

THE INTERNATIONAL JOURNAL OF HUMANITIES & SOCIAL STUDIES

Participation of Students with Visual Impairments in Physical Education Activities in an Inclusive Senior High School in Ghana

Alice Avornyo

Staff, University of Education, Winneba, Ghana

Adam Awini

Lecturer, University of Education, Winneba, Ghana

Ephraim Quaynor Teye

Technical Assistant, University of Education, Winneba, Ghana

Mavis Saforo

Senior Research Assistant, University of Education, Winneba, Ghana

Deborah Patience Ashietey

Programmes Coordinator, Reach for Inclusion, Ghana

Benedicta Akley-Quarshie

Student, Kansas State University, Manhattan, Kansas, United States

Abstract:

The purpose of the study was to find out the extent to which students with visual impairments participate in physical education activities in Wenchi Methodist Senior High School in the Brong-Ahafo Region of Ghana. Data was gathered from 60 students with visual impairments and two tutors teaching physical education. One-on-one interview and questionnaire were used for the data collection. The study revealed that, students with visual impairments participated partially in all the aspects of physical education activities such as, gymnastics, ball games, athletics and physical fitness activities. The study also found out that the level of participation was not different for those with low vision and their colleagues who are totally blind. The researchers recommended that resources should be provided for students with visual impairments, in order to fully participate in intensive physical education activities

Keywords: *Physical education, students with visual impairments, sports participation, disability and sports, inclusion in physical education activities*

1. Introduction

Physical education is included in the school curriculum at the secondary education level in Ghana. Its purpose is to make students understand the relevance and benefits of engaging in physical education activities, as well as make them exercise for physical fitness for healthy life towards academic work. By the demand of Ministry of Education (2010) the time allocation for physical education in the teaching syllabus for physical education for senior high school students in Ghana is 80 minutes per-week. The Persons with Disabilities Act (PDA) 715 of 2006 and the Ministry of Education (2013) also provided the rights for children with disabilities including those with visual impairments to have equal opportunities in participating in physical education activities.

The recommendation of physical activities for health promotion requires that children should be involved in at least 60 minutes of moderate to rigorous physical activities (Miles, 2007; WHO, 2010). Yet, a research conducted by Bingham, Boddy, Ridgers and Stratton (2015) indicated that, most children with disabilities especially those with visual impairments normally engage in less than 60 minutes of the recommended physical education activities of their lesson time compared to their sighted peers.

The education of students with visual impairments in the regular school system is becoming very effective (Lieberman & Haibach, 2014). However, these students mostly get limited opportunities for participation in physical education activities, be it for leisure, recreation or for competition (Willing, 2016). This may be because teachers do not make physical educational activities interesting, fun, and motivating enough to inspire participation, which results in students with visual impairments ending up not being engaged in physical educational activities (Fragala-Pinkham, O'Neil & Haley, 2010). Rockson (2014) also contends that lack of careful planning and consideration by sighted peers and teachers of students with visual impairments leads to non-participation in social activities in inclusive schools.

Participation in physical education activities as explained by the World Health Organization (2007) has to do with the nature and extent of a person's involvement in life situations, and includes activities of self-care, mobility, socialization, education, recreation and community life. Participation in physical education activities therefore help students to build positive relationships, positive self-esteem among themselves, enhance their mobility, reduce self-withdrawal and boost their confidence in their day to day activities. Durstine, Painter, Franklin, Morgan, Pitetti and Roberts (2000) also noted that the main goals for the increase of physical education activities in children with visual impairments are to reduce their mobility impairment to improve physical functioning and the general well-being of the children.

There are many physical education activities in which students with visual impairments can participate in the regular schools if well planned (Willing, 2016). These activities help in the development of physical and motor fitness and skills in dance, games and sports. Gymnastics, ball games, athletics and physical fitness activities may include some physical education activities students with visual impairment can fully participate in, with their sighted mates in the regular classroom if well adapted.

1.1. Statement of the Problem

In most regular senior high schools in Ghana where both students with and without visual impairments are admitted, it appears the students with visual impairments have little opportunities in participating in physical education activities such as Gymnastics, ball games, athletics and physical fitness activities. Whereas some researchers (Dakwa, 2011; Fekade, 2012; Gawlik & Zwierzchowska, 2006; Leiberman, Robinson & Rollheiser, 2006) have conducted studies elsewhere on the participation of students with visual impairments and other disabilities in physical education activities in the regular classroom, not much has been done in Ghana. The few studies conducted in Ghana were also focused on students with hearing impairments and other disabilities (Owusu, 2009). This study was therefore conducted to find out the extent to which students with visual impairments participate in the various physical education activities in Wenchi Methodist Senior High School in the Brong Ahafo Region of Ghana.

