Enhancing Developmental Resilience in Children with Special Needs through a Strength-Based Paradigm

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Abstract

The purpose of this study is to examine special education teachers' perception of the benefits of implementing a strength-based approach in special schools, and the extent to which the special needs students' strengths, abilities, and talents are valued and addressed in the current education system. It also investigates how teachers support their students' strengths, talents, and abilities in the current system. Findings from this study would enable a comparison of the current approach and method of working with a child with special needs in Singapore with a strength-based approach.

The current approach to special education in the local schools is said to be deficit driven. Most special schools in Singapore are focused narrowly on the child's special education needs (medical model), rather than the development of the child. Many teachers of students with special needs tend to focus on their students' deficits rather than on their strengths (Clark, 2016). A strength-based approach in special education, on the other hand, focuses on students' positive qualities and contributions instead of the skills and abilities they may not have (Elder, Rood, & Damiani, 2018; Garwood, & Ampuja, 2019).

Keywords: perception special education teachers, strength-based approach, special education curriculum

1. Introduction to strength-based approaches.

A strength-based approach is the identification and development of a student's natural talents to educate the whole child. A strength-based educational approach is a philosophical point of view that underscores the positive features of a student's efforts, strengths, and interest (Lopez & Louis, 2009). It believes that every student has talents and strengths that can be harnessed to help them be successful (Anderson, 2000; Saleebey, 2001). The strength-based approach starts with educators finding out about their students' interests and developing them. It is student-centred with the main goal of transforming students into confident, successful lifelong learners (Anderson, 2000). As mentioned, the underlying main belief of a strength-based approach is that all students have potential and that educators must try to find out and implement the type of learning experiences that can help their students realise and maximize their interests and strengths (Lopez & Louis, 2009).

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1.1 Current Education Curriculum

This can be done by way of offering a talent development programme to complement the existing curriculum. Few local special schools offer a talent development programme, and if they do, it is narrowly confined to one area and not in several domains and interest areas (Tan, 2019). As of 2022, there are only two organisations that offer talent development programmes, and they are Pathlight school and Rainbow Centre ("Artist development programme," n.d.; "Rainbow Centre", n.d.). As a result, parents who desire to nurture their children's interests and strengths will have to engage external tutors (Tan, 2019). Yet, implementing a strength-based approach to our special education schools may not be a simple solution. It is crucial to understand the current situation of the schools before any new system introduced is to be successfully implemented. One of these factors to consider is the teachers.

Teachers are the 'heart and pulse' of the school; they would be able to articulate the reasons why implementing such an approach would be beneficial or not, including the alleged challenges that may go along with employing this methodology. According to Tan (2019), teachers are the driving force in a school and teachers' buy-in must be present for any programme to work. It is thus important to understand the connection between teachers' perceptions and their impact on the potential benefits of implementing a strength-based approach in special schools. This would include the extent to which the students' strengths, abilities, and talents are valued and addressed in the current education system (Tan, 2019).

Therefore, two key objectives drive this study. The first objective is to examine the perceptions of the special education teachers in relation to implementing a strength-based approach in the schools. The investigators seek to find out how special education teachers view their student's talents, abilities, and strengths as well as their insights and opinions concerning employing this methodology in special education settings (Research Questions 1 and 3). By knowing teachers' perceptions, the investigators can better promote teachers' awareness of students' unique strengths and interests, and support teachers in implementing a strength-based approach. Furthermore, the investigators hope that schools will develop programmes dedicated to nurturing the skills and interests of the students. For Rainbow Centre (3 schools) that have already implemented a strength-based approach, teachers' perceptions regarding the benefits, challenges as well as the 'how' of implementing such an approach will be sought. For the other schools (MINDS) that have not implemented this approach, the teachers' perceptions regarding the feasibility of this methodology will be examined, including the potential pitfalls or disadvantages of employing such an approach.

