The Effects of Music On The Outcome of Learning On Children With Disability

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Abstract: *This research tends to study two of the ideas as the objectives as (i) how music affects the learning outcome on the children with disability and secondly, (ii) what are the complications the teachers face in dealing with teaching those challenged learners. In order to achieve the objectives the researchers made a descriptive type of case study research design as a qualitative research. The study population was a special school of learners with disability in the village of western Tobago. Due to the homogenous nature of the population three learners among the 35-40 students were chosen as per the direction of the school principal who were observed for a month at three days per week. Three teachers were directed to make three lesson plans on teaching them with the help of music for a month and the lesson plans were revised by the researchers before implementation and then two of the teachers were deep – interviewed with guided open – ended questions. This was done with the approval of the principal and an indication that all protocols were being followed along the design and collection of the study. Thus, natural observation over the learners and focus group interview helped to collect the data for the purpose of the research. These observations and interviews were thematically analysed to understand the issues related to using music as an intervention tool in the teaching and learning of students with disabilities.*

Keywords: *Music, Children, Disability, Effect, Learning.*

I. Introduction

People with learning disabilities experience many intellectual, emotional, physical and mental challenges (Osburn 1998; Nordoff and Robins 1992; Alvin and Warmick 1994; Trevarthen 1999). Where this occurs, music can play a critical role in improving the attention, social functioning, self-esteem, and memory of students with learning disabilities (Hodges 1980; Dixon and Chalmers 1990).The Salamanca Statement and Framework for Action on Special Needs Education (UNESCO 1994) is one of the frameworks that urges the global representatives to move to the idea of inclusive education that tends to profess that no one will remain unwanted from the educational institutions due to their caste, creed, colour as well as vulnerabilities. It further states that children with disabilities or significant academic needs and skills must have access to regular schooling and child-centred pedagogy.

As a way of addressing this, a few researchers have promoted the use of music and music education to enhance the educational experiences of students with learning disabilities. One of the main arguments is that music helps students with learning disabilities. While researchers recognize that each learning disability (those being, attention deficit/hyperactivity disorder, and autism) may be different, and that this may affect the ways in which they are educated, they agree that music can help improve their confidence and their experiences within the school system (Bernard 1997; Bryant 2004). Despite these discussions, there is little research in Trinidad and Tobago that explores the challenges facing special educators, the specific strategies that are used to educate persons with learning disabilities, and the possible effect of music on the learning experiences of these children in the classroom. Given such, the researcher tends to focus on several key ideas as (i) what are the challenges prevalent in these areas to teach the learners of learning disabilities, (ii) How music affects the learning of those learners and (iii) how this strategy signifies improving teaching and learning in classrooms. Thus, this research tends to (i) assess challenges the teachers face in teaching students with learning disabilities, (ii)explore the possible effects of music as a teaching and learning tool in such classrooms and (iii) make recommendations for improving teaching and learning experiences within schools that cater to the needs of students with learning disabilities.

II. Review of Related Literature

The term Learning Disabilities (LD) can be defined in many ways. Donchin & Coles (1988) for instance described it as a fabrication of middle class families meant to focus attention on special learning needs of their children without having to label them mentally retarded or emotionally disabled. Donchin & Coles (1988) further substantiated his view by pointing out that in some parts of the world, the LD category was used in various ways to initiate or maintain a form of racial segregation (1988). The category offered the children of middle class families a degree of protection from probable consequences of low achievement because it upheld their intellectual normalcy and the normalcy of their home backgrounds. It also suggested hope for a cure and

for their ability eventually to attain higher status occupations than other low achievers (Sleeter, 1986). In this case, race and class served therefore as criteria for labelling, treating, or responding to children with LD. Today the notion of learning disabilities is not a connected with racial segregation but is now generally accepted as a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities (Streissguth et al. 1993). These disorders are intrinsic to the individual and presumed to be due to central nervous system dysfunction. However, even though a learning disability may occur concomitantly with other handicapping conditions or environmental influences it is not the direct result of those conditions or influences (Hammill, Leigh, McNutt, and Larsen 1981). According to Kelly (2019) the term learning disabilities is defined to include deficits in visual, spatial, auditory and motor functioning that create a discrepancy between general ability and achievement. The phenomena associated with learning disabilities embrace a wide range of developmental, cognitive, and behavioural problems that are manifested in unique but recognizable patterns. Much of this however creates a deficit understanding of children with learning disabilities.

However, some researchers advance the notion that a learning disability is not a problem with intelligence or motivation. If a person's intellectual capacity is below normal, then his/her learning problem is not said to stem from a learning disability. These are processing disorders that occur for reasons other than diminished cognitive ability (Kane 2012). In fact, researchers argue that most children with learning disabilities experience neurologically-based processing problems. These processing problems can interfere with learning basic skills such as reading, writing and/or math. They can also interfere with higher level skills such as organization, time planning, abstract reasoning, long or short-term memory and attention. It is important to realize that learning disabilities can affect an individual's life beyond academics and can impact relationships with family, friends and in the workplace (LDA). In lieu of this they argue that their brains are simply wired differently. This difference affects how they receive and process information. This perspective therefore pushes the notion that each child is unique, it is only when an individual pace, pattern, style or performance hinders a child in accomplishing developmental tasks that the child's variant pattern becomes a dysfunctional one. The extent to which a difference becomes a true disability depends on internal factors, such as the child's compensatory strategies and the impact of other developmental dysfunctions, and on external variables, such as the importance of the tasks affected, rigidity of expectation, and available supportive structures (Levine 1987).

