Inclusive education, Self Determination and Motivation: A Proposed Intervention Strategy for Students with Learning Disabilities/ Difficulties

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of DOCTOR OF PHILISOPHY

By

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Declaration

I, Neel Harit Kausik, hereby declare that the work contained in this thesis titled "Inclusive education, Self Determination and Motivation: A Proposed Intervention Strategy for Students with Learning Disabilities/ Difficulties" has been carried out by me, under the supervision of Dr. Dilwar Hussain, Associate Professor (Psychology), Department of Humanities and Social Sciences, Indian Institute of Technology Guwahati (IITG). Abiding by the formal practice of reporting observations, due acknowledgements have been made for the citations of other investigations. This work has not been submitted elsewhere for the award of any degree.

Guwahati

June, 2019

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Certificate

This is to certify that the work contained in the thesis titled "Inclusive education, Self Determination and Motivation: A Proposed Intervention Strategy for Students with Learning Disabilities/ Difficulties" by Neel Harit Kausik (Roll No. 136141005), a student of the Department of Humanities and Social Sciences, Indian Institute of Technology Guwahati (IITG), for the award of the degree of Doctor of Philosophy was carried out under my supervision. The results embodied in the thesis have not been submitted to any other university or institute for the award of any degree or diploma.

Guwahati

June, 2019

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Dedicated to all those students who heroically battle this hidden disability

Acknowledgement

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Abstract

Learning Disability (LD) being a condition which affects the whole person, this thesis explored the social, emotional and motivational issues of students with LD. The thesis has been divided into two empirical studies. The first study investigated the impact of inclusive education on students with LD with regard to their peer relationships and other self-related variables such as academic motivation, academic self-efficacy and well-being. Inclusive education in India is a recent area of development and the evaluation of its impact on socio-emotional functioning of the students with LD is of utmost necessity. It is believed to foster greater acceptance of children with disability by their peers. Thus, this study looked into this aspect by investigating the impact on peer relationships. Three groups of students were compared to assess the impact of inclusive education on peer relationships, that is, students with LD studying in special schools, students with LD studying in inclusive schools and students without LD studying in inclusive schools. The sub-variables considered to study peer relationships were: total number of friends, number of friends in school, number of friends outside school, number of friends of the same age, number of older friends, number of younger friends and friendship quality. Results of Kruskal Wallis revealed that students with LD studying in special schools had the highest total number of friends and also the highest number of friends outside school compared to the other two groups. The students without LD studying in inclusive schools had the highest number of friends in school. The students with LD studying in inclusive schools had the highest number of friends who are not the same age as them and also the least number of friends in school. The results of friendship quality (analysed using MANOVA) revealed that students with LD studying in inclusive schools had more conflict ridden friendships. The other self-related variables considered in this study were: academic motivation, academic self-efficacy and well-being. Although MANOVA results showed no significant difference between the

three groups, students without LD had the highest score on academic motivation. They also had significantly higher scores on academic self-efficacy than the other two groups. Their well-being scores were also significantly higher than students with LD studying in inclusive schools. This study also gauged the attitude of teachers towards including students with LD in their classrooms. It was found that teachers overall, and especially teachers from Government schools, have a negative attitude towards including students with LD in their classrooms. The second study focussed on developing an intervention program and testing its impact on the satisfaction of basic psychological needs, academic motivation, academic self-efficacy and well-being of students with LD. The principles of Self-Determination Theory and Nurtured Heart Approach were integrated and used to develop an intervention aimed to create conditions in the classroom settings which supported the satisfaction of basic psychological needs that are proposed by the Self-Determination Theory. Seven participants with LD attended at least 36 sessions each, which were spread over a period of 3 months. A pretest-posttest design was followed to conduct the study. Wilcoxon signed ranks test was used to check for difference in scores before and after the implementation of the intervention. Results revealed significant difference between scores before and after the implementation of the intervention for basic need satisfaction, academic motivation and academic self-efficacy, but not for well-being. The post-intervention scores were higher for the more intrinsic forms of motivation, need satisfaction and for academic self-efficacy. Observation of the changes in behavior of the participants are also included to augment the quantitative data. Results of this study can be used in educational settings to address motivational concerns. This is especially true for students with LD because of their challenges with educational/learning tasks.

Synopsis

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Department	:Department of Humanities and Social Sciences
Institute	: Indian Institute of Technology Guwahati
Title of the Thesis	**:** Inclusive education, Self Determination and Motivation: A Proposed Intervention Strategy for Students with Learning Disabilities/ Difficulties
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Introduction

Students spend 15,000 hours of the first two decades of their lives in schools (Deci, Vallerand, Pelletier & Ryan, 1991). However, not all students do equally well in school. Some of them have academic difficulties in spite of their ability and intelligence. This invisible barrier that comes in the way of their learning is known as learning disability**.**

Learning disabilities/difficulties/disorders (hence forth LD) is an umbrella term which includes different types of learning disabilities that have different manifestations. The main characteristics of LD involve academic difficulties in reading and mathematics and language problems (Wong et al., 2008). Other problems include social emotional problems (Margalit & Al Yagon, 2002), working memory problems (Swanson, Cooney & McNamara, 2004) and self-regulation problems (Harris, Reid & Graham, 2004). LD is a unique condition which affects the whole person- his social, emotional and cognitive dimensions (Wong et al., 2008).