1.2. Research Question

One research question was raised to guide this study.

- To what extent do students with visual impairments participate in physical education activities in Wenchi Methodist Senior High School?

1.3. Hypothesis

- H_0 : There is no significant difference between the extent to which students with low vision and those with blindness participate in physical education activities.
- H_1 : Students with low vision participate more in physical education activities than those with blindness.

2. Literature Review

Participation in physical education activities play very important roles in the lives of students with disabilities. This is true, especially for those with visual impairments, since it makes them feel accepted and not discriminated against by their colleagues. Therefore, it is important that students with disabilities are allowed to experience positive interactions with their peers during physical education activities (Bebetosos, Derri, Zafeiraidis, & Kyrgiridis, 2013). The Ministry of Education (2010) made it clear that all students must be involved in all the aspects of the physical education activities mentioned above and this does not exclude those with disabilities most especially those with visual impairments. Below is the extent to which students with visual impairments participate in the various aspects of physical education activities.

2.1. Participation of Students in Gymnastics Activities

Gymnastics include stunts, combination of stunt activities, rhythmic activities, and traditional and social dances (Ministry of Education, 2010). Gymnastics is a major mean of teaching basic motor skills and health related fitness, yet, it is very challenging to teach by young teachers (Donham-Foutch, 2007). Donham-Foutch (2007) added that, in involving students in gymnastics, skills such as, running, jumping, hopping, leaping, sliding and galloping is very important. In addition to the above skills, Langton (2007) also mentioned skills that are needed in gymnastics and these include; travel, weight transfer, rolling, rocking, step- like actions, flight, climbing, balance off- balance, counter-tension, counter balance, spinning, circling, hanging, twisting, stretching, curling and swinging. Amade-Escot and Bennour (2016) also agreed with Langton (2007) when they stated that, in the national curriculum of Tunisia, some basic skills in gymnastics that students in the senior high school should be able to perform include forward and backward rolls, handstand and cartwheel.

Though gymnastics seem very difficult for students with disabilities, Ardito and Robert (2007) stated that it can be adapted to effectively involve students with visual impairments. They specifically stated that, when students with visual impairments are participating in gymnastics they may start with their hands positioned on the horse, floor competitors may also count their steps to the edge of the mat or different textured mats can be used and children on the balance beam can be warned when they are near the edge.

Herold and Dandolo (2009) argued that during an observation in their study in a gymnastic lesson, a teacher made it clear that, centrally devised resources suitable for gymnastics were not available for involving students with visual impairments in gymnastics. The teacher further explained that, specialist worksheets for gymnastics in braille or formats that the visually impaired pupils could understand and use independently were also not available. This means that without the help of any one or the available resources, students with visual impairments may not be able to participate effectively in gymnastics.

Most students seem to withdraw themselves when it comes to their participation in gymnastics which may be as a result of the activity being too difficult and does not involve activities that are fun (Fromel, Formankova & Sallis, 2002). Morley, Bailey, Tan and Cooke (2015) conducted a study on teachers' views of including pupils with special educational needs and or disabilities in physical education. The study was done qualitatively with purposive sampling as the sampling technique and interview was also used as the tool for collecting the data. One teacher each was selected from 43 states secondary schools in a large city in the North of England. The findings of the study revealed that gymnastics was one of the activities that pupils with special educational needs were easily included in the mainstream settings.

2.2. Participation of Students in Ball Games

Ball games which students are usually involved in the senior high schools in Ghana may include football, volleyball, handball, badminton, table tennis, tennis, netball and hockey. These games may be found in the physical education curriculum to create fun and enjoyment among students. Sit, Lindner and Sherrill (2002) however, noted that students with disabilities mostly prefer games such as basketball, soccer, goalball and badminton to other games. Pandey and Sardar (2015) also pointed out that, when students are involved in court and field games such as handball, football, volleyball, basketball and hockey, their strength and speed are developed.