The second objective of this study is to investigate to what extent schools have elements of a strength-based approach in their current curriculum. The investigators address this objective by finding out how special education teachers support their students' talents, abilities, and strengths through surveys and interviews, and the extent to which the elements of strength-based education are reflected in students' Individual Education Plan (IEP) (Research Questions 2 and 4).

The significance of this research is that the findings will inform needs investigators of the readiness of special education teachers in accepting an alternative approach (strength-based approach) from what they are familiar with (deficit-based approach). This is so that appropriate interventions can be made to support the teachers in changing their mindset about the implementation of a strength-based approach. Additionally, the gathered

perceptions and feedback from teachers (that have already implemented the strength-based approach in their schools) can be used to guide the development of an effective strength-based approach programme.

1.2 An Alternative Approach to the Current Model _- Strength-Based Approach

Since the beginning of special education in the early 1950s, the discussion about children with special needs has been all but a disability discourse (Baum, Schader, & Herbert, 2014; Elder, Rood, & Damiani, 2018; Lopez, & Louis, 2009). Children with special needs tend to be regarded as one who lacks certain capacities, thus the focus on the disability rather than their abilities leads is a consistent barrier to authentic agency and being valued in the community. A different and fresh paradigm supporting individuals with special needs is needed that actively shifts away from solely relying on deficit and dysfunction bases but also recognises and leverages on strengths, interests, and capabilities. Rather than regard these students as possessing only a deficit or dysfunction and that they need to be 'fixed', the strength-based approach proposes that teachers also examine their students' strengths, interests, and abilities and develop them (Lopez, & Louis, 2009; Tan, 2019).

Very often, society's prejudice concerning students with special needs focuses on their challenges and educational needs, rather than the whole child. Students are placed in special schools that cater to their specific medical diagnoses, away from mainstream population. Educational standards in the mainstream domains whilst providing some levels flexibility in supporting learning disabilities, the national benchmark in academic standardised testing is usually prescribed and adhered to. Due to the additional support needs, these students with special needs are frequently perceived as being deficient, rather than recognised for their strengths and abilities (Aremu, Olufemi, & Tella, 2018; Baum, Schader, & Herbert, 2014; Bećirović & Akbarov, 2016; Umar, 2018; Urmston & Aujla, 2019; Wang, 2019).

The current deficit-based approach that is practiced in many special schools in Singapore fails to provide adequate information about the strengths and abilities of the child and strategies to support him/her. In addition, students with special needs may face multiple learning barriers in addition to their disability; a lack of instructional diversity together with educators who lack effective instructional practices (Mastropieri et al., 2006). Barriers that range from physical to cognitive supports, require the professionalism of trained special needs teachers. These barriers if not recognised and addressed, block active participation, and impede engagement. Higher levels of engagement are a strong predictor of both positive and negative academic outcomes (Moreira et al., 2015). The strength-based approach allows students to see themselves at their best by valuing their strengths and talents. It then allows the student to move that value forward and capitalize on their strengths and talents rather than focus on their deficits (Baum, 2014; Bellini & McConnell, 2010).

The Ecological Model of Child Development by Urie Bronfenbrenner (1998) places children at the centre and identifies families and a strong network of services and programs as significant factors that support children's learning and development within the broad social, political and economic environment (Hertler, Figueredo, Peñaherrera-Aguirre, Fernandes, & Woodley of Menie, 2018). As stated in the Ecological Model, personnel like teachers, family members and people in the community are all important contributors that will help an individual grow to the best of his or her ability and to develop his or her talents and strengths. All these different personnel (people) will impact children's learning and development. The plan will transit ecologically over different periods of the child's development, capturing how support networks change and

serve to guide progressive service planning.

In a similar vein, the strength-based approach holds this view where the child is the centre and focal point and that schools (teachers) should not only work on the difficulties that the child is facing but also embrace and develop his talents and interests (Hertler, Figueredo, Peñaherrera-Aguirre, Fernandes, & Woodley of Menie, 2018). Teachers are therefore one of the key factors in the development of the strengths and interests of children with special needs. In turn, literature suggests strength-based approaches assists teachers in the recognition of their students' motivation and inspiration (Madden, Green & Grant, 2011).