Therefore, this study is focused not only on the academic domain but also the social-emotional domain of students with LD.

The current research includes two separate empirical studies. The first study aims to investigate for the impact of inclusive education on students with LD, with reference to their peer relationships and other relevant variables. The second study deals with developing and testing an intervention program based on Self-Determination theory and Nurtured Heart Approach to target motivational concerns, for students with LD.

Research Questions

The following research questions have been framed for this study:

1. What impact has inclusive education had on students with LD?
    A. What is the impact of inclusive education on peer relationships of students with LD with regard to the number of friends that they have?
    B. What is the impact of inclusive education on peer relationships of students with LD with regard to the age of the friends?
    C. What is the impact of inclusive education on the friendship quality of students with LD?
    D. What is the level of intrinsic academic motivation, academic self-efficacy and well-being of students with LD as compared to students without LD?
2. What is the attitude of the regular classroom teachers towards including students with LD in their classrooms?
3. What impact does the proposed intervention strategy based on Self-Determination theory and Nurtured Heart Approach have on students with LD?
    A) How does the strategies based on SDT (such as providing relevance for the task, providing choice and avoidance of control) and NHA affect need for autonomy?

B) How does the strategies based on SDT (such as providing clarity of expectations, optimal challenges and positive feedback) and NHA affect the need for competence?

C) How does the strategies based on SDT (such as providing empathy, affection, dependability and attunement) and NHA affect need for relatedness?

D) What is the impact of the strategies based on SDT and NHA on academic motivation, academic self-efficacy and subjective well-being of students with LD?

Study 1: Impact of Inclusive Education on Psycho-social Functioning of Students with LD

Inclusive education strives to bring marginalized students to the mainstream and make everyday education accessible to all learners (Nind, 2014). In a special education system children with special needs are separated from their peers as they attend a different school. This kind of marginalization and/or exclusion can lead to the development of inferiority among the students (Sanjeev & Kumar, 2007). An inclusive education system aims to curb such barriers at the outset. In such a system all children (with and without disabilities) learn together. Although it has emerged as a policy that is mostly prevalent in the schools, its impact on students remains to be assessed.

It is believed that students with LD form a major section of the population who are being "included" in mainstream schools. Therefore, this study was conceptualized to explore how they are impacted with respect to various relevant variables. The first variable considered in this study is peer relationships in terms of total number of friends, total number of friends in school, total number of friends outside school, number of friends of same age, number of older

friends, number of younger friends and friendship quality. A number of studies have reported that students with LD were more rejected and neglected compared with students without LD (such as Bryan, 1974; Siperstein et al., 1978; Weiner et al., 1990). Thus this study attempted to look into whether such issues are prevalent in an inclusive educational setting too.

Other variables considered were academic motivation, academic self-efficacy and well-being. Academic self-efficacy refers to student's perceived beliefs in their capabilities with respect to tasks in the academic domain (Schunk & Pajares, 2002). Well-being can be understood as subjective well-being under the hedonic view. SWB consists of three components: the presence of positive mood, the absence of negative mood and life satisfaction.

Rationale

Two advantages of inclusive education as listed by McGregor and Vogelsberg (1998) are:

- Acceptance of children with disabilities is increased more in an inclusive set up.
- Friendships develop more between children with disabilities and those without disabilities in an inclusive set up.

There is considerable evidence to show that children with LD have problems with social relationships and social interactions (Wiener, 2004). But, as mentioned above, inclusive education fosters greater acceptance of students with disabilities and leads to more friendships being formed. Further, children who have close friends are psychologically better adjusted. In the light of all these aspects this study aims to study what impact does inclusive education have on peer acceptance and peer relationships of students with LD.

The most important variable for the success of the inclusive education program is the regular classroom teacher (Das, Sharma & Singh, 2012). A positive attitude makes inclusion possible (Moffat, 2011). Since the attitude of teachers will influence the classroom practices, the attitude of teachers towards students with LD will be studied.

Inclusive education aims at all the stakeholders (including learners) (Bindal & Sharma, 2010). However, students are seldom taken as participants in studies on inclusive education and its effect (Goransson & Nilholm, 2014). This is why, this study intends to fill this gap and contribute to understanding their experiences and inform us on how best to support and enhance inclusion in classrooms.

Research Questions

The research questions framed for this study are as follows:

1. What impact has inclusive education had on students with LD?
    A. What is the impact of inclusive education on peer relationships of students with LD with regard to the number of friends that they have?
    B. What is the impact of inclusive education on peer relationships of students with LD with regard to the age of the friends?
    C. What is the impact of inclusive education on the friendship quality of students with LD?
    D. What is the level of intrinsic academic motivation, academic self-efficacy and well-being of students with LD as compared to students without LD?
2. What is the attitude of the regular classroom teachers towards including students with LD in their classrooms?