One of the ball games which is goalball is a game specially designed for the full participation of people with visual impairments (Ardito & Roberts, 2007; International Blind Sports Federation, 2014). A study conducted by Gomes-da-Silva, Albuquerque de Almeida and Antério (2015) on bodily communication in the game of goalball, revealed that goalball was an educational game in which its coordination and communication is complex. Further, when students were engaged in goalball, it allowed them to extend their attention to their whole body. The study was a qualitative one with a descriptive design. From a population of four male and female teams, the male team made up of 22 athletes were purposively sampled. The data was also collected through training, pilot study, participants consent and interview. It was finally recommended that the game of goalball should involve sighted students as well.

Leiberman, Robinson and Rollheiser (2006) also conducted another study on the experiences of youth with visual impairments in general physical education classroom and it was revealed that students with visual impairments were denied in participating in physical activities such as football because the activities were not modified to suits them. Similarly, a study conducted by Dakwa (2011) on a reflection of teacher's perceptions on the inclusion of children with visual impairments in ordinary schools in 3 schools in Masvingo District in Zimbabwe revealed that students with visual impairments were involved in only paper football and volleyball though sports activities were the least they participated in the schools. The researcher purposefully sampled 15 teachers teaching students with visual impairments in the district using questionnaire as the tool for collecting the data.

2.3. Participation of Students in Athletics

People with visual impairments may be able to take part in many track and field events such a Javelin, shot put, club throwing, running, high jump and long jump. These events have been practiced by visually impaired athletes for many years (Sani, 2014). According to history athletics was not included in Olympic Games until 1896 in Athens, (Errey, 2016). Women were also not allowed to participate in track and field events until 1928 in Amsterdam. Track and field events were adapted to suit athletes with visual impairments in the year 1970 (Blazesport America, 2012). Blazesports America (2012) further mentioned similar track and field activities that people with disabilities including those with visual impairments can participate in but added that some adaptations were made to the events where necessary which sometimes made the rules more flexible. According to Errey (2016) modern athletic events normally take place around a 400-meter running track on which most of the running events take place. Errey added that, the field events such as jumping and throwing also often take place inside the track. Again, the United States Association of Blind Athletes (2016) suggested that for 50-meter race, a caller may be placed behind the finishing line, facing the runner in the fourth lane.

Field event may include long jump which can also be called broad jump (Naskar & Mondal, 2015) and may be in the form of running long jump and standing long jump or standing broad jump. In standing long jump, students may be assisted by teachers if the need arises. Students with visual impairments may participate in these events with little modification through verbal cues. But for those who cannot do it at all assistance may be needed from the teachers. Farrenkof and Mcgregory (2000) suggested that when assisting students with visual impairments who need more help in long jump, two teachers, one holding the student's left arm and the other teacher holding the right arm, assist the students to swing his or her arms as he or she prepares to jump, the teachers support the student by guiding his hand and arm and forward while he or she lands in a sand pit. In high jumping for students with visual impairments the use of a one-step approach is more appropriate Montagnino

(2001). The author added that, the hop, step, and jump can be attempted from a standing start. Further, provision of sound source from the direction the students should move to is also very necessary (Montagnino, 2001).

Gawlik and Zwierzchowska (2006) conducted a research on a comparison of chosen strength abilities in deaf and blind adolescents. The participants consisted of blind adolescents in group B and deaf adolescents in group D and healthy subjects which formed the control (C) group, all aged 16- 17 years. All the groups were selected purposefully because the researchers selected only adolescents who were completely blind since birth and adolescents with deafness above 80dB. One of the results however revealed that in standing long jump, blind adolescents (both boys and girls) performed worse compared to the deaf adolescents of the same age. The boys with deafness were also close to those of healthy boys. The results of females with deafness were very poor. The adolescents who were blind were significantly worse in the standing long jump in comparison to the healthy subjects. The researchers recommended that for running long jumps, students with visual impairments may run the length of the ramp and then jump without anyone's help with the use of a verbal cue. Farrenkof and McGregory (2000) added that for students with low vision, the ramp could be highlighted with a florescent chalk along the vertical line to show where the students should run.

2.4. Participation of Students in Physical Fitness Activities

Physical fitness has to do with the ability of a person to perform daily tasks regularly and still have more energy left for recreation and leisure activities (Ministry of Education, 2010). Physical fitness may include all the physical activities that make students fit to perform physical education activities. Both students with visual impairments and those without visual impairments may perform physical fitness activities effectively when involved. Even though, one of the characteristics of students with visual impairments is that their physical fitness levels are below that of their sighted peers (Wind Gap Middle School, 2016). Lieberman (2002) pointed out that many people with visual impairments face various challenges when socializing with other people in the community when it comes to recreation and fitness activities.