It has been studied and noted that the strength-based approaches have been beneficial for the different disability groups, including students with autism, students with intellectual disabilities, and students with multiple disabilities (Bellini, & McConnell, 2010; Elder, Rood, & Damiani, 2018). Studies also showed strength-based approach helped students with special needs to find confidence in embracing their strengths and talents amidst their challenges and Many have found assurance in knowing that they have abilities that can be celebrated and developed (Bellini, & McConnell, 2010; Elder, Rood, & Damiani, 2018).

1.3 What does a Strength-Based Approach Entail?

There has been growing research regarding the limitations and restrictions accompanying this current deficit-based approach (medical model) (Harry & Klingner, 2007; Lambert, 2018) that most of the special schools in Singapore have adopted. The current deficit-based model (medical model) posits the disability is due to the child's individual impairments and by addressing these said impairments, is the solution to the disability. It does not make available adequate information about the strengths and strategies to support a child's learning and development due to its focus of addressing the child's conditions and impairments to achieve good fit into the environment. This shift focuses on the needs of the impairment rather than the needs of the whole child. Having only a deficit approach also stigmatises and undermines a student's self-confidence and motivation. Motivation theories strive to understand the drive behind a person's progress towards a particular goal or objective. Prominent theories such as self-determination theory (Ryan and Deci 2000) and self-efficacy theory (Bandura 1997) highlights that positive feedback rather than negative feedback better supports learning as perceived competence is an important determinant of motivation. Therefore implementing and having a strength-based approach in the school would encourage and help teachers to (Harry & Klingner, 2007; Lambert, 2018): (i) recognise that what the child learns is always vibrant and multifaceted; (ii) recognise that a child validates his/her learning through different means; (iii) begin with what the child has in terms of abilities and not begin with what the child does not have in terms of skill-sets and write about what would benefit this child in terms of motivating and inspiring these children.

The strength-based approach entails ascertaining what the child likes or is good at so that strategies and approaches can be implemented to develop the child's abilities and skills. In other words, the strength-based approach is about assisting people (teachers, children, and families) to build a coherent and current picture of what a child's learning and development is at the present and plan what it could look like in the future, both in terms of seeking opportunities for growth of his/her challenges as well as incorporating the child's interests or talents to child specific development.

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Some schools have developed programmes and classes specific to the student's interests and strengths. In other schools, these are offered as an after-school programme, while others have embedded this approach into their school timetable. However, for a strength-based approach to take place, the schools would need teachers' expertise or personnel who are exemplary in a particular area or field to conduct the classes and programmes. For example, a teacher who is very good at drawing (art) or playing the piano (music) is needed to develop and enhance these students' strengths and interests (Elder, Rood, & Damiani, 2018; Bozic, Lawthom & Murray, 2017; Garwood, & Ampuja, 2019; Kewanian, Creely, & Southcott, 2021). The expertise is usually to be outsourced if expertise is not found in the existing pool of teachers, external vendors are usually vetted and contracted for technical classes as required, with special needs training as a prerequisite.