Method

Participants

The first study consisted of two primary research questions. To address the first research question, the sample consisted of students with LD studying in special schools (n = 72), students with LD studying in inclusive schools (n = 75) and students without LD studying in inclusive schools (n = 75). The students were in the age group of 10 to 16 years and were from

two cities of India, Chennai and Guwahati. For the second research question, the sample consisted of teachers from different schools in the same two cities of India. There were a total of 257 participants, out of which 185 were from Private schools and 72 were from Government schools. Teachers who taught the primary classes were excluded from the study.

Measurement Tools

To collect the data about the number of friends, all student participants were asked to write down the names of their friends, the school they went to and their age.

The other measurement tools used are as follows:

1. Self-Regulation Questionnaire – Academic (Deci, E. L., Hodges, R., Pierson, L., & Tomassone, J., 1992).
2. Children's Self-Efficacy Scale (Bandura, 2006).
3. Personal Wellbeing Index – School Children (Cummins & Lau, 2005).
4. The Friendship Quality Questionnaire- Revised (Parker & Asher, 1993).
5. The Teacher Attitude Toward Inclusion Scale (Cullen, Gregory & Noto, 2010).

Procedure

For the purpose of research question 1, various schools in two cities in India (Chennai and Guwahati) were approached for data collection. Consent was taken from the school authorities. The participants for this research question included students with LD studying in special schools, students with LD studying in inclusive schools and students without LD studying in inclusive schools. They were administered the questionnaires in a group setting. They were first given the instruction for each questionnaire and asked to fill the demographic details. Any queries they had were answered. It was made sure that a teacher who spoke the local vernacular language was also present during the data collection so that the queries could be answered in the vernacular language too.

For the research question 2, teachers of Government and Private schools were approached. Consent was taken from them. Instruction were given to them on how to fill the questionnaire and then they were asked to complete it.

Results

Results of Research Question 1(A) and 1(B): Number of friends and age of friends

Comparisons were made between three groups of students viz. students with LD studying in special school, students with LD studying in inclusive schools and students without LD studying in inclusive schools on six sub-variables, that is, total number of friends, number of friends in school, number of friends outside school, number of friends of same age, number of older friends and number of younger friends. The data was checked for normality, outliers and the assumption of equality of variance. Since the assumptions for parametric tests (normal distribution of scores) were violated for most of the variables, nonparametric test, that is, Kruskal Wallis Test was conducted.

For the total number of friends, there was a significant difference among the three groups, $H(2) = 19.238$, $p<.05$. The data indicates that students without LD studying in special schools had the highest number of total friends, followed by students without LD studying in inclusive schools and students with LD studying in inclusive schools.

With regard to number of friends that the students have in school, there was a significant difference among the three groups, $H(2) = 9.487$, $p<.05$. It could be observed from the data that students without LD had the highest number of friends in school, followed by students with LD studying in special schools and then by students with LD studying in inclusive schools.

When the number of friends that the students have outside school was analysed, the difference between the groups was again found to be significant, $H(2) = 6.868$, $p<.05$. With

regard to this variable, students with LD studying in special schools had the highest number of friends outside school, followed by students with LD studying in inclusive schools and then by students without LD studying in inclusive schools.

Comparison of friends of same age among the three groups resulted in a significant difference, $H(2) = 57.455$, $p<.05$. Students with LD studying in special schools had the highest number of friends belonging to the same age group, followed by students without LD studying in inclusive schools and then by students with LD studying in inclusive schools.

For the number of older friends, a significant difference was again observed among the three groups, $H(2) = 14.843$, $p<.05$. Students with LD studying in inclusive schools reported to have the highest number of older friends, followed by students without LD studying in inclusive schools and then by students with LD studying in special schools.

The number of younger friends was also significantly different among the three groups, $H(2) = 28.665$, $p<.05$. For the number of younger friends too, students with LD studying in inclusive schools had reported to have the highest number of younger friends among the three groups, followed by students without LD studying in inclusive schools and then by student with LD studying in special schools. Thus, it seems that students with LD studying in inclusive schools had the highest number of friends who were not the same age as them, compared to the other two groups.

Results of Research Question 1(C): Friendship quality

Apart from the number of friends, the study also looked into friendship quality of the three groups of students to better understand the impact of inclusive education. Friendship quality was measured using Friendship Quality Questionnaire - Revised. This scale describes friendship quality in terms of six areas/ sub-scales: companionship and recreation, validation and caring, help and guidance, intimate disclosure, conflict resolution, conflict and betrayal.

To compare the three groups on each sub-scale, the data was analysed using MANOVA. All the assumptions for MANOVA were checked for the given set of data. The results of the MANOVA indicated that using Wilks' Lambda there was a significant difference among the three groups of students (Wilks' $\lambda = .834$, F (12,428) = 3.39, $p<.05$). The univariate analysis showed that there was a significant difference among the three groups of students on the conflict and betrayal sub-scale, F (2,219) = 11.485, $p<.05$.