Lieberman, Stuart, Hand and Robinson (2006) argue that students with visual impairments are able to reach the level of physical fitness that can be compared to their sighted peers when they are allowed to participate in physical education activities. Also, Caliskan, Karagözoglu, Kayapinar, Erzeybek and Fisekcioglu (2007) pointed out that though students with visual impairments have lower levels of physical fitness, there are some students with visual impairments whose physical fitness levels are higher than their sighted peers. Hopkins, Gaeta, Thomas and Hill (1987) carried out a study on physical fitness of blind and sighted children. With a random sampling technique, the researcher selected 27 students with blindness, they used a questionnaire to assess both students with visual impairments and those without visual impairments in physical fitness. The findings revealed that students with visual impairments were less fit compared to their sighted peers due to their lower level of regular engagement in physical education activities.

Another study conducted by Szekeles and Dorogi (2002) confirmed that people who take part in sports on regular basis do not only experience an increased level of physical fitness but also become more self-sufficient and are able to perform better than before. These people may include people with visual impairments. A study conducted by Colak, Bamac, Ayin, Meric and Ozbek (2004) on physical fitness levels of blind and visually impaired goalball team players revealed that students who were goalball players were significantly physically active than their peers who did not play in the goalball team. A quantitative approach and survey as design was used with a total of 103 participants with visual impairments who were volunteers with 51 goalball players and 53 people who were not goalball players. The researchers used the non-parametric to gather the information from the participants. It was further recommended that sports should be used as a rehabilitation method for students with blindness to develop their physical capacities and have a better control of their body.

Furthermore, Demirturk and Kaya (2015) conducted a study on physical education lessons and activity status of adolescents with visually impairments and sighted adolescents in a secondary school for the students with visual impairments in Tokat, Turkey. The study was conducted on 53 adolescents that comprised of 22 adolescents with visual impairments and 31 sighted adolescents. A questionnaire was used as the main data collection too. The study revealed that, the activity level of children with total blindness was lower than that of children with low vision. It was recommended that, children in the secondary school, especially those who are visually impaired, should be motivated and encouraged to take part in various sports or physical activities to help them increase their activity levels to the recommended levels that promote health benefits.

3. Methodology

3.1. Research Design, Population, Sample Size and Sampling Technique

The descriptive survey research design was adopted for the study. The design was adopted because it allowed the researchers to compare responses concerning the purpose of the study.

The population for this study included all students with visual impairments and all teachers teaching physical education at Wenchi Methodist Senior High School in the Brong Ahafo Region of Ghana. The total population therefore was 65 respondents which comprised 60 students with visual impairments and five tutors teaching physical education in the school. The sample for the study was made up of 62 respondents in the school. This comprised all the 60 students with visual impairments and two physical education tutors. Purposive and census sampling were used for selecting the respondents for the study. The

tutors were purposively selected because of their experience, whilst the students were sampled using the census approach because of their limited number.

3.2. Instrumentation

The instruments used for collecting the data for the study were semi-structured interview guide and a close ended questionnaire. The researchers used interviews because it encourages participants to speak out so that the researchers can learn what the range of views of the participants are, in order to generate a collective rather than an individual view of a phenomena.

The questionnaire, with Cronbach's alpha value of 0.86, was a close-ended type in the form of a 5-point Likert scale. It contained 11 items which were built on four variables. These were participation in gymnastics, ball games, athletics, and physical fitness. Response levels ranged from Strongly Agree (SA) = 5, Agree (A) = 4, Neutral (N) = 3, Disagree (D) = 2, and Strongly Disagree (SD) = 1.

3.3 Procedure for Data Collection

The questionnaires were administered to the 60 students. Prior to giving out the questionnaires, the researchers adequately explained how the respondents were to answer the questionnaire. The interview was also done face-to-face with two tutors in the Information and Communication Technology (ICT) laboratory and lasted between 35 minutes to 40 minutes. The respondents were interviewed each at a time in order to elicit correct responses and avoid the situation where one respondent's opinion influences the other respondents'. The responses were tape recorded for easy transcription.

