance must be found in order for the child to remain motivated and enjoy their sport.
Manuel et al. noted (2009) that 'early specialisation' is another reason for drop-out from physical activity, therefore it does not necessarily lead to a decrease in how active the child may be in general. When a child finds a sport or activity that is suited to them and they begin to thrive and develop through the years they may want to become more focused and dedicate their time solely to one specific activity. Bailey et al. (2010) also add that certain sports such as gymnastics require early specialisation. This could lead to an increase of activity but a reduced variety. Early specialisation, however, can have a negative outcome as it can result in over training that may lead to injuries which consequently force the child to drop-out of that sport. The National Association for Sport and Physical Education (cited in True Sport; 2012) highlights that, "Year round specialisation in a single sport is more often associated with developmental risks than rewards." It was also concluded that training programmes and sports developments discourage year-round specialisation (True Sport; 2012).

Children may also drop-out of activities to give their time to a non-sporting activity such as their studies. Increasing pressure of exams has an impact on students and their commitment to sport. Many may give up their sport for a year or two and re-join or they may have this intention yet do not return.

Another factor, which is prominent in drop-out research, can be a change of life circumstances. Particularly prominent is the transfer from primary to post-primary. Numerous studies show that within multiple physical activities there is decreased participation with age. (Lunn et al., 2013; Woods et al., 2010). Although drop-out may increase it does not always result in inactivity. Lunn et al. (2013) found that 1 in 10 pupils have dropped at least one activity come the end of their first year in secondary school. However, it must be noted that most of them are participating in multiple activities and drop one or more when they get to secondary level. There is also the possibility of 'sampling', Côté (2009) stated that the sampling years are from age 5-12. This is where children join a variety of activities offered to them and subsequently drop those they feel are not suited to them.

There may be an accumulation of reasons as to why drop-out is so high especially during the transition from primary to secondary school; children find their free time is reduced, they have a longer journey home from school and there is competition between leisure activities and the students time now (Lunn et al.; 2013).

Academic Attainment
The education system in Northern Ireland has been widely commended internationally in recent years for providing an education of a high standard for the young people of this state. Students in the North repeatedly outperform their counterparts in other areas of the British Isles. The results show that schools based here are consistently outperforming their counterparts in England, Scotland and Wales. In August 2016 the Belfast Telegraph and BBC News both report that the number of entries achieving A*-C in GCSE's in Northern Ireland had risen to 79.1% which is significantly higher than the average across England, Wales and Northern Ireland of 66.9%. The Irish News in August 2015 also reported that Northern Ireland again surpassed the rest of the UK in their A Levels.

This high standard of education also holds true at an international level. 'Progress in International Reading Literacy Study 2011 (PIRLS)' was a study carried out with forty-five countries participating. The results of this further support the trend of high academic performance in NI, ranking the fifth top achieving country. In the 'Trends in International Mathematics and Science Study 2011 (TIMSS)' Northern Ireland, again, came in the top 10, ranking the sixth top achieving country out of fifty.

Therefore, there is a proud heritage and strong tradition of valuing educational attainment in N.I. Every school has a statutory responsibility to assess their pupils annually and at the end of each Key Stage. The 'Guidance on Assessment in a Primary Schools' (CCEA, 2013) defines "…assessment as the systematic collection, interpretation and use of information to give a deeper appreciation of what pupils know and understand, their skills and personal capabilities, and what their learning experiences enable them to do." These standardised tests are then implemented in primary schools as a form of assessment and levels, ranging from 1-5, are then chosen for each child based on these results. CCEA has issued 'Levels of Progression' in relation to 'Communication' and 'Using Mathematics' in order to aid the teacher in assessment. These levels then must be reported to NICCEA, the governors and parents. As outlined by the 'Guide to Assessment' (CCEA, 2013) document, pupils at the end of Key Stage 1 expected to be achieving Level 2 while at the end of Key Stage 2 children are expected to be gaining a Level 4. Taking in to account that there will be some low achievers, underachievers and high achievers the guide also states that each individual should aim to progress at least one level.

The general teaching Council N.I. (2011 [cited in CCEA, 2013]) stated that "Assessment is a key professional competency" and crucial part of any child's learning. It requires teachers to set targets, involve the pupils in assessing their own learning and identify steps to improve.

Despite close proximity, society in Northern Ireland is unique in comparison to England, Scotland and Wales for a number of reasons, particularly the fact we live in a post-conflict society where religion and cultural background remain a dividing factor that has influenced our education system greatly. This is highlighted by the fact we have controlled schools and Catholic maintained schools.

One factor in educational attainment across NI is social class. Social class and the education of a child has been a contentious issue for centuries worldwide. Cole (2006) explains this claim writing; "If you want to know how well a child does at school, ask how much its parents earn. The fact remains after over 50 years of the welfare state and several decades of comprehensive education, that family wealth is the single best predictor of success in the school system." This is not to say that all children from poor or disadvantaged homes will not achieve or succeed in education. Children are individuals and they have some degree of responsibility over their own learning. However, the patterns which have emerged in Northern Ireland are clear and show that social class is a significant factor in educational attainment. Across both sides of the religious divide in Northern Ireland there is a correlation between those children who receive free school meals and their level of educational attainment. The Dawn Purvis Report, 'A Call to Action' (2011) and the Equality Commission (2008) found that a total of 75% of lower than expected performing schools were in the controlled sector, most of which were clustered in Belfast. In each of those schools, 50%+ pupils were eligible for free school meals, which is a high sign of social deprivation. Figures can be found to support this in the 'Every Child an Equal child' (2008) statement released by the equality commission; 26% of pupils who received FSM gained 5 or more GCSE's A*-C grade compared to the 51% of those pupils who do not.