A lower score on this sub-scale indicates a better quality of friendship. Further Post Hoc test (Tukey HSD) revealed that the scores of the students with LD studying in inclusive schools were significantly higher than students with LD studying in special schools ($p<.05$) on the conflict and betrayal sub-scale. Students with LD studying in inclusive schools also scored significantly higher scores on conflict and betrayal sub-scale than students without LD studying in inclusive schools ($p<.05$).

Results of Research Question 1(D): Academic motivation, Academic self-efficacy and Well-being

The fourth part of the first research question looked into the impact of inclusive education on academic motivation, academic self-efficacy and well-being. Academic motivation was measured using the Self-Regulation Questionnaire – Academic, which yields two sub-scales: controlled and autonomous regulation.

MANOVA was conducted to look for differences among the three groups on the controlled and autonomous subscale of the Self-Regulation questionnaire- Academic. Using Pillai's trace no significant effect of the groups of students was found on the controlled and autonomous subscale, $V = .034$, F (4,438) = 1.87, $p > .05$.

Further, separate univariate ANOVAs revealed a significant difference among the groups on controlled subscale, F (2,219) = 2.84, $p<.05$. However, it did not find a significant difference among the groups of students on the autonomous scale, F (2,219) = 2.56, $p>.05$.

However, a general trend was observed in the scores which demonstrates that students without LD studying in inclusive schools scored the highest in both the subscales of motivation followed by students with LD studying in inclusive schools. The students with LD studying in special schools obtained the least scores on both controlled and autonomous subscales of motivation.

The fourth part of the first research question also looked into the variables of academic self-efficacy and well-being. Children's Self-efficacy Scale was used to measure the academic self-efficacy of the students of the three groups. Personal Well-Being Index – School Children was used to measure well-being of students of the three groups. One-way ANOVA was conducted to analyse whether there were differences among the three groups on the variable of academic self-efficacy and well-being.

The results of ANOVA showed that there was a significant effect of the groups of students on academic self-efficacy, F (2,219) = 15.16, p<.05, r = 0.35. A Tukey post hoc test revealed that the academic self-efficacy of students without LD studying in inclusive schools was significantly higher than students with LD studying in special schools (p<.05) and also students with LD studying in inclusive schools (p<.05).

The well-being of the three groups of students was also analysed using ANOVA. Results indicated a significant difference among the three groups of students on their well-being scores, F (2,219) = 3.08, p<.05, r = 0.17. Further post hoc test (Tukey's test) showed that students without LD studying in inclusive schools scored significantly higher on well-being than students with LD studying in inclusive schools (p<.05).

Results of Research Question 2: Attitude of teachers

The second Research Question of this study looked at the attitude of regular classroom teachers towards including students with LD into their classrooms. For this purpose, the Teachers

Attitude Towards Inclusion Scale (TATIS) was used on 257 teachers from Private and Government schools. The scores on this scale can range from 14 to 98, with 42 being the mid-point. A lower score in this scale meant a more favorable attitude towards inclusion. Out of the entire sample only 10.9% has scores below 42 and the rest 89.1% has scores higher than 42. Also, the overall mean obtained on TATIS is 50.11, which is higher than 42 (the mid-point for the range of scores on TATIS). This does not reveal a favorable attitude of the teachers towards including students with LD in their classrooms. Also a greater percentage of teachers (95.83%) from Government schools have scored above 42, while a lower percentage of teachers (86.49%) from Private schools have scored greater than 42.

Independent t-test was performed to further analyse the difference in scores obtained by Government and Private school teachers on TATIS. On average, the teachers from Government schools obtained a higher total score on TATIS (M = 51.82, SE = 5.837), than the teachers from Private schools (M = 49.45, SE = 7.105). This difference, was significant t (255) = -2.519, p = .012.

Independent t tests were also performed for the three factors of TATIS to analyse the difference (if any) in scores obtained by teachers of Government schools and Private Schools on the three factors. The first factor of the scale is “Attitudes toward student with disabilities in inclusive settings”. On this factor, the Government school teachers obtained a higher score (M = 22.94, SE = 3.512), than the Private school teachers (M = 21.03, SE = 4.462). This difference was found to be significant, t (255) = -3.262, p = .001. No significant differences were observed for the other two factors: “Beliefs about the efficacy of inclusion” and “Beliefs about professional roles and responsibilities”.

Discussion and Implications

Discussion of Research Questions 1(A) and 1(B): Number of friends and Age of friends

The results showed that students with LD studying in special schools had significantly higher total number of friends than students with LD studying in inclusive schools. They also had higher number of friends outside their school. Also, students without LD studying in inclusive schools had significantly higher number of friends in school than students with LD studying in inclusive schools. The results point in the direction that students with LD studying in inclusive schools have fewer friends. What is more significant is that they had fewer friends in schools than their peers without LD.

With respect to number of friends, there have been conflicting findings in the previous works. A number of studies have found no difference between students with LD and students without LD (such as Vaughn et al., 1993; Juvonen and Bear, 1992). Other studies (like Tur-Kaspa et al., 1999; Vaughn and Elbaum, 1999) have found that students with LD have fewer friends than students without LD. However, if we look into the group of students with LD studying in special schools, they had significantly higher total number of friends than students with LD studying in inclusive schools. In a special school there is an implicit understanding among the students that all of them have some sort of difficulty. Farmer and Farmer (1996) mention that students with LD tend to form friendships with peers with shared characteristics. In a special school students get more opportunity to perceive these shared similarities. Hence the students with LD studying in special schools have a larger social circle than students with LD studying in inclusive schools.