Some researchers also draw on the fact that the term learning disability is so general in its conceptualization that many employ it as synonymous with learning problems, school failure and the like. In fact, often times, it refers to a specific diagnostic category. The classification of learning disability has been referred to as the most heterogeneous of any special education classification. An examination of the definition suggests that this heterogeneity refers more to the wide range of academic deficits found in the population that it does to cultural and linguistic diversity. The term "children with specific learning disabilities" applies to those children who have a disorder on one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, speak, read, write, spell or do mathematical calculations.

Additionally, people with learning disabilities are often viewed as "abnormal", "different", and "incapable" individuals. Their physical and functional impairments might be partly responsible for them being conceived by some as 'deviant'. This can result in them being rejected by their community, society as a whole, and even relatives and health services (Osburn 1998). Conformity to societal rules is of paramount importance to the very existence of human beings. Lawlessness and non-conformity are akin to the destruction of human life.

Physical incapacity is considered by many a sociologist as a form of deviance. In this way disability has often been considered as deviance simply because it does not meet society's expectations (Henslin 2008). The concept of social role valorisation (SRV) can be introduced as a way of support (Lemay, 1995; Wolfensberger, 1972). SRV is especially relevant to two classes of people in society: those who are already societally devalued, and those who are at heightened risk of becoming devalued. Thus, SRV is primarily a response to the historically universal phenomenon of social devaluation, and especially societal devaluation, (Osburn 1998). This helps to empower them and to facilitate their integration into society as valued individuals. Paramount in this paper is the desire to demonstrate that musical activities can be one of the interventions, which can enhance the quality of life for people with learning disabilities (Trevarthen 1999, Nordoff and Robins 1992; Alvin and Warmick 1994).

A. Measuring Learning Disabilities

Several methods can be used to measure learning disabilities, such as; (i)Screening programmes, (ii) Response Intervention, (iii) Comprehensive Assessment and (iv) Individual Education Programme. Screening is the first step in the process

of gathering relevant information about an individual with a suspected learning disability. Screening does not determine whether or not the person has a learning disability. It may include observations, informal interviews, the use of a written tool, and/or a review of medical, school, or work histories. Screening is a way for an advocate to better determine the probability of the suspected learning disability, and to help the person decide if he or she needs to continue with an LD diagnosis.

Response Intervention (RI) is the name given to the process used to help identify children with Learning Disabilities. Response intervention usually involves the following:

- Monitoring all students' progress closely to identify possible learning problems
- Providing a child identified as having problems with help on different levels, or tiers
- Moving this youngster through the tiers as appropriate, increasing educational assistance if the child does not show progress.

Comprehensive assessments, a method used to measure learning disabilities, evaluate and identify a student's strengths and needs (National Joint Committee Learning Disabilities 1990). Comprehensive assessments can:

- Identify whether a child has a learning disability
- Determine a child's eligibility under federal law for special education services
- Help construct an individualized education plan (IEP) that outlines supports for a youngster who qualifies for special education services
- Establish a benchmark for measuring the child's educational progress

An Individual Education Program (IEP) is sometimes developed to help define a person's learning strengths and weaknesses. It spells out your child's learning needs, the services the school will provide and how progress will be measured. Several people, including parents, are involved in creating the document. The entire process can be a great way to sort out a child's strengths and weaknesses. Working on the IEP can help in figuring out ways to help him succeed in school.

B. Responding to learning disabilities

Educators and researchers are beginning to pay more attention to the notion that some students have difficulty learning skills and concepts taught in the classroom. It is important for school personnel and parents to work together to identify problems when they arise and to address them both at school and home (Bryant 2008).

Teachers have to deal with this challenge in their classrooms as well. Not only will these students demand more teacher time and patience; they will also require specialized instructional strategies in a structured environment that supports and enhances their learning potential. Many of these young children struggle to communicate their wants and needs, to freely move their body to access and engage their world, and to learn abstract concepts and ideas. The intensity of their needs means that delays are likely to have a pervasive impact on the child's development and are likely to continue to impact the family and the child well beyond the early childhood years (Chen et. al, 1997). When teachers use a needs-based approach to support the learning of young children with multiple disabilities, it is possible to identify the individual supports each child needs to have greater access and engagement across environments. In addition, teachers must also ensure that the identified practices are those that we have the greatest confidence at this point in time that they will lead to positive impacts for the child. It is important to remember that learning disabled students are not students who are incapacitated or unable to learn; rather, they need differentiated instruction tailored to their distinctive learning abilities (Clark 1999).

Differentiated instruction is a flexible approach to teaching in which a teacher plans and carries out varied approaches to address content, learning processes, learning style, practical procedures, presentation strategies, and assessment tools. When teachers differentiate instruction, they provide students with the structures to maximize strengths, work around weaknesses, and experience timely remediation. This enables students to take advantage of effective learning strategies as they begin to understand their own personal learning styles, interests, needs, and engage with their learning. As a result, student motivation increases (Westman 1990).