3.4. Data Analysis

The analysis of data was done by analyzing the interview, followed by the analyses of the questionnaire. The interview data were transcribed based on the code for each interview. Using the Statistical Package for Social Sciences version 21.0 (IBM SPSS, 21.0), descriptive statistics were calculated to obtain the frequency and percentages for each item in the questionnaire. This was done to simplify the data. Also, the independent samples t-test was used to test the hypothesis for statistical significance. For the purpose of the discussions, the responses to "Strongly Agree" (SA) and "Agree" (A) on the likert-scale were combined as having the same idea and, those for "Strongly Disagree" (SD) and "Disagree" (D) were also combined to have the same idea. This was done to simplify the data for easier analysis and discussion.

4. Results

The qualitative aspect which was done through the interview was first analyzed, followed by the quantitative aspect which was done through the questionnaire.

4.1. Analysis of Qualitative data

4.1.1. To What Extent Do Students with Visual Impairments Participate in Physical Education Activities?

Four themes emerged from the analysis of the data. These included the extent to which students with visual impairments participate in gymnastics, ball games, athletics and physical fitness activities. The respondents who were the teachers were interviewed one-on-one at different times. Each teacher was asked to describe the extent to which students with visual impairments participated in physical education activities and from their responses it was noted that the students with visual impairments were involved in some of the physical education activities. For example,

Teacher A commented:

I involve students with visual impairments in so many activities such as soccer and goalball which we add the sighted students, volleyball, handball, basketball and also athletics events (A verbatim expression by one teacher).

The same teacher added:

For the track events they participate in 100 metres dash and for the field, the standing broad jump. (A verbatim expression by the same teacher).

Teacher B also said:

Physical education is a general subject for all students in the institution so that whatever activity that we get ourselves involved in we try to engage those with visual impairments too, but the engagement is normally based on their abilities because there are certain activities that they can't participate in so much especially when it involves manipulative activities. However, for activities such as football, volleyball, basketball, aerobics dance, long jump, 100 meters and activities that involve rolling, we try to adapt it to include them. (A verbatim expression by another teacher).

From the analysis of the interview four sub elements emerged. These included, the extent to which students with visual impairments are involved in gymnastics (rolling), game balls, athletics and physical fitness activities (aerobics).

4.1.2. Participation of Students in Gymnastics

From the analysis of the data, it was realized that one of the main themes under the extent to which students with visual impairments participated in physical education activities was gymnastics. For instance, a teacher commented this way: We include them in gymnastics. The only problem is that with gymnastics it is very difficult to deal with the hard ground. You need mattress at least to soften the body content. But because all these things are not available certain times we don't include hard activities that involves body contact but body in suspended form can be done, they can hang on bars as they swing, we only have to tell them that they should hold it firm so that they don't go off from the bars. (A verbatim expression teacher A)

Teacher B commented:

There are certain gymnastics activities they can get involved. For example, handstand. Or you will use wall and use handstand with legs up against the wall, right? Then they can roll, roll forward and backward roll. These are movements that are quite easy. (A verbatim expression by another teacher).

From the above comments it was clear that, though students with visual impairments did not participate in intensive gymnastics, they participated in the adaptable ones such as rolling, hanging on bars and handstand. It was again noted from the comment that some of the resources for including students with visual impairments in gymnastics in the schools were not available which further limited them in the kind of gymnastic activities to participate in.

4.1.3. Participation of Students in Ball Games

Another theme that emerged regarding the extent to which students participated in physical education activities was their participation in ball games.

Teacher A said:

As for the ball games we always involve them in the goalball and football. For the goalball you know it is pertaining to only the visually impaired students. But what we do is we normally involve the sighted colleague's not to guide them but to also have the feel of the game. (A verbatim response by one teacher).

Teacher B remarked:

We have a lot of games which involve balls that we involve students with visual impairments, we have handball, football, goalball and basketball. But we don't involve them in table tennis and volleyball because it is highly difficult to involve them in. It needs the sight to play and serve. (A verbatim expression by another teacher).

It was evident from the analysis that students with visual impairments participated in some ballgames but were excluded from others which involve the intensive use of sight.

4.1.4. Participation of Students in Athletics

Another sub-theme which emerged from the analysis was the participation of the students in athletic events.

Teacher A noted:

They participate in field events like the standing broad jump and then long jump. For the standing broad jump, we normally ask them to come and stand on a broad board over there and then they will listen to a whistle and immediately it goes they will jump from the spot and then we will go there and measure the exact distance. (A verbatim response by one teacher).