Students with LD tend to have more friends who do not attend the same school as them (Wiener and Schneider, 2002). In the current study, students with LD studying in special schools also reported to have greater number of friends outside of schools compared to the

other two groups. They attend a lot of classes for extra-curricular activities outside of regular class hours. Hence, they also get the opportunity to make friends outside of the school premises.

The present findings also showed that students without LD studying in inclusive schools had significantly higher number of friends in school than students with LD studying in inclusive schools. This is indicative (albeit indirectly) of the fact that students with LD experience greater peer rejection or are neglected more than students without LD. Other studies have also found that students with LD are not as well accepted as the other students and have lower number of friends (especially in school) (such as Tur-Kaspa et al., 1999; Gottlieb et al., 1986, Gresham et al., 1988; Pavri and Luftig,, 2000).

Discussion of Research Question 1(C): Friendship Quality

The students with LD studying in inclusive schools scored more on the conflict and betrayal sub-scale compared to both the other groups. This denoted that students with LD studying in inclusive schools have more often felt betrayed in terms of their intimate thoughts and secrets than the other two groups of students. A study by Wiener and Schneider (2002) also found that the friendships of students with LD are marked by greater conflict than students without LD. Stone and La Greca (1990) found that students with LD were overrepresented in rejected and neglected sociometric groups. Vaughn et al., (1996) also added that students with LD were more likely to be rejected than average/high achieving students. Students with LD also scored lower on social attraction and higher on social rejection than comparison children (Bryan, 1976).

Implications of Results of Research Questions 1(A), 1(B) and 1(C): Number of friends, Age of friends and Friendship Quality

The results of the current study show that examining the impact of inclusive education and different educational placements is a complex matter warranting investigation of different

contexts. Therefore, one of the foremost implication of these results is that a lot remains to be understood in the context of impact of inclusive education.

Apart from interventions, teachers and parents of students with LD can also make a great impact on improving the social deficits of these students. Teachers should foster a classroom environment which is compatible with students with diverse learning needs. Such a classroom should teach students without disabilities to embrace their peers with disabilities. At home, parents should also shoulder responsibilities in this line. Parents can make an effort to make their home environment which attracts and welcomes their children's friends.

The greater purpose of inclusive education is to build a more inclusive society where no child is left behind. Necessary steps need to be taken so that inclusion itself doesn't become a factor for exclusion. To actually realize social inclusion, acceptance of these students with LD must be facilitated by the school authorities, teachers and policy makers.

Discussion of Research Question 1(D): Academic Motivation

The current study also looked at the variables of academic motivation, academic self-efficacy and well-being among the groups of students according to the different schools. The students with LD studying in special schools were found to be scoring significantly lower on both autonomous and controlled academic motivation. Lee and Zentall (2012) also reported similar findings when they found that students with reading difficulties/ disabilities had lower motivation (both extrinsic and intrinsic) than students without disabilities. The findings of the present study were similar to the findings of a study by Grolnick and Ryan (1990) which also found that students with LD scored lower on academic self-regulation than the participants of a control group comprising of students without LD. Ellis (1986) reported that students with LD had lower levels of intrinsic motivation. In addition to that the present study found that students with LD scored lower on controlled or extrinsic motivation as well.

Discussion of Research Question 1(D): Academic Self-efficacy

The results revealed that students with LD, irrespective of the school, had significantly lower academic self-efficacy. Earlier studies have established that students with LD have lower academic self-efficacy than students without LD (e.g. Baum & Owen, 1988; Tabassam & Grainger, 2002).

According to Bandura (1997) mastery experiences are one of the sources of influence on self-efficacy. In case of students with LD mastery experiences in the field of academics is often a rare occurrence. Apart from repeated failure experiences, the time required for them to master a particular academic skill may also be longer compared to their peers without disability. Thus, mastery experience as a source of self-efficacy may not always be present to enhance their academic self-efficacy.

Discussion of Research Question 1(D): Well-being

The third variable that this research question studied was *well-being*. Well-being of the three groups of students was compared and it was found that students with LD studying in inclusive schools had scored significantly lower on well-being compared to students without LD studying in inclusive schools. Support for these findings can only be indirectly sought from previous work. Svetaz et al. (2000) had found that the risk for emotional distress among adolescents with LD was twice than that of adolescents without LD. Students with LD have been found to be at risk for severe depression and suicide (Huntington & Bender, 1993).

The students with LD studying in special schools would have different experiences where they may not feel like they are different than the other students because of their disability. Also they probably have a more supportive teaching environment. The teachers in a special school are all trained in the specialised field of special education, while in an inclusive school the regular classroom teacher may not be so. Thus, they may be more empathic and

supportive of the students and their needs. Thus, no significant difference in well-being was observed between the students with LD studying in special schools and students without LD studying in inclusive schools.