A critical aspect of effective collaborative educational programming is the involvement of family members or the forming of partnerships with families and working collaboratively with them. Given that families know their child the best, they have the information needed to guide the team in the development of an effective and individualized educational program. Disability labels can be stigmatizing and perpetuate false stereotypes where students who are disabled are not as capable as their peers. In general, it is appropriate to reference the disability only when it is pertinent to the situation.

However, the learning disabilities association of America (2014), confirms that we can teach children with learning disabilities to "learn how to learn". The social constructivist perspective informs this strategy. This perspective speaks to social and cultural context of learners' lives. Thus, in order to help students in their development, it is necessary to change the learning context in such a way that it will correspond to different learning abilities and needs of students.

Some intervention practices include direct instruction, using sequential structured multi-sensory approaches, providing print outs and visual aids in the classroom. These are also be supported through the use of scaffolding as a strategy to build the learning of students with learning disabilities. In this case, it starts out with the teacher using heavily mediated instruction, known as explicit instruction, after which they slowly begin to let the students acquire the skill, moving towards the goal of student mediated instruction. Success for the student with learning disabilities requires a focus on individual achievement, individual progress, and individual learning. This requires specific, directed, individualized, intensive remedial instruction for students who are struggling. (LDA 2014).

C. Music therapy

Music provides a form of compensation for those with language impairments as well as a means of facilitating language development. (Hodges, 1980).

Music therapy is considered a related service modality in special education. Research in neurological functioning supports the association between music and cognitive development. Music organizes sounds and silences in a flow of time. It creates expectations and are then satisfied. It raises a question and solves it. Music focuses on accuracy and attention. Learning how to play an instrument can improve attention, concentration, impulse control, social functioning, self-esteem, self-expression, motivation and memory (Dixon & Chalmers, 1990). Music creates physiological responses, which are associated with emotional reactions. Music explains the tension release sequence associated with emotional arousal (Abeles, 1980). The speed and intensity of the musical beat creates the different feelings in each type of song. The opportunity to play an instrument can be used as a reinforcer for on task behaviour (Hodges, 1980). Music can also foster positive attitudes (Rager, 2008). Psychological and neuro-scientific research demonstrates that musical training in children is associated with heightening of sound sensitivity as well as enhancement in verbal abilities and general reasoning skills. Studies in the domain of auditory cognitive neuroscience have begun revealing the functional and structural brain plasticity underlying these effects (Merrett et al., 2012). Listening to music requires certain perceptual abilities including pitch discrimination, auditory memory, and selective attention in order to perceive the temporal and harmonic structure of the music as well as its affective components and engages a distributed network of brain structures (Peretz and Zatorre 2005). However, the extent to which the intensity and duration of instrumental training or other factors such as family background, extracurricular activities, attention, motivation, or instructional methods

contribute to the benefits for brain development is still not clear. Music training correlates with plastic changes in auditory, motor, and sensorimotor integration areas (Hensch 2004). The power of music to act therapeutically has long been recognized. Therapy can involve listening to or actively making music. Increasingly it may involve both.

Passive music intervention in music therapy also affects how children with learning disability engage in the classroom. Music listening which is a strategy in which an individual is listening to live or recorded music, is considered passive because no music engagement or active participation is involved. Though some differentiate therapeutic music listening alone as a therapy which is separate and apart from clinical music therapy, music listening is listed as one of the many techniques used in music therapy. From a neuroscience perspective, passive and active music activities differ in the parts of the brain that they activate. Listening to music engages subcortical and cortical areas of the brain, including the amygdala, medial geniculate body in the thalamus, and the left and right primary auditory cortex (Yinger and Gooding 2014). Another study demonstrated that the anterior medial frontal cortex, superior temporal sulcus, and temporal poles are engaged when an individual/person listens to music because he or she could be trying to identify the music maker's intentions (Lin et al. 2011). In music listening, the individual's preference for music type also affects the brain regions that are activated. For example, different parts of the brain are activated when the music is self-selected as opposed to when it is chosen by the researchers (Blood & Zatorre 2001).

Emotional understanding in individuals with autism is related to their ability to communicate socially and is often considered one of several qualities that are underdeveloped in this population (Hobson 1995). In a study done in 1999, young children with autism were able to recognize emotional expression in music at an equal level to children without autism (Heaton, Hermelin and Pring 1999). Additionally, research suggests that music can help children with autism in increasing their attention and focus, as well as to convey important information, and make their learning environment more enjoyable (Buday 1995). Based on these papers, a study was done on the effects of background music and song texts on emotional understanding. The researcher found that among the control conditions and experimental conditions of having background music that represented emotion or having verbal instructions only, the background music was most effective in improving emotional understanding (Katagiri 2009). As stated before, the increased emotional understanding could help individuals with autism improve their social interactions with others.

D. Music and Learning

Empirical literature on the topic found that music was and has been used to treat several mental health issues (Buckwalter et al. 1985). Following further research, it was later recognised that music improves health by focusing on the different physical, psychological and emotional aspects of individuals. Music tends to be one of the top motivators for children with special needs. It employs the use of captivating instruments to prompt a child to make requests, i.e. holding out a drum and waiting for them to communicate. Using different instruments to encourage the development of motor skills are just two examples of how this can be done. Music is an easy, fun and motivating way to connect with children and motivate them to develop new skills (Judd 2014). Brown (2012), on the other hand, suggests that music has the power to drive away the feelings of fear and anxiety when facing the unknown alone. If used in such a way, then music has the capacity to promote creative and critical thinking among students in the classroom. This has been well documented in the literature. In fact, Nabhan and Bitar (2018) found that that learning music facilitates learning other subjects and enhances skills that children inevitably use in other areas. In this case, it involves more than the voice or fingers playing an instrument. Where a child learning about music has to tap into multiple skill sets, often simultaneously, then it music helps with language, cognitive and social development (Straum 1996), this can be assisted by linking familiar songs to new information can also help imprint information on young minds.