There are interrelated factors for those who are on low incomes and risk of underachievement. Arguably more concerning is the link between Protestants and the working class in Northern Ireland. Purvis (2011) focuses on this issue and concludes that, "If we are to achieve the significant change that is clearly required to reduce educational disadvantage…we must start with the Protestant working class." The report claims that it is not the case that non-denominational secondary schools are underachieving or failing the pupils they serve, rather there are other community and cultural factors which impact on how Protestant families perceive education and perhaps this explains the poor attainment levels. For example, previous generations of Protestants were the desired workforce over Catholics in the manufacturing industries of the country, which meant schooling or

education was not necessary. The collapse of these industries has resulted in some factions of the Protestant community with a redundant set of skills/abilities. The report adds; "The special geography of urban Protestant communities means there are some pockets of deprivation surrounded by more affluent areas rather than concentrated areas of disadvantage which can lead to a weaker community infrastructure than in Catholic districts."

It should also be noted that trends have emerged highlighting that gender has an influence on academic underachievement. Many reports and statistics, such as the Key Inequalities statement released by the Equality Commission (2015) have reported the trend that "There is persistent underachievement and lack of progression of working class Protestants, particularly males." Of all the education groups male Protestants who were entitled to FSM achieved less than any other main social group in Northern Ireland and were least likely to go on to higher education, as stated by the Peace monitoring report (Nolan, 2014) and Burns et al. (2015). This, in turn, has an impact on the community composition of the graduate labour market, a cycle which will continue to repeat itself until it is broken by change.

Although not all possible explanations for these results have been covered, it stands to reason that some of the factors are interrelated and consequentially this is the pattern that emerges.

Correlation Between Drop-out and Academic Attainment

Studies and surveys have found that sport promotes movement and the development of gross motor skills from a young age. This is reinforced by Kohl et al. (2013) as they state physical education is of great importance to the physical, cognitive and social aspects of a child's development. Merkel (2013) highlighted that students also demonstrate improved skills in "goal setting, time management, emotional control, leadership, wisdom, social intelligence, co-operation and self-exploration." Many of these are transferable skills which can then be used across the curriculum and in turn affect academic performance. Kohl et al. (2013) add to this noting that physical activity can be associated with benefits for the child's social and emotional well-being.

Woods et al. (2010) stated that there is a notable decrease in the numbers participating in sporting activities during exam years, therefore, it could be said that academic attainment is a factor in drop-out. The 'School Leavers Survey' (SLS) and the 'Children's Sport Participation and Physical Activity Study' (CSPPA) (cited in Lunn et al.; 2013) support this statement with their figures displaying a visible decrease in the level of participation as the child progresses through school and state examinations draw closer. Both studies found that the highest level of participation took place in the first year of post-primary with SLS recording 44% and CSPPA recording 51%. This dropped significantly in the 6th year to 30% in the SLS and 28% in CSPPA study.

The case may be that the pupil is taking part in more than one activity and therefore may be reducing the number of activities of activities they take part in in order to spend more time on their studies. The study carried out by True Sport (2012) identified that 20% of pupils, aged 8-17, surveyed said that 'wanting to focus more on school work' was their reason for no longer playing a sport. This was in addition to traditional reasons for drop-out including lack of enjoyment (27%), new preferred pastimes (23%) and lacking competence (21%).

This trend is mirrored in the provision of physical education by schools as Woods et al. (2010) reported that in 2009, 4th year students received on average 94 minutes of physical education a week compared to 6th year students (exam year) who only received 54 minutes on average a week. It was reported that in some schools pupils were not scheduled for any P.E class. Woods et al. (2010) presented data that illustrated that 31% of females and 24% of males in year 6 were not timetabled

for any P.E class. This is in contrast to those in year 4 who all received P.E ranging from single periods to triple.

Parents also play a role in children dropping-out of sport in order to focus on their studies. Parents are putting an increasing amount of pressure on their children to succeed in school. Children, in turn, feel this pressure and it can lead to negative impacts such as quitting their extracurricular activities so that they can dedicate more time to their work. These impacts can also have an adverse effect as the Guardian (2016) commented that it making learning and playtime stressful is counterproductive, "The more stress hormones swarm children's brains, the less likely they are to succeed intellectually". Although intentions are good it is imperative that parents are careful not to have unrealistic expectations for their children, but rather positively support them, in order to motivate their child to achieve academically.

While the pursuit of academic attainment is a frequent feature in drop-out this is in direct opposition to numerous studies. Trudeau and Shephard (2008) articulated that there was a strong positive correlation between academic performance and physical activity. Woods et al. (2010) would agree as they note that there is a positive association between playing sport and exam performance, across all years, with both males and females who played sport at second level obtaining a higher GPAV in their Leaving Certificate, although the effect is greater among females. Males who played sport had a GPAV of 7.0 compared to 6.8 average of those who did not. Females who did not play sport too had a GPAV of 6.8 while those who did play sport had GPAV of 7.7. Smyth et al. (2001 [cited in Woods et al.; 2010]) found that those who participated in sport "suffered less stress during exam years." Therefore, this would have a positive impact during their exam periods. Bradley et al. (2007) concluded that their findings suggested, "…that participating in extracurricular school sport whilst studying for Leaving Certificate secondary school-leaver examinations can benefit academic achievement."

Methodology

Research Design

Hussain (2011) defined research as "a systematic activity directed towards the discovery and development of an organised body of knowledge." Clough and Nutbrown (2012) highlighted that "…It is not so much to prove things, but more to investigate questions, enquire into phenomena and explore issues." The main objective of this study is to investigate as to whether there lays a correlation between children's dropout rate from physical activity and their academic attainment. In order to attain reliable results it is important to ensure that research techniques and methods are researched and that the process is carried out professionally and methodically.

Research methods are frequently referred to as being either quantitative or qualitative in nature. "There is no one 'better' approach, rather the approach should be dictated by the research question." (Jones et al., 2003) Quantitative research is, "the use of numerical measurement and analysis…" For the purpose of this study quantitative research was deemed to be the most appropriate to achieve the aims of investigation.