Implications of the Results of Research Question 1(D)

The students with LD (irrespective of the school they are attending) had shown a low level of intrinsic motivation. A prominent implication of these findings is that focus should also be given to ameliorate these motivational concerns/ deficits as apart of intervention over and above those aiming at remedial education.

Within an inclusive set up students with different abilities and needs would be studying together. To make this system successful care has to be provided that no student is left behind in any manner. Apart from academic achievement, the school is an institution that plays a major role on in building self-related concepts. Self-efficacy should be considered another area to work on so that these academic perceptions of students with LD can be enhanced.

The well-being of students with LD studying in inclusive schools does not seem to be as sound as the others. Interventions for LD need to look beyond the academic domains and focus on these variables too. Schools can provide counselling to recognize and intervene in the emotional issues being dealt with by the students with LD.

Discussion of Research Question 2: Attitude of teachers

Results of the study indicated that even though the teachers do not have a very positive attitude towards including students with LD in their classrooms, the attitude of Government school teachers is more negative than that of the Private school teachers. There is a general lack of awareness in India about LD (Karande & Gogtay, 2010). This may be one of the factors which led to the kind of results that were obtained in this study. Since teachers are not very aware

about what this condition exactly is, it is difficult for them to conceive of a classroom setting where they may effectively teach students with and without LD alike.

The private schools in India are run or governed by individuals and/or private organisations. There is intense competition among these schools and hence, they may have a better support system for their regular classroom teachers. The presence of school counselors and special educators in these schools may enable these teachers to have a better sense of efficacy in dealing with students with LD. However, such support systems are absent in Government schools and they may see these students as only adding on to their workload and responsibilities. This reflects in their negative attitude towards including students with LD.

Implications of Results of Research Question 2

India is home to the second largest educational system in the world, comprising of learners from diverse economic, cultural and linguistic background (Singhal, 2006). In the last few decades, inclusive education has garnered primary focus in the educational scenario in India (Bhatnagar & Das, 2013). Another significant development in this regard was the inclusion of LD as a Benchmark Disability under the new disability law, The Rights of Persons with Disabilities (RPWD) Act, 2016. For the successful translation of all these provisions, the attitude of the classroom teachers will play a decisive role, since serving the diverse needs of children with LD now becomes a part of their responsibility.

The attitude of teachers and their teaching practices have a major impact on the academic and social achievement of all students, especially on the ones with disabilities (Bhatnagar & Das, 2014a). In this context the findings of the current study highlights the utmost necessity of changing the teacher's attitudes. The first step in this regard can be providing adequate and proper knowledge about the condition of LD through mediums such as workshops, teacher training courses etc.

Also awareness and information about one disability can lead to change in attitude towards disability in general. In India, there are only a few parent group/ non-government organisations/ professional agencies to advocate for the rights of students with LD. Hence there is also a need to strengthen such organisations and at the same time to launch more such organisations who can spread awareness about LD.

Study 2: Development and Testing of an Intervention for Students with LD

Students with LD experience difficulties in academic domain and also other behavioral issues. Major studies have been successful in addressing reading deficits and evidence based studies on other domains are lacking (Alex, 2013). Therefore, an intervention programme which addresses motivational issues in children with LD is needed because motivational issues can exacerbate the difficulties resulting from LD. To fulfill this purpose, the present study was conceptualized to shed light on these aspects, as well as, develop an intervention strategy that can enhance their academic motivation so that it does not intensify their difficulties. To this effect, the tenets of two approaches (namely, Self-Determination Theory and Nurtured Heart Approach) were combined and they were implemented in an attempt to offer a setting which facilitated the satisfaction of three basic psychological needs.

Self-Determination Theory

Self-Determination theory (SDT) is concerned with questions like why people act, how different forms of motivation can lead to different outcomes and what kind of social contextual conditions aid or hinder optimal functioning and well-being via psychological needs (Vieling, Standage & Treasure, 2007). SDT predicts that human beings have three universal, basic psychological needs- need for autonomy, need for competence and need for relatedness (Deci & Ryan, 2000).

SDT distinguishes between intrinsic motivation and extrinsic motivation. Intrinsically motivated behaviors are performed out of interest and thus require no benefit (Deci & Ryan, 2000). A number of studies have found that intrinsic motivation is associated with better learning, performance and well-being (e.g. Benware & Deci,1984; Deci, Schwartz, Sheinman & Ryan, 1981; Grolnick & Ryan,1987; Valas & Sovik, 1993).

Apart from intrinsic motivation, SDT also talks about extrinsic motivation and its different kinds based on the degree to which they are autonomous. Extrinsic motivation is demonstrated whenever an activity is done to attain some separable outcome. Extrinsically motivated behaviors can vary in their degree of self-determination. Arranged in a continuum describing their degree of self-determination, extrinsic motivation ranges from amotivation to integration. Intrinsic motivation and greater internalization of extrinsic forms of motivation can be facilitated by the satisfaction of the three basic psychological needs- need for autonomy, need for competence and need for relatedness.