It has been shown that high school music students have higher grade point averages than non- music students in the same school (Mickela 2000). This same study also found that 16% of the music students had a 4.0 overall grade point average and only 5% of the non- music students had a 4.0 overall grade point average. A study of graduates of the New York City School of Performing Arts found that 90% of them go on to college. Involvement in high school music programs helps students develop the skills necessary for a variety of occupations (Mickela 2000). A Stanford study also showed that music engages areas of the brain which are involved with paying attention, making predictions and updating events in our memory (Berti et al. 2006). By so doing, musical experience strengthens many of the same aspects of brain function that are impaired (Kraus and Chandra sekaran 2010).

E. Challenges of using music as a learning tool

A challenge to teaching music to children with learning disabilities is the fact that every child learns differently .Figuring out a child's learning style or level of intelligence (auditory or kinaesthetic) is a helpful tool when teaching music. When it has been determined how a child learns best, steps can be taken to make sure that type of learning is reinforced in the classroom and during home study.

However, very few studies provided a comprehensive view of some disability categories such as autism (Staum, & Stambough 1996), mental retardation or cognitive delays, attention deficit disorders (ADHD), learning disabilities and physical and other health impairments (POHI).

III. Methodology

According to Sarantakos (1998) research methodology is the theory of methods (it is the way in which one makes sense of the object of enquiry). Robson (2002, 549) defines it as, the "theoretical, political and philosophical backgrounds to social research and their implications for research practice." While research methodologies are posed as either quantitative or qualitative, they emerge as a way of building the accumulation of knowledge (Byrne 1997; Clarke 1999). Taking this approach, the researchers stress on the objectives of the study as the key strategy to be used in the selection of a specific methodology for a study.

A. Research design

Saunders and Thornhill (2003, 90) define research strategy as "a general plan of how the researcher will go about answering the research questions." They distinguish between eight research strategies, namely: experiments, surveys, case studies, grounded theory, ethnography, action research, cross-sectional studies and exploratory studies. However, the three main strategies used by most researchers are: experiments, surveys and case studies because of great benefits associated with using them (Robson 2002).

However, given the emphasis on students with learning disabilities, the study embraces the use of a case study design. In most cases, a case study method selects a small geographical area or a very limited number of individuals as the subjects of study. Case studies, in their true essence, explore and investigate contemporary real-life phenomenon through detailed contextual analysis of a limited number of events or conditions, and their relationships. Yin (1984, 23) defines the case study research method "as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used."

There are several categories of case study. Yin (1984) notes three categories, namely exploratory, descriptive and explanatory case studies. Exploratory case studies set to explore any phenomenon in the data which serves as a point of interest to the researcher. Second, descriptive case studies set to describe the natural phenomena which occur within the data in question. The goal set by the

researcher is to describe the data as they occur. McDonough & McDonough (1997) suggest that descriptive case studies may be in a narrative form. Third, explanatory case studies examine the data closely both at a surface and deep level in order to explain the phenomena in the data. For the purpose of this research, the researchers conducted a descriptive type case study. They were attempting to describe the teaching process as they observed the behaviour of the children as they learned and interacted with music.

The research method was descriptive, qualitative, this is a detailed description of specific situation(s) and effects of music on the teaching and learning of students with learning disabilities. This was assessed using observations and a focus group interview.

B. Population
Polit and Hungler (1999, 37) refer to the population as an "aggregate or totality of all the objects, subjects or members that conform to a set of specifications." The population was made up of students within the classroom of a special school located in a small village on the Western end of Tobago. Students was located within a specific school that caters to students with learning disabilities. This school has been in existence for approximately 15 years and has a population of approximately 35-40 students with varying disabilities. The school comprises of five classes with student teacher ratios of either 15:1, 7:1 or 4:1.

C. Sampling
Given the small size of the school, that is 40 students, the researchers employed the use of a purposeful sampling method, mainly the homogenous type. This typed seemed best because its aim is to target a group of people that are similar in terms of age, gender, background, occupation, etc. A homogeneous sample is often chosen when the research question that is being addressed is specific to the characteristics of the particular group of interest, which is subsequently examined in detail. A sample is a subset of a population selected to participate in the study, it is a fraction of the whole, selected to participate in the research project (Brink 1996; Polit & Hungler 1999). Based on the advice of the principal, the interpretivist nature of the study, and the small size of the school, three (3) students were chosen to be included in the study. Students had been chosen based on their level of disability and extent to which they are able to participate within the classroom.

D. Methods
Qualitative researchers typically rely on observations for gathering information. The researchers chose this method because it is best suited to examine people in their natural settings or situations and that in essence is what the current researchers tried to achieve. This method of data collection takes many forms though. There is controlled observation, natural observations and participant observation. Natural observations involve spontaneity in natural surroundings, the researcher records what they see, in whatever way they can (Suryani, 2013). In the case of this study, natural observation is best suited because as mentioned previously, the researchers intend to examine these students in their natural daily classroom setting.