In order to gauge the child's level of drop-out from physical activity they will receive an individual questionnaire. This will be used to record what activities they are currently involved in and what activities they have dropped-out of.

Subjects

Within this study there are 114 subjects; 57 male and 57 female. The sample size is composed of Primary 6 pupils ranging from the age nine to ten. The subjects span five different primary schools across Northern Ireland, in both rural and urban settings.

Procedure

To ensure that the research that is going to be undertaken is ethically appropriate a number of procedures must be put in place. Hammond (2012) states that in order for research to be ethical respect should be shown to those individuals in not only how the procedures are undertaken but also in "…the purpose of the research, who benefits and how it is reported.". Full, unambiguous consent will be required from all pupils before taking part in the research and confidentiality will be respected through the use of a subject code, following the guidelines laid out by The British Psychological Society (2010).

Prior to collecting results required for this investigation, it was important that formal consent procedures were followed. Firstly, it was essential that approval was given from the principal, class teacher and the parents of the children participating in the study. A letter was sent to each principal to ensure that permission was obtained before proceeding with the investigation. Included in the letter were details about the objective of the study, what was expected from the school and pupils involved. It also ensured the confidentiality and professionalism with any of the information gathered. Another letter was then sent to parents/guardians of the children partaking in the study. This letter outlined the purpose of the study, who would be conducting the study and what information would be required regarding their children. Each letter had a consent form attached, which had to be signed and returned to the school in order for their child to be able to take part. Once the school granted authority and forms were returned the collection of the data could take place.

Test

In order to complete the research process three variables were investigated. The variables are current levels of extracurricular physical activities, drop-out rate and finally academic achievement.

Testing Levels of Drop-out

Cohen et al. (2007) identified a questionnaire as, "a widely used and useful instrument for collecting survey information…" This approach was used to gather information on the children's participation in sport to date, which they had dropped out of and why. The results were recorded in an excel spreadsheet to allow for ease of analysis through graphs.

Testing Academic Achievement

The standardised test for Progress in English (PIE) is "part of a selection of standardised tests". (GL Assessment, 2008). It was used to assess the participants' levels academic achievement as it is an assessment of pupils' technical English skills and reading comprehension. Teachers use these standardised scores to track pupils' progress and aid them in their target setting and planning.

This form of recording allows for comparison of pupils within a sample. Standardised scores take accountability of pupil's ages, comparing them with peers the same age. Stanine bands are a method of scaling scores, pupils are placed in a band ranging from 1 (low) to 9 (high). The method of stanine bands was employed in order to group the subjects' standardised scores in to three categories of ability; low (level 1-3), middle (level 4-6) and high (level 7-9).

The teachers from each class participating in the study provided the pupils' standardised scores in English at the last time of testing, Primary 5.

Statistical Analysis

In order to determine if there is a direct correlation between the subjects drop-out rate from extracurricular physical activities and academic attainment, results will be calculated using formulas in Microsoft Excel.

Results and Discussion

Introduction

Within this section the data collected, based on one hundred and fourteen subjects under investigation, will be outlined in order to support the overall purpose of this study. The objective of this study is to investigate the existing relationship between children's drop-out from sports/physical activities and their academic attainment in Key Stage 2 (KS2). Questionnaires were employed to determine the extent of drop-out and Progress in English (PIE) results were collected from the class teacher for the purpose of measuring academic attainment. When analysed, these results should provide an understanding as to whether there is a case to suggest that academic attainments is impacted by drop-out compared to those subjects who do not participate in physical activity or exercise as regularly.

Subjects

The subjects involved in this investigation were Key Stage 2 pupils from Primary Six classes. There were 114 subjects (n=113), 57 of which were male and 57 of which were female. The subjects attended five different schools in Northern Ireland in rural and urban settings and were from different socio-economic backgrounds.

Current Activities

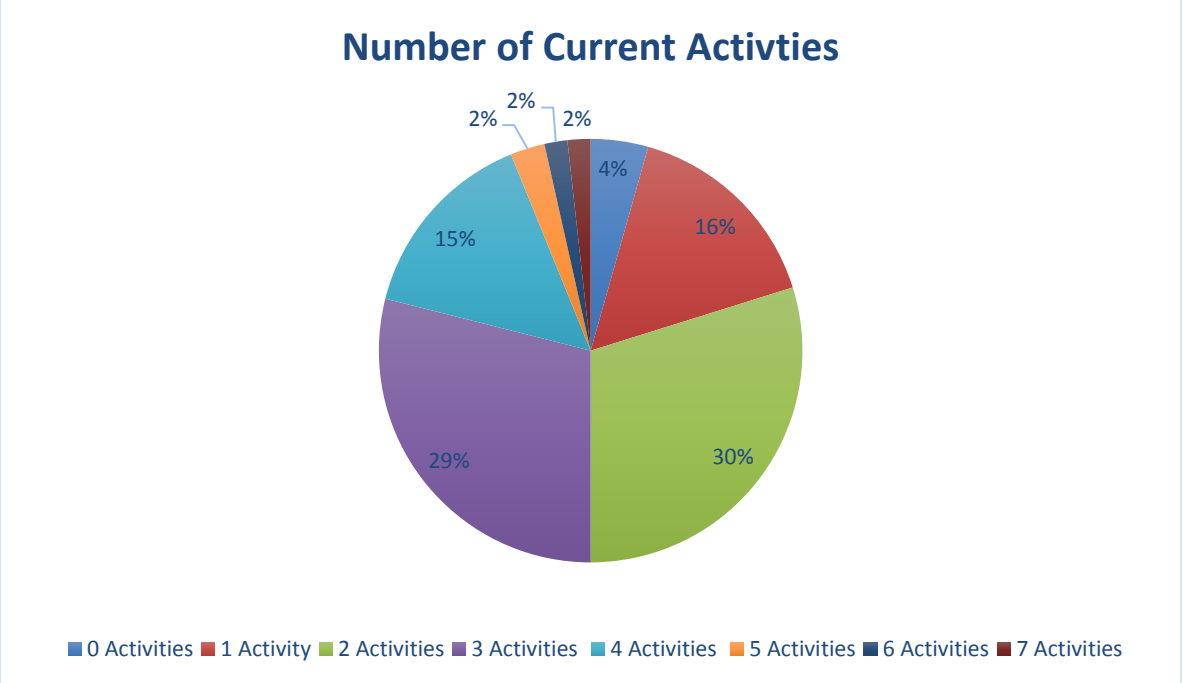

Fig 1. The Number of Current Activities Subjects Participate In.