Adopting a strength-based approach is not about describing a child's learning and development in a positive light only and ignoring and withdrawing information about the child's deficit and developmental concerns. Rather, it is about working co-currently on the child's deficit and developmental concerns as well as on his strengths and interests, mediated by an individual education plan (IEP). An IEP is an individualized education plan that is an essential step in the process of receiving special education services and usually encompasses the present level of academic achievement and functional performance (PLAAFP). This annual or bi-annual report given by the special schools regarding each student's progress is equivalent to a report card from a regular school, but an IEP has a lot more qualitative comments and feedback in it. In addition, the IEP is usually planned with SMART, a best practice framework to set goals. SMART Goals are, Specific, Measurable, Attainable, Results-oriented, and Time-bound. SMART goals are executable and trackable. The student's parents, teachers, and other service providers collaborate and come to an agreement about the educational plan to meet the child's needs. A strength-based approach in which the report is presented by special educators will help to exemplify students with special needs as competent contributors in the classroom (Weishaar, 2010). The IEP is thus founded and based on the child's development rather than on predetermined expectations and understanding based on a specific age (Elder, Rood, & Damiani, 2018), with a specific focus on strengths and capabilities. Therefore, implementing a strength-based approach is not about: i) Leaving relevant information from an Individual Education Plan (IEP) because it is not positive, or ii) Writing only positive statements and not negative statements about the child's development. A strengths-based IEP will document both abilities as well as areas of improvement. It would record the level of what students can do in the present, while examining what the child can to do next, and how the strengths might be used to set goals to support and address a particular target. In addition, including the child as part of the IEP team and discussion can provide the student a sense of ownership when they are involved about decisions about their IEP, providing an opportunity towards a sense of agency.

The fundamental principles that guide a strength-based approach are as follows (Debros, 2015): i) Every child has unique strengths and abilities; ii) Every child develops and matures from their strengths and abilities; iii). Separate the problem from the child —the child is not the problem; iv) When a child and his team that supports him (including teachers) appreciate and recognise the child's strengths and abilities, then the child has a higher chance of succeeding in terms of learning; v) Strengths are about the child's attributes which include his intellectual, physical, interpersonal skills, disposition (personality), and interests (i.e. hobbies). vi). The

strength-based approach encourages teachers to write and describe statements.

Table 1. A Summary of what is a Strength-Based Approach

Facts (It is…)	Myths (It is not…)
Focusing on a child's strength and what he can do well and not only on what he cannot do.	Teacher only writes about 'positive' things.
Building on a child's potential abilities, the whole child approach, integrative look at academic, cognitive, and social emotional levels of performance.	It is a way of avoiding the truth
Acknowledging that people experience difficulties and challenges that need attention and document current accommodations and support	About accommodating, normalising, and accepting bad behaviour.
Identifying the key predictors when the child is improving and benefiting from their learning. This is so that the methodology and pedagogy can be replicated and further developed and strengthened.	Engrossed on difficulties.
SMART Oriented: Smart, Measurable, Achievable, Realistic and Time Bound Goals	About diminishing or curtailing trepidations
Positive, constructive, and consistent to mental age-appropriate considerations	A means to label, categorise or classify individuals
Keeping in the (ZPD), the zone of proximal development of sensitivity for growth and learning.	A document to stigmatise conditions

Description for the above table.

The review above describes what a strength-based approach is or is not, as summarized in the table below. These characteristics will help to identify the extent that which the current curricula of special schools possess elements of a strength-based approach (Objective 2).

2. Past Findings: implementation of a strength-based approach with persons with special needs

Emerging research in neuroscience and cognitive psychology has identified some positive traits that individuals with special needs have. Simon Baron-Cohen, a clinical psychologist and professor of developmental psychopathology at Cambridge University, found that individuals with ASD are very good in

the fields of systems thinking such as computer programming and mathematics (Baron-Cohen, 1989). Mottron (2011), opined the brains of persons with autism rely less on verbal centres and more in regions that process visual and language leading to these persons outperforming neurotypical children and adults in a range of tasks involving visual and auditory perception. Persons with ASD also consistently completed the classic intelligence test, Raven Matrices, 40% faster than neurotypicals. Gagne's (2008) defines these positive aspects with the term's talents and gifts; talents are learned and practiced competencies while gifts are untrained abilities. Gifts are broadened to encompass intellectual, creative, social, perceptual, and muscular/reflexes abilities, while talents include academics, arts, business, leisure, social affection, sports, and technology. Similarly, Karolyi, Winner, Gray and Sherman (2003) found many individuals with dyslexia to show talents in the areas of arts and music and advocated that these abilities should be developed and improved upon. Oliver Sacks, who is an author and neurologist, promotes the recognition of strengths in different people, especially individuals with special needs because he found that many of these individuals possessed talents and abilities (Sacks, 1996). Treffert (2012) wrote about the connection between ASD and special abilities and strove to understand how individuals with ASD who display special abilities achieve their talents. The condition of autism should be supported as part of the human species and not a defect (Mottron, 2011).