Similarly, teacher B also added:

We introduce what we call broad jump. Stand at a spot, swing your arms enough and take off both legs at the same time then you land in the front and then you will measure the distance. For the field event too, we involve them in the shot put, because for that one... we don't need You only need to know the direction and the skill to deliver. (A verbatim expression by another teacher).

Teacher B again stressed that:

But when it comes to sprint, for those with total blindness, we create an environment that is conducive. Normally from 50 meters to 100 meters dash and we make sure the environment is safe, then we use a bell, some lead running and with the ringing of the bell they can follow the direction. (A verbatim expression by the same teacher).

Teacher A also added:

What we do is we normally use the 100-meter dash. For the 100-meter dash, they will be on their lanes, and normally we use ropes so that it will demarcate their various lanes of which they will run through. So, while they are running we have people who will be clapping at the end line so that they will know where to stop. (A verbatim expression by one of the teachers).

The comments from the teachers indicated that students with visual impairments participated in some track and field events. Though they did not participate in the kinds of athletics sighted students participated in, they had specialized athletics such as the 50 meters to 100-meter dash, the standing broad jump and shot put that students with visual impairments took part in.

4.1.5. Participation of Students in Physical Fitness Activities

Another sub-theme that emerged from the analysis was participation of students with visual impairments in physical fitness activities. It was revealed that students with visual impairments participated in a lot of physical fitness activities

Teacher A stressed:

We have so many physical fitness activities which students with visual impairments are involved in, for instance during aerobic dance because it forms a rhythmic pattern they normally follow music while it flows. Again, we also do the sit and reach the toes activity and also, they have the jogging aspect the scoring runs we have a target or a cone there and they run to that end and come back. (A verbatim expression by one of the teachers).

Teacher B also added:

Physical fitness activities are more or less, jogging, exercising the body, aerobic dance which we do on the field with both the sighted and the blind. We involve... and the most interesting thing is because they belong to the various classes, they have friends who are sighted so when we are jogging, they hold their hands and jog together. In fact, these activities help the students to gain more confidence and learn to move freely without much help from people. (A verbatim expression by another teacher).

It was obvious from the analysis of responses of the teachers that physical fitness activities were activities in which almost all the students greatly participate. These physical activities included aerobic dance, sit and reach the toes and jogging. It could clearly be noted here that both students with visual impairments and those without visual impairments were involved together without much adaptations.

4.2. Analysis of Quantitative Data

This section provides analyses of the data generated from the questionnaire administered to students. The data were analyzed based on the research of opinions expressed by respondents to each set of items.

4.2.1. To What Extent Do Students with Visual Impairments Participate in Physical Education Activities in The School?

Table 1 represents data on the extent to which students participate in physical education activities. It covers students' participation in gymnastics, ball games, athletics and physical fitness activities.

Statement	Agree	Neutral	Disagree
Gymnastics			
I do rolling and hanging on bars	40 (66.7%)	5 (8.3%)	15 (25.0%)
Required skills are taught	44 (73.3%)	3 (5.0%)	13 (21.6%)
Ball Games			
I am take part in ball games	48 (80.0%)	0 (0.0%)	12 (20.0%)
I participate in Goalball	54 (90.0%)	0 (0.0%)	6 (10.0%)
I participate in Football	46 (76.7%)	0 (0.0%)	14 (23.3%)
Athletics			
I take part in field events	45 (75.0%)	3 (5.0%)	12 (20.0%)
I take part in Broad jump	34 (56.7%)	6 (10.0%)	20 (33.3%)
I participate in track events	42 (70.0%)	1 (1.7%)	17 (28.3%)
I participate in sprint	36 (60.0%)	5 (8.3%)	19 (31.7%)
Physical Fitness			
I participate in physical fitness activities	55 (91.7%)	0 (0.0%)	5 (8.3%)
I become fit after physical fitness activities	51 (85.0%)	1 (1.7%)	8 (13.3%)
Total	495 (75.0%)	24 (3.6%)	141 (21.4%)

Table 1: Participation of Students in Physical Education Activities

Source: Field Data, (2018)

Table 1 presents the frequency distribution of responses of the respondents which sought to find out the extent to which students with visual impairments participated in gymnastics, ball games, athletics and physical fitness activities. In terms of students' participation in gymnastics, the results showed that most of the participants (66.7%) agreed that they take part in gymnastics, while 25% noted that they did not participate in gymnastics. However, 8.3% of the participants remained neutral in their responses to the statement. Further, 73.3% of the participants agreed that skills needed in gymnastic activities were included in physical education activities while 21.6% disagreed with the statement. In sum, the responses from the items show that, students were greatly involved in gymnastics in the school (70%).