The diagram in figure 1. illustrates the number of activities that 114 pupils participate in regularly. Subjects are currently engaged in 294 activities, averaging 2.58 activities per subject.

Overall 96% of the subjects take part in one or more activities. The majority, 30%, of the subjects participate in two activities. The high percentage of children taking part in physical activities could be accredited to the increased funding that has be allocated to sports projects in last 7 years. In 2012 Sports NI indicated that in the previous 3 years £68,143,471 has been provided in sports funding,

with around 47% of this allocated to grassroots projects (Cited in Hull, 2012). There have also been numeracy reports and sports strategy put in place over the years including the 'Grassroots Sport in Northern Ireland' (2012) and the 'Sport Matters' strategy (2009) which have a common goal, to increase and sustain the number of children taking part in active extracurricular activities.
One possible justification for the 21% of subjects who participated in 4 or more activities, is that the subjects in this sample population, aged 9-10, all fall under the 'sampling years', according to Côté (1999). During these years parents allow children to sample a wide range of sports and activities so that they may gain and experience fun through sport rather than focusing on competition or intense training. At this age the child's motivation is enjoyment.

It is also worth noting that team activities such as Gaelic and hurling are seasonal activities and therefore are not played all year round. With other individual activities also being offered such as dancing, martial arts and swimming children are encouraged to remain active throughout the year and not just stay focused on one specific sport or activity. This increases the number of activities that a subject is involved in, but it does not necessarily mean they participate in them all at the same time of year.

In this study 4% of pupils do not participate in any physical activity. This does not however mean that they do not participate in any extra-curricular activities. The Department of Education Extended Schools programme allocated money so that schools may fulfil the Northern Ireland Curriculum (2007) mandatory aspect of providing children with a variety of extra-curricular activities. These extra-curricular activities extend beyond just physical activity, they include drama, art etc. It may also be the case that the subject prefers and finds more satisfaction in these areas and pursue these instead. Non-sporting activities may also be more readily accessible in certain areas therefore the subject would join these activities rather than those sporting activities that are further away.

The subject's location and the accessibility of facilities and activities in their area will have influence on the number and type of past times that subjects partake in. The Sport Matters strategy (2009 [cited in Hull, 2012]) stated that 35% of the population lived more than 20 miles away from an accredited, high quality facility. If a subject lives in a rural setting it is more likely that fewer activities will be offered in their area, resulting in them having to travel further afield so that they can be involved in certain sport or activity. Due to this increased traveling parents have to give up their free time as well as having to incur higher financial costs. The Sport Matters strategy (2009) noted that in terms of sporting facilities, "Northern Ireland is under-provided for in comparison with other regions in the UK and Europe". The further away a facility or activity is the less likely the child is to join or continue their participation.

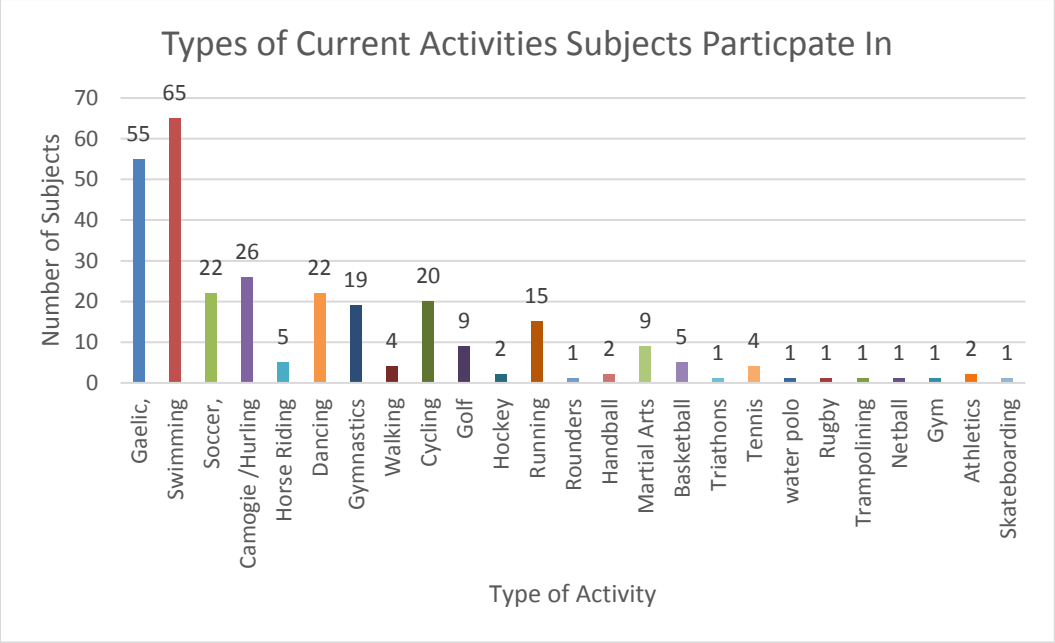

Fig. 2. The Types of Activities Subjects Currently Participate in.