Qualitative researchers also rely quite extensively on in-depth interviewing. Interviewing varies in terms of a priori structure and in the latitude the interviewee has in responding to questions. Patton (1990) puts interviews into three general categories: the informal, conversational interview; the general interview guide approach; and the standardized, open-ended interview. In this study, the researcher uses the guided approach with a list of preconceived questions to guide the study. This is done with two of the three teachers assigned to the schools and who were both observed throughout the time within the field.

E. Data collection procedure
In order to gain access to the school, the current researchers wrote to the principal of the said school to enquiry as to the feasibility of the study and ensured at that time that all ethical protocols would be followed in the collection of the data and in the field. To do so, the researchers also wrote a letter sharing information about the research and emphasising the adherence to confidentiality and anonymity. Once permission was granted, the researchers liaised with the teachers and shared the information on the study. Teachers were informed of the special interest in the use of music and the desire to observe lessons around these. Teachers agreed to participate and to formulate lessons that utilized music as a teaching tool for students with disabilities. Three lesson plans were subsequently developed by each teacher to address the use of music as a teaching tool; these were discussed and shared with the researchers before the actual delivery within the lessons. Once lesson plans were received, the researchers proceeded to observe teaching and learning in the classroom for three days in the week and over the course of one month. During this time, the current researchers served as a passive observer and recorded the emphases of the teachers, the types of strategies used, and the responses of the students. At the end of these observations, the current researchers also interviewed two of the teachers about the perceptions and experiences as it relates to teaching students with learning disabilities. These responses were used to generate themes related to using music as to tool to affect the teaching and learning of students with learning disabilities.

F. Data Analysis

Data analysis, also known as analysis of data or data analytics, is a process of inspecting, cleansing, transforming, and modelling data with the goal of discovering useful information, suggesting conclusions, and supporting decision-making (Patton1990). These can also involve the examination of controversies directly related to the research area. In analysing the data, the current researchers examined the common patterns during the activities or design of the lessons, responses of students, and perceptive of the teachers. This is consistent with the objectives of this research.

IV. Findings

Two major objectives guide the study. Firstly, the study explores the challenges that teachers face in teaching students with learning disabilities. Second, the researchers desired to understand the dynamics around using music as a tool for the teaching and learning of students with learning disabilities. These findings around these two questions was based on the two methods used to conduct this research; observations and interviews. The researchers will also reference the content of the lesson plans to speak to the nature of the lessons that were incorporated as part of this study. Based on the examinations on the patterns that surfaced from the observations and the interviews with teachers, three patterns were observed; namely; the challenges around teaching children with learning disabilities, the effect of music on the level of student participation, on the behavioural responses of students, and on the need for social support to improve the teaching and learning of students with disabilities. These themes/findings are elaborated on in the following sections.

A. Teaching students with learning disabilities: Cognitive and behavioural challenges

A major in the study was the cognitive and behavioural challenges of teaching students with learning disabilities. In particular, the study highlighted the challenge around keeping an attention span of students and of controlling or guiding how their express their own understanding of their sexuality. In terms of the former, this was particularly evident during the observations and interview with the teachers. In my observational notes, the researcher recorded that:

> An eight-year-old autistic girl was very energetic, in and out of the classroom, getting her to stay still to talk to her was near impossible but she eventually gave me exactly two minutes of attention where I was able to get her to sign her name, she managed to sign the first two letters and mumble some stuff before she ran off'

The teachers' responses to the interview questions provided some insight on this. In that respect, teacher A stated that:

> Having different disabilities can be challenging because each child's level of development is different, and the teacher has to work doubly hard to prepare for them and ensure that each child is reached at their varying levels. Having a short attention span can contribute to teachers having to repeat themselves for the sake of a child who lost attention during the lesson.

In speaking to the same issue, she also shared that some of these disabilities often go unnoticed in the classroom. She stated therefore that "sometimes they appear normal…but we are forgetting that they have one or multiple disabilities". The issue in this case for teacher A is that "we really don't know what we are dealing with, how to treat it". She insisted that while we "are doing our best, we are treating with something that we are not exposed to." Teacher B also stated that there are students with different disabilities and having a differentiated lesson is always challenging. She noted that:

> I have experienced being with a student who is deaf but knows when he's doing right, knows when he's doing wrong and would climb the walls, lie down in the cupboard, lie down below the table, hit the students, lie down in a corner behind the computer desk and all of this is happening while trying to get a lesson done and the challenge of having him settle sometimes is non-existent.

As a way of summarising her experiences around this, she also shared that:

> The experience [as a special education teacher] has opened my eyes because I have been in primary, secondary and now special education and it is a complete difference, things that we take for granted, so tying a shoe lace, buttoning a button, saying good morning, all those things have changed for me. If I have a student that has never been able to speak and say a word, it's a big thing, so being a special educator has made me appreciate the life that we enjoy normally and helps me to better understand and take time to deal with special students at their level knowing that I can't rush the curriculum with them, knowing that if I'm working on the letter "A" for the entire term I have to prepare the resources for that and meeting their specific need and watching them grow and enjoying it.