Nurtured Heart Approach

Nurtured Heart Approach (NHA) was developed by Howard Glasser to help parents understand how to manage the disruptive behaviors of children (Hektner et.al, 2013). According to Glasser this approach is about bringing a transformation in the adult which ultimately transforms the behavior of the child (Glasser & Block, 2011).

The NHA gives us an alternate to conventional mode of parenting and teaching which may not be equally effective for all different children. It is dictated by three stands:

1. Refuse to energize negativity.
2. Energize the positive.
3. Clearly but unenergetically enforce limits.

The NHA is built on the foundation of refusing to focus on problems (Glasser & Block, 2011). Parents and teachers are urged to deny to focus energy on the problems, to try to find out what the problem is or what could be the solution to that problem. As an extension to the first stand, NHA's second stand urges the parents and teachers to focus on the positive. Whenever the child is doing something right or not doing something wrong, that act needs to be recognized, appreciated and praised. To do this, NHA suggests four techniques:

(a) *Active Recognition*.

(b) *Experiential Recognition***.**

(c) *Proactive Recognition***.**

(d) *Creative Recognition***.**

Rationale

A lot of literature in special education has been directed towards developing structures that control students through behavior modification, in an effort to improve their academic achievement in schools. In the context of regular students interest has been given towards promoting their intrinsic motivation and potential damage of controlling contexts. However, studies on intrinsic motivation of students with LD have been few (Deci, Hodges, Pierson & Tomassone, 1992). Those that have been conducted have focused on comparison of self-determination or the predictive nature of self-determination on academic achievement. Further, a number of studies have found that students with LD have lower self-determination compared to students without LD (e.g. Raskind et al., 1999; Mithaug, Campeau & Wolman, 2003; Shogren, Lopez, Wehmeyer, Little & Pressgrove, 2006; Yailagh et al., 2014). In addition to that intervention strategies in educational settings especially pertinent for students with LD are lacking. Therefore, it is the intention of the present study to develop an intervention program which aims to create a positive environment that supports the satisfaction of the basic

psychological needs (of autonomy, competence and relatedness) in order to enhance the academic intrinsic motivation of students with LD.

The field of LD lacks such a macro approach which identifies general principles of learning and education and applies them to all students (Deci & Chandler, 1986). The intended study can fill this gap by generating principles which will benefit not only students with LD but also students without LD.

Model for Intervention: Integration of SDT and NHA

The primary aim of this study is to develop an intervention program for students with LD and check its impact on need fulfillment, academic motivation, academic self-efficacy and well-being of the students with LD. The intervention program is based on Self Determination Theory (SDT). Along with SDT, NHA was also incorporated into this intervention program. NHA proposes three stands which form the foundation of this approach along with the recognitions. Theses stands and recognitions fit well with the components that fulfill the satisfaction of the needs as proposed by SDT. Hence, they were integrated to provide conditions to the students with LD so that it supported the satisfaction of the three needs.

According to Silva, Marques and Teixeira (2014) the key components as described in other interventions based on SDT (e.g. Haerens et al., 2013; Reeve, 2009; Su & Reeve, 2011) are as follows:

- Autonomy support: Relevance (by presenting clear, justified, meaningful rationale), choice (providing options wherever possible), avoidance of control (by not using intimidating or guilt inducing statements).

- Support for competence: Clarity of expectations (collaboratively setting goals and discussing what to expect and what not), optimal challenges (setting goals according to

the student's capacities and skills), and feedback (providing clear and relevant feedback).

- Support for relatedness: empathy (by taking the student's perspective), affection (by showing genuine appreciation and concern for the student), dependability (being present in time of need), and attunement (through paying careful attention to and gathering knowledge about the student).

NHA intends to bring changes in the undesirable behavior of children by first initiating changes in the way adults respond to those behaviors (Glasser & Block, 2011). At the heart of NHA are three stands: Refuse to energize negativity, Energize the positive and Clearly but un-energetically enforce limits. To focus on the desirable behaviors, NHA suggests three recognitions viz. active recognition, experiential recognition, proactive recognition and creative recognition. These stands and recognitions combined with the strategies of SDT, form the model for this intervention program.

The following **research questions** were addressed in this study-

3. What impact does the proposed intervention strategy based on Self-Determination theory and NHA have on students with LD?

   A) How does the strategies based on SDT (i.e. providing relevance for the task, providing choice and avoidance of control) and NHA affect need for autonomy?

   B) How does the strategies based on SDT (i.e. providing clarity of expectations, optimal challenges and positive feedback) and NHA affect need for competence?

   C) How does the strategies based on SDT (i.e. providing empathy, affection, dependability and attunement) and NHA affect need for relatedness?

D) What is the impact of the strategies based on SDT and NHA on academic motivation, academic self-efficacy and subjective well-being of students with LD?

Method

Participants

The study consisted of 7 students with LD in the age group of 10-16 years. Out of the 7 participants, 6 were boys and 1 was a girl. All of them were studying in a special school in Chennai, India which was following the National Institute of Open Schooling (NIOS) syllabus. The participants started their education in mainstream, regular schools. However, due to their academic issues and difficulties they were pulled out of the mainstream schools. This was done following a psychological assessment and diagnosis for Specific Learning Disabilities. All the participants were reported to have normal IQ by the school authorities. All the participants belonged to similar socio-economic background and had either Tamil or Malayalam as their first language.