The wide range of activities that children partake in is a positive aspect of this research. As previously outlined fun and enjoyment is a motivating factor in children's decisions to participate in or opt out of an activity (Woods et al., 2012). Having a variety of activities offered is important as it increases the likelihood of the child finding an activity which they enjoy and subsequently one that they will continue to participate in in years to come. The variety attempts to address and promote the issue of lifelong participation. Sport Matters (2009) emphasises how clubs and schools nurture the child's development and lay the foundation for life long participation. This falls into the guidelines of the current Department of Health and Children (cited in Woods et al., 2010) who recommend that children participate in at least 60 minutes of moderate to vigorous exercise daily. They also state that, "This activity should be developmentally appropriate, involve a variety of activities and should be enjoyable." This is supported by the work of NICE (2009) where they state that, "Children and young people need to participate in a wide range of different physical activities."

Gaelic and Swimming have the two highest participation levels with 55 and 65 subjects taking part respectively. Both of these activities are usually made available during the school day and after school. This increases the amount of time the subjects have had to engage in these activities and promotes their continuation outside of school. Sport Matters (2009) highlighted that a strong relationship between the school and the clubs encourages pupils to seek to continue the sports they are enthusiastic about outside of school. This is supported by Lunn et al. (2013) who stated that "better links are needed between schools and sports clubs." This can also be linked with the accessibility previously discussed. Hull, 2012 highlighted that in order to improve social inclusion there is a need to "develop and disseminate standards for accessibility of sport, leisure and recreation organisations, activities, events and venues…"

Drop out

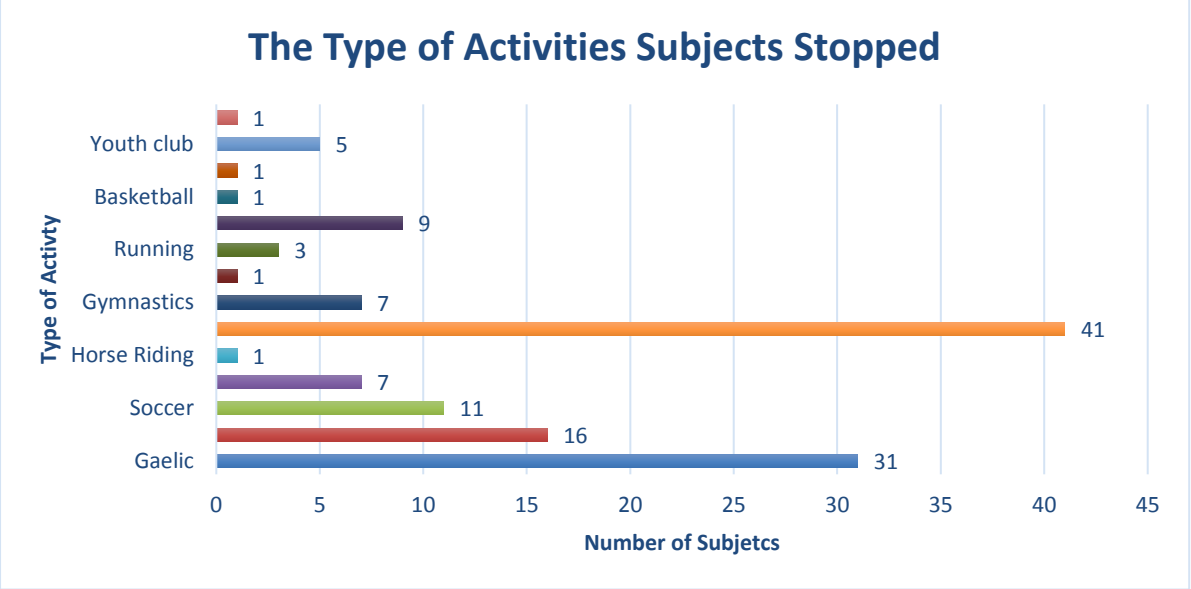

Fig. 3. The Types of Activities Subjects Dropped.

From the sample population a total of 143 activities were reported stopped, each subject on average dropped out of 1.25 activities. Gaelic football has one of the highest proportions of drop-out, 31 subjects dropping-out, yet it also has one of the highest current participation levels, with 40 subjects. Throughout Ireland today almost every town and village has established their own GAA headquarters. The GAA seeks to promote the Irish culture by building upon the history and success of the Gaelic Games. The GAA club has become "the bedrock of every Irish community" (GAA, 2016) and it provides a strong social network and helps to sustain a sense of community and heritage. Within these communities joining the local club and playing one of the GAA games has become part and parcel of growing up.

The subjects would have ease of access due to the sheer number of clubs throughout Northern Ireland, thus it becomes a natural progression that, when of age, children will join their local team. There is also a strong link between the schools and local clubs, with outside coaches coming in to teach during physical education lessons and these activities also being offered after school. There is also a social aspect, as they can meet with their friends and form new ones outside of the school environment. The Sport and recreational Alliance (2012) found that "Four in five (81%) sports club members say they make friends through their exercising"

Brustad (1992 [cited in Cope et al, 2013]) stated that "parents have considerable influence on their child's motivation to take part in sport." If they have a link and passion with the GAA then they will encourage their child to have this same passion and drive for it. It becomes that there is no determined intent by the child, but rather the parents and society have an influence. With the increased availability and promotion of Gaelic games both from school and parents at home a greater number of subjects have, at one stage, participated and therefore the probability of subjects dropping-out from that activity increased.