Frith (1989) indicated that a weak central coherence is relevant to understand autism. Persons with autism are hyper focused in on the details, at the expense of the summarized gist, or situational context, a penchant for stimulus over selectivity (Lovaas et al., 1979). The present understanding of the model of central coherence suggests that on a continuum of weak coherence (detail centric focus) to strong coherence (gist focused), persons with autism are at the furthest end of the detail-focused end of the continuum (Happé & Frith, 2006). Some research studies have suggested that having a weak central coherence helps individuals with ASD attain certain abilities and strengths. Shah and Frith (1983) noted that children with autism performed better than their mental age in the Children's Embedded Figure Test which requires field-independent perceptual skills. The strength with field dependence is explained by a reduced central coherence as the process dominance of detailed information over global contextual information. Having a weak central coherence helps individuals to look at the minute details and to hone in and develop their skills and talents. It was also found that many individuals with special needs had weak central coherence (Happe, 2013; Hermelin, 2001; Skorich, May, & Talipski, 2016). Hermelin (2001), who examined individuals with ASD attempting a variety of tasks, concluded that the thought processes of individuals with ASD are typical of a weak central coherence in which an individual's attention is focused and fixated on the details instead of the integrated or combined information. Such emphasis on details is one of the principal reasons leading to the development of expertise in narrow areas of accomplishment for individuals with ASD (Happé, 20 13; Van der Hallen, 20 15).

Thus there are many individuals with ASD who display abilities and talents that are above their current functioning skills. Sternberg (1999), promulgates the theory of successful intelligence as the ability to achieve individual's ambition in life, given the unique circumstances, by leveraging on strengths and accommodating for gaps, to identify and address with a balance of practical analytical and creative abilities. It was noted that when a strength-based approach was utilised with students with special needs, they were looked upon as individuals. Not only were their challenges examined but their strengths and capabilities as well. In the studies

by Elder, Rood, and Damaiani (2018) and Garwood and Ampuja (2019), it was found that students had better perceived learning experiences compared to students who were not exposed to a strength-based approach and thus felt less frustrated with learning. Their academic achievements also improved. Therefore, it was noted that having such an educational methodology using a strength-based approach has contributed to a higher level of self-confidence amongst the students (Armstrong, 2012; Bellini & McConnell, 2010; Debois, 2016) When children with autism, intellectual disabilities, or multiple disabilities experienced a strength-based approach, it was found to be a useful addition to their learning because it provided specific information about the child's abilities and interests that could be incorporated into their interventions (Bellinni & McConnell, 2010; Elder, Rood, & Damiani, 2018).

Parents and educators alike, agree that it created hope and aspirations for not only the child but for them as well (Bellinni & McConnell, 2010; Cosden et al., 2006; Campbell & Tincani, 2011; Elder, Rood, & Damiani, 2018). Through examining the individuals with special needs for their talents and strengths, the studies reviewed above have shown that individuals with special needs indeed possess talents and strengths, and the strength-based approaches can benefit their overall development. By purposefully identifying and supporting these talents and gifts and understanding how these strengths can aide success in natural settings, a positive shift can affect towards a world that is better constructed around their positives and competence.

Since teachers are an important factor in the implementation of a strength-based approach, the investigators of this research study seek to find out teachers' perception of their students' strengths and talents and the strength-based approach (Objective 1), and if teachers recognize these unique talents and strengths of their students through the examination of IEP (Objective 2). For schools that have implemented a strength-based approach, strengths and interests would be written in the child's IEP as one of the school's goals for that child. The information of the current strengths-based approaches or otherwise that are identified through the IEP would serve to illustrate the daily practices and processes used for strengths identification, application, and development through the perceptions of educators. In this research study, the investigators will also find out the challenges as well as the benefits of implementing such a curriculum through the lens of the teachers at these schools.