The teachers also spoke to the challenges around students' expression of their sexuality in the

classroom. In both cases, they called for more interventions and education of those students on how to understand their body and relate to others of the opposite sex. In that regard, Teacher B indicated that "these children sexual urges are more advanced than the average man and that is a challenge because you have to always be on the look-out for touching in various parts and you have to be alert and aware". While she did not elaborate too much on this point, she insisted however that addressing these challenges requires needed intervention and the adoption of particular strategies in and outside of the classroom.

B. Musical intervention and student participation

One of the most invisible finding of the study was the extent to which the use of music as a learning and teaching tool affected the level of student participant. In fact, from the interviews, it appeared that the use of music as an intervention tool solicited the willingness of the students to participate in classroom activities and the engagement of students into the lesson. This was clear during the delivery and execution of the lessons on June 4th, where the students had to identify and match letters to a picture. In reviewing the strategy of the teacher, the researcher noted that the researchers required that the students match the letters of the alphabet with pictures that were placed before them. In order to assist the students, the researcher noted that the teachers also sang the alphabet with a particular rhythm to stimulate the students. In speaking to the use of music teacher B stated the following:

> I use music daily because of the students I have in my class, to learn the alphabet, to learn the syllables in their name and that kind of thing, so let's say your name is Paulena, I'll make a clapping out of it Paul-ena Paul-ena. One particular student, she doesn't have much speech, but the ABC song that I play every day, she's able to say it how she can, in her own way and to better understand the students.

In observing this lesson, the researcher noted that the students immediately sang along; without the encouragement of the teachers. In looking at the responses from teachers, the researcher also discovered that this response was due to the specific integration of the rhythmic aspect of the lesson. In fact, teacher B, indicated that "I realise that music is a way to touch them, get them to learn, to open up more than the regular chalk and talk." Likewise, Teacher A's in response to the same question indicated "music is a medium that most persons will gravitate to". While teacher A suggested that this would affect both students in mainstream classroom and those in special schools, she insisted

that this was particularly successful for students with learning disabilities.

In fact, both teachers suggested that the use of music in the classroom has left a positive impact on the students. In fact, she suggested that the incorporated of music, not only solicited their participation, but that this participation also increased their learning of the concepts or the work. In that regard, Teacher A also stated that:

> Participation in my classroom through music has positively impacted the learning for these students in that the repetition, once you play or give them those beats they will quicker get that, what you put out there; what you want them to give you back, so it's like a give and take. You play with them through music and they learn even better.

In that regard, teacher A elaborated that the use of music "holds the interest of students." She stressed that "the day will run smoother if you start a lesson with music; it would really capture them". She suggested that "their attention span is not as broad as, [therefore] you will start off with this and after the music you drop the little practical and theory part of it and that will be integrated to teach that subject area". Teacher A added that this interest in learning extended when teachers used other means such as visual and performing arts, physical education, sporting and outdoor activities, and gardening. Teacher B as speculated on the reason why music increased the engagement of students. In that regard, Teacher B noted that the use of music as a teaching tool helps to build the memory and enthusiasm of students; a response that added in their classroom learning. Thus, she noted that "what I recognize is that it builds memory, even when you think that they may not be paying attention, using music makes them learn". Given the above, teacher B added that "music should be used in teaching everything because it can be integrated into any subject". She also specified that teachers can incorporate this into the "set induction of the lesson".

C. Musical Interventions and Behavioural Challenges

While the use of music in the classroom increased their participation, it was also clear that it intensified the challenges of managing students who had different levels of learning disabilities. On June 5th, the current researcher noted that "Once the music teacher arrived, they started to jump, and scream and it took about ten minutes to calm them". On June 6th, the current researcher made the following observation was made:

> I can see that every child wants to be involved, if one child realizes that they are being ignored, that's when they become

troublesome and show signs of wanting the teacher's attention. I noticed that in the classroom setting they are very restless and mischievous as opposed to music time when they get very excited. Once the music teacher arrived, they started to jump, and scream and it took about ten minutes to calm them.

Upon completion of the observed lesson, the current researcher also noted that:

> One of my two hearing impaired cases played the drum and there was an obvious difference in his behaviour when he was assigned the drum; he became almost wild with excitement, as opposed to his mischievous classroom behaviour. The teacher, was showing him how to beat the drum and his excitement was so much, he did his own thing, she had to calm him before she could continue. After about five minutes she was able to settle him and a few of the others and carry on with her class. The other one was very reserved at music time but very attentive and alert, I was of the assumption that he didn't want to play the pan, but I couldn't confirm my suspicion. He showed excitement, but he was bent on being sly and mischievous so every so often he would stop and beat another student's pan, or drum. When he realised I was observing him, he would smile and do what he knew he should be doing.

In this case, the observation was that the use of music as a teaching tool triggered a totally different behaviour for these children. In this case, their increased participation also required the use of additional management strategies for the teachers. Once this occurred, then teachers resorted to other psychological and educational measures to manage/calm their students. The calming process involved sternly addressing the class collectively or calling the child/children who seemed disruptive. It may even involve a little "hands up, out, up out and down." to get them to settle themselves and get quiet. Once calmed, the lesson started." The lesson plans show that interaction is in fact common, more so among teacher and child, as the teacher needs to be repetitive and uses a lot of reinforcing methods within the class setting. This is shown by the use of the word repetition after every section in the lesson plan. The lesson plans also show that repetition is the custom in the classroom and the observation confirms it. Repetition ensures that the child is learning and retaining what is being taught.