Dancing, Irish dancing in particular, has the highest drop-out rate but it does not, like Gaelic, have high levels of current participation. Irish dancing is time consuming and requires dedication, from a young age it is a very competitive sport with children taking part in competitions as young as 4. As it is an individual as well as a team sport there is increased pressure on the individual to perform well and their level of self-awareness is increased. If they are not succeeding in competitions then this lowers their perceived competence becomes a negative factor which can result in drop-out

(Fairclough, 2003). This comes from developing literacy skills but if children become aware of their ability at a young age they have not had sufficient time to develop these skills. Woods et al. (2010) emphasised the need for a child to have competence and confidence while engaging in physical activity. If the child does not possess this then it becomes a demotivating factor which results in drop-out.

Dancing and Gaelic had the largest portion of drop-out, need to address issues. Dancing and Gaelic football have the largest portion of drop-out rates. They need to address the issue of high drop-out in order to promote lifelong participation as put forward by the Sport Matters strategy (2009).

To date there are a number of activities which have no drop-outs for or very few for instance cycling. It has a current level of 20 subjects participating and to date no drop-outs in the sample population. Drobnjak (2016) pin points some of the life-long skills that cycling promotes such as balance, bilateral co-ordination and strengthening of the muscles. The statics show that subjects are continuing to participate in this sport.

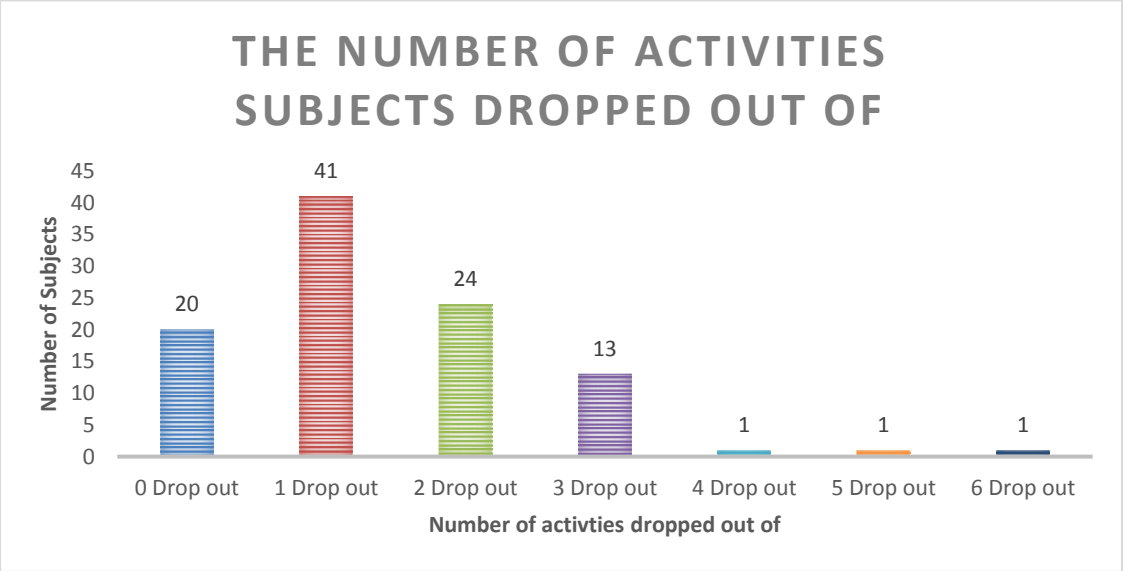

Fig. 4. The Number of Activities Dropped Per Subject.

From figure 4. it can be observed that fewer subjects took part in a greater number of activities originally with 7 taking part in 5. The low results for 4 or more activities dropped can be explained through the small numbers who participated in a greater range of sports originally. The results highlighted that 3, out of a potential 7 subjects, dropped 4 or more and still participate in at least one.

Literature supports the claim that children sample physical activities so that they may find one that they enjoy and would like to continue playing. This could account for a number of the 143 activities dropped as children tried and tested to find what suits them. Allender et al. (2006) found that participation is greater when children are encouraged to experiment with different activities and seek enjoyment. Enjoyment is the main motivator when children begin a sport but it is also the main reason for drop-out. Children in their latter years of 'sampling years' find less enjoyment in sport compared to those in the early stages this is due to their emotional development and social awareness; they become more aware of their own capability, the competitive element and their social gain through friendships (McCarthy and Jones, 2007). Therefore, if the enjoyment and willingness is lacking then it is more likely the activity will be stopped.

Early specialisation is another factor which contributes towards drop-out. Côté et al. (2009) noted that the term early specialisation implied "a focused involvement on one sport and a large number

of deliberate practice activities with the goal of improving sport skills and performance during childhood." This is interlinked with sampling and enjoyment factors. When a child finds a sport they are enthusiastic about during their sampling years and enjoy then they may decide to focus on that one activity and for this reasons will stop other sports and activities to allow them time to do so.