2.1 Perceptions of Teachers and their Support

The ecological development model on strength-based approaches explains that for special needs children to thrive and succeed, the school, among other factors (social environment and family), plays an important role in helping this child reach his or her fullest potential. If teachers and professionals only perceive their students with special needs as being restricted to the negatives aspects and their deficits, for example, low test scores, negative behavior reports, and deficit-oriented diagnostic labels, then their capability to discriminate learning effectively would be limited (Baum, Schader, & Herbert, 20 14; Elder, Rood, & Damiani, 20 18; Lopez, & Louis, 20 09;). Research studies have also suggested that teachers' perceptions of their students would influence their students' learning and future outcomes. Therefore, the focus of this research will be to examine teachers' perceptions of the students' talents, abilities, and strengths including their perception of the benefits or disadvantages of

implementing a strength-based approach.   The study also seeks to find out how the school (teachers) support their student's talents, abilities, and strengths (Cotton, 1989; Harlin, Sirota, & Bailey, 2009). As stated in the above paragraph, the ecological development model on strength-based approaches (See figure 1), That that for a special needs child to thrive, all aspects of the ecological system need to be looked at and examined. Therefore, how does the strength-based approach utilize such a model to maximize a children's learning potential? Bronfenbrenner's ecological model (Bronfenbrenner & Morris, 2006) is useful in application to a strength-based approach because it explains the interactions that students experience that help direct and shape their development and learning and how the strength-based approach can be utilized to optimize this process.   The following components of the ecological model would demonstrate how children with special needs learn and progress and the importance of their personality which would include their temperament and disposition. Other components to be considered would be how the role of the social environment that these children live in would also shape their learning and adjustment, and more importantly, how a strength-based approach could be injected into each of these components to make the most of a child's learning potential.

3. Inventory of the Child with Special Needs

The following are components that attribute to the optimal learning by Bronfenbrenner and how the strength-based approach would be able to complement and enhance the child's learning process further. Studies have shown that effective learning can occur using the ecological developmental model by Bronfenbrenner to develop interests, abilities, social skills and interpersonal relationships (Bauminger, 2002; Poh, 2016: Wright &Benigno, 2019).

3.1 Process

Bronfenbrenner's developmental ecological model consists of complex, reciprocal interactions among the persons, objects, and symbols in the immediate environment. Effective interactions are those that take place regularly and over an extended period. The interactions are labelled proximal processes (Bronfenbrenner &Morris, 2006). Examples of proximal processes include parent-child and teacher-child interactions and thus having a positive teacher-child interaction is important because when a teacher adopts a strength-based approach, he/she examines the positive attributes of the child and not just about remediating him/her based on the child's deficits. Helping the child find his/her interest and strength, would help the child develop confidence and self-esteem.

3.2 Person

The ecological developmental model also emphasizes understanding the child with special needs and the need to personalise the learning to suit each child because every child is different (Rothbart & Bates, 2006). This could apply to both a typically developing child and a child with special needs. This is in line with the strength-based approach in which each child is valued and the enhancement of the love for learning through the child's

interests. For example, refining and developing savant skills in music, arts, and memory recall kind of activities). Some studies have shown that a strength-based approach is effective in developing and honing in on interests and different types of skills, including savant skills (Armstrong, 2012; Bellini & McConnell 2010).

3.2 Temperament

The temperament of the child is important in this model as well and by implementing a strength-based approach in class, this does not become a cookie cutter programme in which all children must participate in all programs (Rothbart & Bates, 2006). For example, if a child with special needs is a quiet and introverted child and does not loud noises, the teacher would seek out some activities and interests that this child may be attracted to and develop these skills further. In the study by Benzies, & Mychasiuk (2009), a strength-based approach was used in terms of matching the child's temperament and helping the child with his or her strengths. A positive behaviour support intervention was adopted, and children were found to have increased resiliency and therefore showing more effort and interest in their abilities and skill sets.