Furthermore, the results of the study show that majority (80%) of the students with visual impairments agreed that they participated in ball games, while 20% also disagreed. For their participation in goalball, 90% of the participants agreed, while 10% of them disagreed. Again, 76.7% of the participants agreed that they participated in football, whereas 23.3% of them disagreed. The overall response to these items for the participation of students in ball games showed that students with visual impairments greatly participated in ball games during physical education lessons (82.2%).

For athletics, 75% of the participants agreed that they took part in field events during physical education activities while 20% of them disagreed with the same statements and 5% of them were neutral. Again, majority of the students (56.7%) agreed that they participate in long jump as one of the field events during physical education activities. But 33.3% of them disagreed with that statement while 10% of them were neutral. In terms of their participation in track events, 70% of the students agreed that they were involved in track events whereas few of them (8.3%) disagreed with the statement. Finally, 60% of the students agreed that they participated in sprint as a track event during physical education activities, 31.7% of them disagreed, whilst 8.3% were neutral. It is evident that the students took part in athletics since majority of them (65.4%) agreed with the items.

Finally, the responses for physical fitness activities revealed that greater percentage (91.7%) participated in physical fitness activities. Also, 85.0% of the respondents indicated that they become fit when they are involved in physical fitness activities. It was clear that the students with visual impairments were not left out when it came to physical fitness activities, with 88.3% of the students having positive views about their participation in physical fitness activities. In summary, majority of the participants (75.0%) gave positive responses about their participation in physical education activities, particularly in gymnastics, ball games, athletics and physical activities

4.3. Result of Hypothesis

- H_0 : There Is No Significant Difference Between The Extent To Which Students With Low Vision And Those With Blindness Participate In Physical Education Activities.
- H_1 : Students With Low Vision Participate In Physical Education Activities More Than Those With Blindness.

The study posed a hypothesis which stated that, students with low vision participate in physical education more than students with total blindness. An independent-samples t-test was conducted to compare the participation of students with low vision and those with total blindness in physical education activities. The results of the test show that there was no statistically significant difference in the scores for students with blindness ($M=3.09$, $SD=.45$) and students with low vision ($M=3.28$, $SD=.41$); [$t(58) = -1.67$, $p=.96$, $p>.05$]. Therefore, the null hypothesis was retained. This result therefore implies that level of participation in physical education activities between students with blindness and those with low vision was the same in the school.

Also, the researchers used the eta squared formula to calculate the magnitude of the differences in the mean value of the two categories of students with visual impairments. It emerged that the magnitude of the differences in the mean scores of the two groups of students was very small (eta squared=.04). This means that only 4% of the variance in the students' participation is due to the type of visual impairment – low vision or total blindness.

5. Discussion of Results

The findings are discussed in line with the key themes raised in the interview guide and the questionnaire items.

5.1. To What Extent Do Students with Visual Impairments Participate in Physical Education Activities?

The analysis of the data collected from the teachers and students respectively revealed elements that show the extent to which students with visual impairments participate in the various physical education activities in the school. From the analysis of the data, it was obvious from the respondents that, the students participated in some aspect in gymnastics, ball games, athletics and physical fitness activities.

On the extent to which students with visual impairments participate in gymnastics, the teachers commented that the students were involved in the rolling, hanging on bars and handstand aspect which Amade-Escot and Bennour (2016) mentioned as some of the basic skills needed in gymnastics that could be learnt easily. However, the teachers mentioned that due to lack of resources available for including students with visual impairments in gymnastics the students were not able to take part in intensive gymnastics. This was also in line with an observation made by Herold and Dandolo (2009) where a teacher stated that, centrally devised resources suitable for gymnastics were not available for involving students with visual impairments in the school they conducted their research.

Similarly, from the views of the students, it was noted that majority (70.0%, 82.2%, 65.4% and 88.3%) of them had positive views about their participation in physical education activities. This confirms what the teachers stated that during physical education activities, students were never excluded but rather allowed to participate in the activities. Again, from the analysis of the students' responses (66.7% and 73.3%), it was clear that the students did rolling and hanging on bars in gymnastics and the skills needed in gymnastics were included for their participation. In line with these findings, Morley et al. (2015) also conducted a study whose results revealed that gymnastics was one of the activities that pupils with special educational needs were easily included in the mainstream settings.