Progress in English

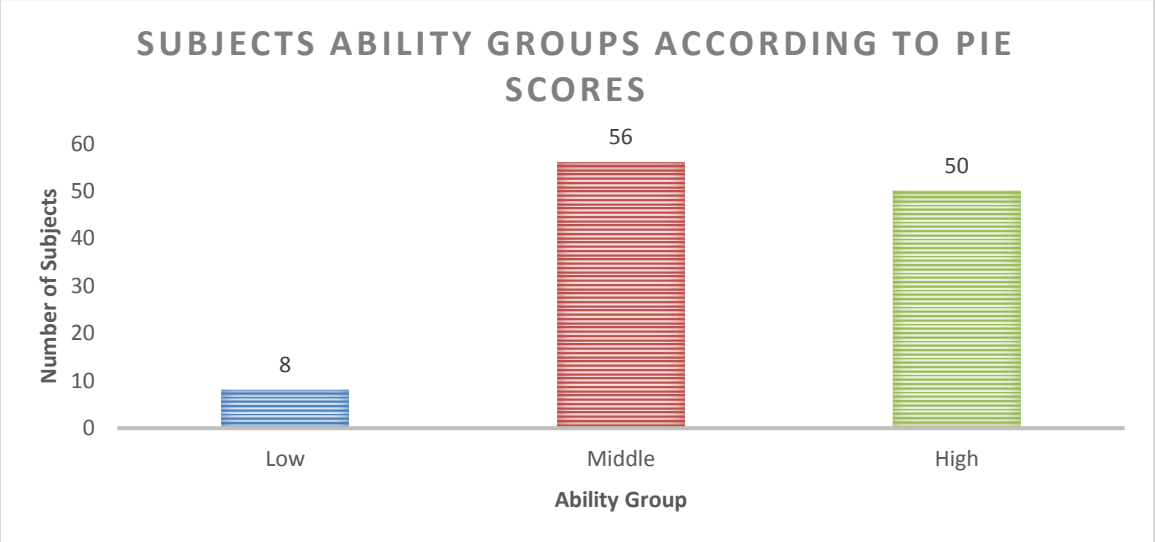

Fig 5. Subjects' Ability Groups Based on PIE Standardised Scores.

Standardised test scores for Progress in English (PIE) were collected and recorded for the purpose of evaluating academic attainment. Overall scores ranged from 69-141, the average score for the 114 subjects was 109.42. The subjects' scores were grouped and categorised in to ability based on stanine bands, these groups are high, middle and low ability.

In the sample population 8 out of 114 subjects were placed in the low ability group. It is worth noting that not all the permission was not given for all pupils in the class and therefore the overall academic attainment of the sample population may be skewed.

At the same time there has been an improvement in early diagnosis of SEN and early intervention has taken place accordingly. There is improved provision and support for pupils with SEN and Learning difficulties with the establishment of the Children's Services Co-operation Act 2015 and the SEND Act which encourages greater co-operation between organisations to develop plans and resources for pupils (Perry, 2016). Consequently, these improvements work towards aiding pupils with SEN or learning difficulties to perform to the best of their capability and potentially reducing the number of subjects who are in the low ability group.

The significant number of subjects in the middle and high ability group, 56 and 50 respectively, can be attributed to the work of the Department of Education (DOE) and the Schools themselves. Departments are constantly looking at ways to improve and aid pupils as they progressed through school. These statistics compare favourably with the work of the 'Every School a Good School: A Policy for School Improvement' that has been put in place by the DOE since April 2009. It set out key principles for schools to address centred on its vision "To ensure that every learner fulfil ls his or her full potential at each stage of her or his development." Other strategies implemented include 'Count, Read Succeed' (2011) and 'The Signature Project' (2013-2014), both of which targeted improvement numeracy and literacy. The work of these policies are reflected in the results found in the sample average.

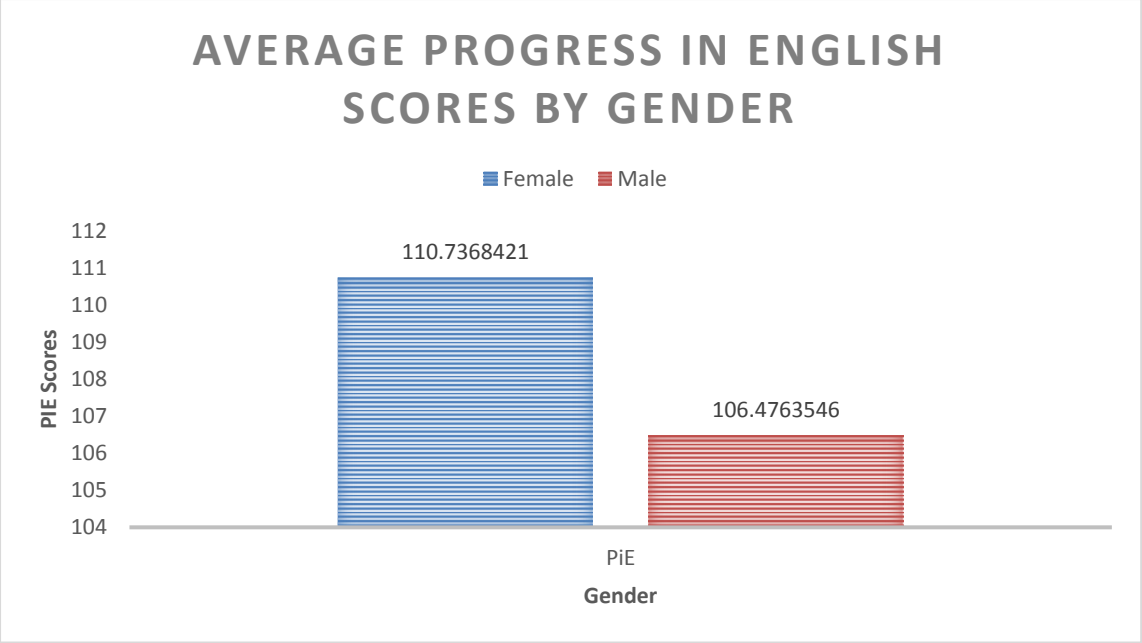

Fig 6. Progress in English Scores by Gender.