4. Family

As part of the ecological developmental model, the family is another important aspect and plays an important role in shaping the child to be the best that he or she can be. However this study is examining the benefits of implementing a strength-based approach in school. However some elements of the 'family' may be incorporated into the study. For example, in the survey, one of the questions would be 'On a scale of 1(not important at all) to 5 (very important), how important is parental support in when designing and implementing strength-based approach**.**

4.1 Home environment

One of the ways a person influences a child with special needs positively or negatively is parenting style. When parents adopt a strength-based approach to their parenting skills, they continue to uphold and encourage the skill and interests of the child, in conjunction with the school. There is evidence in many research papers to demonstrate the importance of the link between a positive parenting style and that of the child's learning outcomes (Amato & Fowler, 2002; Boon, 2007; Steinberg, Lamborn, Dornbusch, & Darling, 1992; Steinberg, Mounts, Lamborn, & Dornbusch, 1991; Turner, Chandler, & Heffer, 2009).

4.2 Parents and schools

When parents of children with special needs work together with the school on their child's learning outcomes, the results are promising. Thus when a strength-based approach in school is adopted and when this is translated back to the family and home environment, the skills and interests of the child will be continued to be supported and reinforced (Astone & McLanahan,1991; Hill et al., 2004; Hill & Tyson, 2009; Steinberg et al., 1992).

4.3 Family social network

In Singapore, many families have extended families living with them thus grandparents, aunts and uncles are

living with the nuclear family and many of them play a very active role in supporting the child with special needs. Having the care and assistance of the extended family to continue to seek and develop the child as a whole (in both his/her challenges and his/her strengths) will benefit the child greatly (Sarkisian & Gerstel, 2004). In it important to note that this study will be mainly looking within the school context and not examining family or the social environment.

5. Use of Bronfenbrenner Ecological Development Model for Developing Children with Special Needs

In the Bronfenbrenner Ecological Development system, school plays an important role in terms of the development of a child. The following three studies cited below illustrate how the ecological model has informed specific interventions to develop the intellectual, physical, interpersonal disposition and interests of students with special needs. The findings of these studies demonstrate how the various dimensions of the model – family, school, and social environment, are crucial factors that affect the development of children with special needs.

One study by Poh (2014) described how the framework has informed the development of academic talents and other pursuits, eg interests. It was a school-based project in which different levels of support were given to the students based on the principles and dimensions of the ecological model. For example, in level 1, a core curriculum and enrichment activities were designed for all students to participate in, which acted as a basis for discovering and developing their strengths and interests. The classrooms also strived to support students in building strong foundations in a broad range of subjects. Within each subject, there were enrichment activities such as talks and field trips. These interventions (e.g., field trips, enrichment classes) created opportunities for students to deepen their interests and learning. This research study also demonstrated that it is important for teachers to establish rapport and to care for students as individuals before effective learning can occur. The findings of this study provide evidence of the importance of the interaction between the school and students in directing and shaping their development and learning of their interests.

Another study by Bauminger (2002) made use of the model to guide the development of social skills in students with weak central coherence, particularly children with autism. Using a behavioral approach, intervention focused on teaching interpersonal problem solving, affective knowledge, and social interaction. Results demonstrated progress in which children who underwent the intervention were more likely to initiate positive social interaction with peers after the intervention. These children were also better at problem solving after treatment, providing more relevant solutions and fewer nonsocial solutions to different social situations. In terms of emotional knowledge, children provided more examples of complex emotions post intervention. This study demonstrates how social environment and school play important roles in the development of intellectual and interpersonal disposition of the children with special needs.

Another study by Wright and Benigno (2019), describes the use of the ecological model to develop interpersonal skills of children with weak central coherence within a family. A behaviourist intervention, Student First Approach (FST), was employed in which family engagement was encouraged and fostered. Results showed that there were better social interactions between siblings in the area of communication and

the development of shared interests.