The need for positive reinforcement for learning also required the use of multiple strategies.

Therefore, teachers also repeated a concept multiple times to ensure that the children are paying attention and that they understand. Sometimes it involved the teacher calling on a particular child to repeat what was said, this is also to ensure that the child is focused and understands what is being taught. From observation I noted that the teacher may even say "repeat after me" and allow the class to repeat a statement or word while she teaches, this too ensures retention and alertness. In all cases, this required that teachers use their teacher training skills and adopt classroom management strategies that also aided learning in the classroom. Teacher A insisted that this was particularly necessary since "it is not always easy to get these children to pay attention because they naturally have a short attention span." Teacher B shared her own experience of trying multiple strategies (reading, writing, homework) and of not succeeding with those. She called for more consideration of the strategies used given the many challenges around teaching children with disabilities. She also stressed the following:

> Reward, reward and consequences! In as much as they have disabilities, they understand the effects of being rewarded and not rewarded. I have used that a lot and it seems to work. The music is one of my biggest strategies in trying to keep the children calm, technology so if it is you perform this particular task, you're allowed ten minutes or fifteen minutes of music time or any form of technology that you like, and it works.

She also stated that the use of manipulative was an important aspect of getting students involved in their learning processes and keeping their attention span. She stated that "not all my students' function, so you have to get them into it…using manipulative…or finding out where their interest lies in order to get them to function".

D. Need for Social Support

Teachers also insisted that teaching children with learning disabilities remained a challenge and that moving forward required additional forms of social support to address some of the multiple challenges (cognitive and behavioural) that affects these students. In dealing with these challenges, the teachers insisted that addressing these required forms of social support that extended beyond the teaching of these students. Teacher A suggested the need to develop better relations with the students. She noted the following:

> I try to develop a relationship; a real strong relationship with these students, because some of them you know their backgrounds and you try to touch everyone, you try to reach out to everyone in their little own way

so that they can feel comfortable, come to you and talk to you as a friend because at the end of the day, most persons just want somebody to have a listening ear. Also what I have started, I want them to feel a part of whatever subject are, so in the grammar, I would come to them on morning and say "Hey what y'all did over the weekend and I would jot it down, however they say it, I'll write it and then we will go and edit it, so this is my story for the week, everybody put up their story, from their we'll grab the vocabulary, all the subject areas so that they'll feel apart, this is all about me, wow. That's what I've started now and then you see that they're really interested in learning.

Another challenge both teachers shared was the challenge of a lack of support from parents. Teacher A stated that this is particularly important given the need to sustain the interest and learning ability of these students. She shared the following:

> I am not bashing parents or anything like that, I'm not, but sometimes parents don't take the time out to sit and listen and understand their special needs child, you special, alright you sit down in a corner, go and watch television, but working with them you realize that they have stories just like any other child and sometimes they may not be able to express themselves at home so having that one on one relationship with them makes them feel comfortable, makes them feel normal. Being a part of everything, the sporting events, the music festivals, those different things, build their self-esteem and self-confidence and it goes a long way.

By stating the above, the teacher expressed grave concern over other social and psychological problems that students with learning disabilities face. Part of addressing these issues she stated included the need for a holistic approach in which multiple partners were involved. Thus, teacher B stated that:

> The school needs to have the team, the team that works with the students, the physiotherapist, the occupational therapist, the social worker, the guidance officer, we need that team, if we don't have that team of persons the we're failing because we have students who need speech therapy that I may not be able to give or miss may not be able to give but you might have the social worker, coming in once every term. This does nothing for the students! it's ineffective, so having that support, real support, not just, alright the ministry

coming, let's pretend, no not that kind of support, we need the real support because listening and going around to meetings or whatever it is.

She therefore called for a more holistic approach that included a more positive and inclusive attitude towards children with learning disabilities. In speaking to this, she shared the experience of hearing someone dismiss the possibility of working with these children based on the stereotypes that they had about them. She shared the following:

> I remember going to one of those youth programmes. I spoke to the person in charge and I [introduced myself]. I explained that I am trying to get the students into the programme and he was willing but when he went to his superior, his superior shut it down saying "how yuh could say yes and bring them special children here, dem dumb chirren and who guh help. And I was appalled because these are our nation's children. Even if they may not be able to write CXC or NCSE they might be good in woodwork, they might be good in music, they might be able to make a drum or something else and it was really disappointing to see that the entire school was shut down because people didn't understand what it meant to have a disability. It's really heart-breaking."