Again, it was evident from the comments of the teachers and responses of the students that students with visual impairments participated in ball games such as goalball and football. For example, 80% of the students agreed that they participated in ball games such as football (90.0%) and goalball (76.7%). This result is contrary to the findings from a study conducted by Lieberman et al. (2006), which revealed that students with visual impairments were not involved in balls games such as football. Similarly, findings from a study conducted by Dakwa (2011) also revealed that students with visual impairments were involved in only paper football as a football game in the school the research was conducted. Also, the teachers noted that, students were not allowed to participate in ball games that involve the intensive use of the sight such as volley ball and tennis. However, Gomes-da-Silva et al. (2015) conducted a study and the findings revealed that participation of students with visual impairments in ball games especially goalball enabled students to pay more attention to their whole body. Another aspect that was looked at was students' participation in athletics. From the analysis, it was revealed that students with visual impairments (65.4%) participated in athletics in the school. However, both the teachers and students stated that the athletics that the students took part in were specialized ones which included sprint such as 50 meters -100 meters dash, standing broad jump and shot put. Moreover, all these activities were done with ringing of bells, lead runners, whistle and clappers to direct students to where to end the activity. This result is contrary to Gawlik and Zwierchowska (2006) whose result revealed from a study they conducted that, students with visual impairments performance was poor in standing long jump during athletic activities due to lack of participation.

Finally, concerning students' participation in physical fitness activities, both teachers and students made it clear that students with visual impairments were greatly involved. According to the teachers, this was an activity that both students with and without visual impairments took part together without much adaptations specifically for the blind. Majority of the students (91.7%) also responded positively to the questionnaire that they were involved in physical fitness activities. According to Szekeres and Dorogi (2002) people who take part in sports on regular basis do not only experience an increased level of physical fitness but also become more independent. The finding from this study revealed that students became fit, gained more confidence and became more independent when they were involved in physical fitness activities. This supports the findings of Szekeres and Dorogi which revealed that when students are involved in physical fitness activities, they become very fit and are able to move around independently.

In sum, the results showed that students with visual impairments participated in most of the various physical education activities in the school. This support the flow theory which states that, people experience the flow when they fully participate in various activities, to the extent that they forget about all the external factors that may distract them. However, most of the activities were adapted to suit their full participation. Though an activity like goalball is specially designed for students with visual impairments as stated by Ardito and Roberts (2007) students without visual impairments were also engaged to allow them to have a feel of the game, as recommended by Gomes-da-Silva, et al. (2015). Other specialized activities also pointed out included, 50 metres to 100 metres dash and standing broad jump that students with visual impairments participated in

Furthermore, the findings showed that there was no significant difference between the extent to which students with low vision and those with blindness participated in physical education activities. The results of the data analysis showed that the difference in mean scores of the two groups of students was very small ($p = .96$), suggesting that there was no significant difference between the two groups. Further, the magnitude of the difference in the mean score was found to be very small ($\eta^2 = .04$) which also implies that a very small percentage (4%) of the variance is influenced by the type of visual impairment. This finding is contrary to that of Demirturk and Kaya (2015) which revealed that, the physical activity level of adolescents with blindness was lower than that of adolescents with low vision.

6. Summary

The study revealed that, students with visual impairments participated in some aspects of physical education activities in the school. For example, skills such as rolling, handstand and hanging on bars were the only aspects of gymnastics in which the students were included. For ball games, students participated only in football and goalball. They were not involved in activities that required intensive use of their sight, such as tennis and volleyball. In athletics, the students with visual impairments participated in field events such as long jump, standing broad jump and shot put. They also participated in track events such as sprint, which include 50 meters to 100 meters dash. Finally, in physical fitness activities, the students took part in aerobics dance, sit and reach the toes and jogging as the main physical fitness activity. It was revealed that due to lack of resources the students were limited in participating in intensive physical education activities in the school.

7. Conclusion and Recommendation

The study concluded that students with visual impairments partially participated in almost all the activities their sighted colleagues participated in. Some of these activities included, gymnastics, ballgames, athletics and physical fitness activities. However, the students were not allowed to take part in the intensive activities due to lack of resources. The researchers recommended that the school should provide more resources that can help students with visual impairments to participate in more intensive physical education activities such as cartwheel and round off in gymnastics, basketball, volleyball and showdown in ballgames, high jump and javelin in athletics and skipping, lime and spoon, sack race and tug games in physical fitness activities.

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