5.1 Curriculum

Having a strength approach within the school curriculum would benefit the child in that the child with special needs would be viewed as a 'whole' child where his/her strengths and challenges are recognized and valued.

5.2 Peer relationships

Peer relations in a school are important aspects to consider according to this model. Peer interactions deliver another significant context for intellectual and socioemotional development in the developmental aspect of a child. Activities in the classroom that integrate skill-building and interest-based activities with those that support students' skills and abilities may benefit better peer relations and school performance for children with special needs.   Providing students with opportunities to 'shine' in their prospective strengths and interests is a way teachers could build students' self-confidence and social skills and enhance peer relations (Altermatt & Pomerantz, 2003). There are studies that showed that using a strength based approach to help in with peer relationships. The results showed that participation in this programme was associated with increased general self-efficacy and peer support, which lowered anxiety and increased self-esteem (Ho, Lai, Lo, Nan & Pon, 2016; Gazelle, 2006; Smith, 2006).

5.3 Social Environment

The last aspect of the ecological developmental model is the social environment.   The social environment may not have direct interactions or linkages with children with special needs, but it may play an important role in shaping the learning outcomes of the child. The social environment would include the child's neighbourhood, parents' workplace, or the family social network.

5.4 Working mothers.

In Singapore, many mothers work, and therefore time with their child with special needs may also be limited. Hence, the time that the mother spends with the child must not always be about remediating the child's challenges but also celebrating their strengths. Some of the techniques one can utilize would be to use positive reinforcements which could be in the form of the child's interest in terms of skills or activities (Lombardi & Coley, 2013).

5.5 Neighbourhood

Research has shown that when caregivers deem that caregivers their neighbourhoods as not being supportive of their child dend their parenting styles are not optimal which could translate to being less demonstrative and the lack of monitoring of the child (Chung &Steinberg, 2006; Gayles, Coatsworth, Pantin, & Szapocznik, 2009). However, it has been shown that when neighbourhoods are more accepting of the child with special needs, parents are less stressed and there are positive links between parenting behaviour and safety. A

neighbourhood that celebrates the strengths and positivity of their special needs' population would in turn also bring out the best in parents that have children with special needs, which inadvertently would also benefit the child greatly (Jones, Forehand, O'Connell, Armistead, & Brody, 2005).

5.6 Dimensions to the ecological developmental model

Dimensions that will be linked to the ecological developmental model would be aspects of teachers' expectations of their students' strengths, teachers' attitudes toward students with their strengths and abilities and teachers' views on the feasibility of having a strength-based approach in school.

6. Current Challenges of strength-based approach including those based on teachers' perceptions.

There are many practitioners and educators who believe that a strength-based approach has many merits and want to have such an approach implemented in their schools. However for many schools, this approach does not get past the interest stage and implementation does not happen due to various reasons (Cornwall, 2018). Having a strength-based approach in schools is also a paradigm shift in thinking for many teachers. Many teachers have not been exposed or taught to seek and look for the strengths in each student and to create opportunities for these students to showcase these interests or talents. It was noted that for some schools in the United States who have implemented a strength-based approach, the teachers are still not allowing their students' interests and talents to influence their academic subject matter during curriculum time (Brownlee, Rawana, & MacArtthur, 2012; Cornwall, 2018). Instead, these students' strengths and talents are channeled towards the end of year extra-curricular activities or as school holiday programmes (Brownlee, Rawana, & MacArtthur, 2012; Cornwall, 2018).

Another challenge of implementing a strength-based approach is that there may be additional costs once this approach is set up in a school (Cornwall, 2018). Schools may need to hire additional personnel (coaches) to hone in on the students' talents or interests (for example, music or art).   There may be educators who believe in the merits of implementing a strength-based approach in schools, but there may also be many educators who may not believe in such an approach. It would be difficult to get the buy-in from all the teachers. Some teachers may push back, against such an implementation, viewing it as a fad and taking away precious time from their core mission of teaching and educating children (Armstrong, 2012; Cornwall, 2018).

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