Overall females have a higher average PIE score, 112.74, compared to males, 106.48. These results are consistent with the gender inequality figures put forward in the 'Education Inequalities in Northern Ireland' Report (Burns et al., 2015). In KS2 females dominated in 2011/12 with 87.6% achieving a Level 4 or above in English, in comparison with 78.3% of males The 'Peace Monitoring Report' (Nolan, 2012) and the 'Inequalities Statement' (Equality Commission, 2015) back up these figures as they stated that there was "persistent attainment gap between males and females, and the fact that this gap consistently increased, to the detriment of males"

Progress in English Relative to Participation/Drop-out

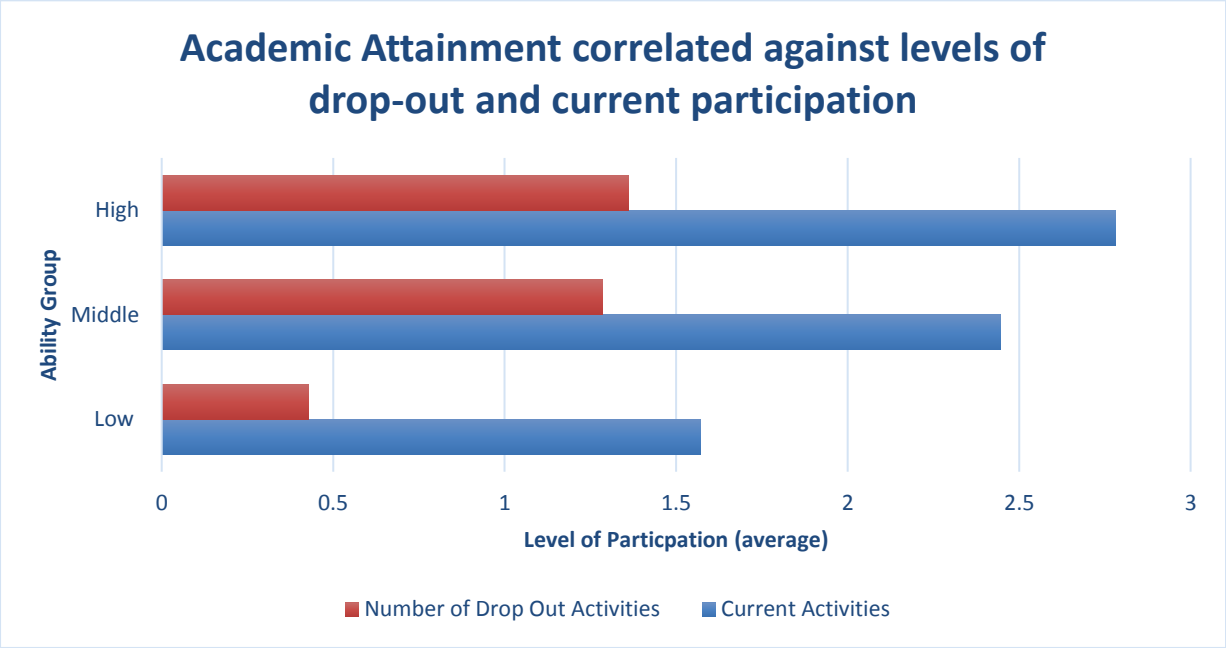

Fig. 7. Level of Participation Based On Ability Groups.

It is evident that those subjects in the high ability group had the highest levels of participations with an average of 2.75 activities per subject. In spite of this they too had the highest portion of drop-out

averaging 1.36 drop-outs per subject. The drop-out rate between the highest and middle ability groups are very similar with only 0.07 of a difference. The inverse can be observed in the below low attaining group; they have the lowest participation levels, 1.57, but also the lowest levels of drop-outs, 0.43.

From the statistics of the sample population the drop-out rate does not have a positive or negative impact on academic attainment. There is however a correlation that appears in regards the current level of activity and academic attainment. Those subjects who take part in a greater number of activities have higher academic attainment, while those who take part in fewer activities have lower academic attainment. This evidence advocates the ample literature, such as Woods et al. (2010) who supports the view that physical activity has positive effects on overall academic performance, including test results.

Overall the study did not provide evidence that there is a distinct correlation between children's drop-out rate from physical activities and their academic attainment but it did however highlight a positive correlation between current levels of physical activity and academic achievement.

Conclusion

After undergoing extensive research into participation in physical activity, drop-out from physical activity and its effect on academic attainment, data was collected from a sample population to explore the variables. This data was compiled and arranged into forms of graphical representation to allow for comparison and analysis. Following analysis the results illustrate that there is no strong evidence that suggests the drop-out rates from physical activity affects academic performance. However there is evidence that supports a positive relationship between levels of current activities and their academic attainment. Therefore, it can be concluded that it is not necessarily the level of drop-out that has an impact on physical activity, but rather the remaining level of activity that will have correlation with academic attainment.

Previous research carried out by Wood et al. (2010) and Lunn et al. (2013) agreed that pupils dropped out of physical activity during the exam years but there was no evidence to prove that this resulted in higher academic attainment. On the contrary this research also found that those who participated in physical activity achieved better academically. Woods et al. (2010) articulated that there was a positive association between playing sport and exam performance across all years, this is support by the research of Trudeau and Shephard (2008).

Recommendations

Having completed and reflected on this investigation, there are a number of recommendations to be made to result in a more reliable study. Overall this was a small scale study consisting of only 114 subjects. In order to produce more valid results a larger sample population would be required. Level of physical activity and drop-out rates is one of the variables of the data which was collected. These results were gathered in the months of November/December which are outside the season for many outdoor activities. These results, for that reason, may not have represented a true illustration of pupils' activity levels and drop-out rates.

Previous research from Lunn et al. (2013) and Woods et al. (2010) found that drop-out from physical activity is more prevalent in the 'exam years' in a post primary setting. Further study with a sample population from post-primary pupils in years 12 to 14 may produce a stronger correlation than a sample from primary school.

Limitations

From carrying out this investigation it was apparent that there were some limitations which subsequently affected the outcome of the results produced. As previously mentioned this was a small scale study of 114 participants. To obtain more accurate results and see a wider overall picture sample size should be increased.

The results were collected over a period of a day, gathering data over a longer period of time would have yielded more comprehensive results, providing a richer depiction of the amount and types of activities participated in and dropped-out of. Due to time constraints however this was not possible.

As identified earlier, the data was collected in November/December meaning that the PIE results received from the teacher would have been from the previous academic year (year 5) and may not be an accurate representation of the subjects' current levels of academic achievement. Another limitation was that not all of the permission slips from every class were returned, this in turn may skew the overall academic attainment of the sample population.

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