Given such, she insisted that the problem extended beyond the classroom. She called for greater interventions that addressed these concerns and promoted a more inclusive and embracing approach to students with learning disabilities. In responding to this comment, teacher A also alluded to the fact of support for children with special needs. She responded with the following:

> For me, I can relate to this, it touches home, because I am a parent of a child with special needs, so I am living it, I see that things take long in the system, you have to really knock on doors and you are shut out if you don't really persist, so some of the parents that I know of these children at the school, they are not exposed, they don't really know where to go to because if I wasn't at this school, I wouldn't have been exposed to most of these things and really say wow, if I don't get this, I can go here, okay, because I went to a workshop and the question that I would have asked, y'all are speaking about early intervention, where can we go for early intervention? And I got the politically correct answer, but afterwards the person came to me and said there's none so in the

event that these children are just left behind, what is the next move? Who can the parent go to?" "

Given the above, both teachers called for training of teachers who interact with children with learning disabilities. Teacher A stated that "everybody should be trained; do a nationwide sensitization of special needs and [address how they are treated when they leave school]. She insisted that the intervention should address the issues that they face both in and out of the school system if change is to be realized. Teacher B also had similar sentiments. She stated that:

> I recognize that people don't understand what special needs are, they don't understand what it means to have a disability and even when the officials from the ministry of education or whoever come to visit, we put on a façade for them to sing the students sing and dance but they don't really understand what it is to come sit in a classroom and actually work and see the students at their worst and see the students at their best. So my recommendation is to have everybody trained, do a nationwide sensitization of special needs and being accepting because when students leave the school what are they going to do? Work in a hotel? Work a little CEPEP? That's not good enough, they are better than that.

She also called for more specialized training that addressed the challenges of teaching and learning for students with disabilities. She insisted that:

> All teachers; all staff of special schools be trained and not just trained in special education, but one teacher can go and do hearing impairment, one teacher could do autism, one teacher could do learning disabilities, one teacher could do intellectual disabilities, so that we have a wide variety of knowledge so that the knowledge base would be great.

These children may not be able to write the examinations that would allow them to function in a normal job setting doing clerical work, but their skill set is unlimited, they just need the opportunity. From the quotes, it can be interpreted that the special education department lacks support. Support from parents, support from various departments within the education division and general support from the division itself. If all these entities come together and work together for the betterment of the school and its children, things will be much better.

V. Analysis

A. Challenges of teaching students with learning disabilities

In this research, the finding suggested that teachers face several challenges when teaching these children. While the study did not address the problems faced at home, it confirmed some of the challenges faced in the school. This was expressed in the findings where the teachers spoke to the issue of support, lack of training for special education teachers, and other relevant personnel. This is particularly important since teachers have to meet their disabled students half way, in order to facilitate learning.

B. Student participation

The theme of student participation weighed a lot on the involvement of music within the class setting. The findings revealed that students are more willing to participate when music is incorporated into the lesson. After reviewing the literature, the researcher can confirm that this is indeed true as music is therapeutic. Music provides a form of compensation for those with language impairments as well as a means of facilitating language development (Hodges, 1980). This is also evident in the interview responses given by both teachers. Musical content helped to bring books alive and that musical classrooms encouraged children to relate and participate in the activities (Giles, Cogan, and Cox 1991). Learning how to play an instrument can improve attention, concentration, impulse control, social functioning, self-esteem, self-expression, motivation and memory (Dixon and Chalmers 1990). From the findings of this research, it was evident that music aided the lesson. This confirms the findings of Dixon and Chalmers (1990) who suggest that music enhances learning for students with learning disabilities.

C. Music as a behavioural stimulator

Student - teacher interaction is obvious in any classroom setting, findings showed that once the music teacher arrived, the children became restless, they started to jump, and scream. To calm them, the teacher had to sternly address the class either collectively or call the child/children who seemed disruptive. Once calmed, the lesson started. Interaction was also observed when the teacher had to the method of repetition to ensure that the children were paying attention.

VI. Recommendation

For this research, the current researcher embraced two theories; namely, the multiple intelligences theory (MI) and the Social Learning Theory. These both speak to the fact that children learn differently according to their level of brain development. Based on this study, it is clear that

students with learning disability, do not have multiple intelligences, but different intelligences. Social Learning Theory becomes particularly useful for the latter. In fact, the findings suggest that repetition captured students' attention, motivated them to repeat the modelled behaviour and encouraged their participation in the classroom. Exploring the role of music in this process and the effects of this tool as part of this process is also an area for further research.

As policy makers; this would also require greater attention to the needs of teachers and students and to ensure that teachers are well trained and supported to perform their roles in the classroom. However, the findings also suggest that any policy to address the teaching and learning of students with learning disabilities should also seek the support of parents and other stakeholders. Full support from parents and teachers alike in conducting sign language courses and professional training, as such will be to the benefit of the child. Laws should be implemented to ensure that all schools cater to the needs of children and afford them the best education possible.

VII. Conclusion

The nature and dynamics of special education in Trinidad and Tobago remains an area of concern for teachers, researchers and policy makers. The study aimed to address some of the challenges that teachers experience in the classroom and the impact of music as an intervention tool on the teaching and learning outcomes in the classrooms. With my use of the case study research design, I was able to observe and examine these children in their natural space. It is clear from the research that teachers are challenged by the learning disabilities of their students and are forced to adopt other strategies to enhance their learning in the classroom. The use of music as an intervention tool provided teachers with a basis to explore other approaches to teaching students with learning disabilities. The findings suggest that music did have a positive impact of the students as they were both excited by the music and participated more in the lessons. While there were concerns for the ability to control these students once they were excited, it highlighted the need for the training of the teachers to address these issues. The findings also call for further support for parents, communities, government and non-governmental organizations in order to enhance the experiences of persons with learning disabilities. In the classroom, it calls for different or multiple approaches to dealing with these students. As mentioned previously, it would take effort and co-operation from those in authority but it not an impossible task. This research opportunity reinforces the need for be patience and open to what the data suggests.

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