Measurement Tools

The measurement tools used are as follows:

1. Basic Need Satisfaction Scale (Gagne, 2003).
2. Self-Regulation Questionnaire – Academic (Deci, E. L., Hodges, R., Pierson, L., & Tomassone, J., 1992).
3. Children's Self-Efficacy Scale (Bandura, 2006).
4. Personal Wellbeing Index – School Children (Cummins & Lau, 2005).

Procedure

A special school in Chennai, India was contacted for permission for data collection for this study. Consent was taken from school authority. This was essentially a purposive sample. The children were already assessed for LD. The intervention program was conducted during the free class hours and the non-academic class hours (such as music, painting, craft). Each session was for 45 minutes. Each participant completed at least 36 sessions, which were spread over a period of three months. This study was done in three phases:

1. Pre-intervention Phase: The participants were asked to fill all the questionnaires. Any query they had was clarified. An informal assessment was also done to ascertain their difficulties in different areas such as reading, writing, comprehension, spellings and so on.
2. Intervention Phase: The participants were helped with their academic difficulties, mainly in the areas of reading, writing and spellings. The components of SDT and NHA were employed during the sessions and they dictated how the teacher interacted with the participants.
3. Post-intervention Phase: the participants were once again asked to fill the questionnaires.

Results

First, the descriptive statistics for all the sub-scales were calculated for both pre-intervention and post-intervention phase. The group data was also analysed using non-parametric statistical tools because the sample for this study is quite small (7 participants) which may violate the assumptions of parametric tests such as normal distribution of the sample scores. Wilcoxon Matched-Pairs Sign Ranks Test was utilized to check for the impact of the intervention on students with LD.

The first three parts of the research question deal with the impact of the intervention, using SDT and NHA, on need for autonomy, need for competence and need for relatedness. The results of the Wilcoxon Matched Pairs Signed Ranks test showed a significant increase in the post-intervention scores for fulfillment of need for autonomy, competence and relatedness.

For need for autonomy, the post-intervention scores (Mdn = 35.00) were significantly higher than pre-intervention scores (Mdn = 31.00), z = -2.207, p = .027, r = -0.58. Similarly, for the need for competence, the post-intervention scores (Mdn = 32.00) were significantly higher than pre-intervention scores (Mdn =20.00), z = -2.371, p = .018, r = -0.63. The same trend was observed for need for relatedness, that is, the post-intervention scores (Mdn = 49.00) were significantly higher than pre-intervention scores (Mdn = 42.00), z = -2.379, p = .017, r = -0.63.

Academic motivation was measured using Self-Regulation Questionnaire-Academic. It had four sub-scales (External Regulation, Introjected Regulation, Identified Regulation, and Intrinsic Motivation). The former two sub-scales are extraneous forms of motivation, while the latter two are more intrinsic forms of motivation. For external regulation the post-intervention scores (Mdn = 11.00) were lower than the pre-intervention scores (Mdn = 13.00), z = -2.049, r = -0.55 . For introjected regulation too, the post-intervention scores (Mdn = 13.00) were lower than the pre-intervention scores (Mdn = 15.00), z = -2.041, r = -0.55. For identified regulation the post-intervention scores (Mdn = 9.00) were higher than pre-intervention scores (Mdn = 7.00), z = -2.428, r = -0.65. For intrinsic motivation too, the post-intervention scores (Mdn = 10.00) were higher than the pre-intervention scores (Mdn = 6.00), z = -2.047, r = -0.55.

Two other variables that were considered in this study are academic self-efficacy and well-being. For academic self-efficacy, the post-intervention scores (Mdn = 7.00) were significantly higher than pre-intervention scores (Mdn = 6.00), z = -2.333, r = -0.62 . However, there was no significant difference in the scores of subjective well-being.

Discussion and Implications

The current study's aim was to implement an intervention program for students with LD based on the tenets of SDT and NHA. Both the approaches were combined because of the parallels between the two. Through student teacher interaction both the approaches were used to provide a social context which supported the fulfillment of the basic psychological needs. Results showed a significant difference between pre and post measures of basic needs satisfaction, academic motivation (all four types of regulation viz. external regulation, introjected regulation, identified regulation and intrinsic motivation) and academic self-efficacy.

SDT hypothesizes that support for the satisfaction of the three needs (of autonomy, competence and relatedness) leads to an improvement in intrinsic motivation and integrated regulation (Deci et al., 1996). The results of our study support this hypothesis as the post-intervention scores for intrinsic motivation and integrated regulation were significantly higher than pre-intervention scores.

Evidence for the benefits of need support in the educational setting are numerous (such as Grolnick & Ryan, 1987; Benware & Deci, 1984; Deci, 1971). These studies account for the positive impacts that need supportive contextual factors can have on students. Although we did not look for other benefits that a need supportive environment can impart, we did observe an improvement in intrinsic motivation and identified regulation, along with a decrease in external regulation and introjected regulation (which are less self-determined forms of motivation). Therefore, it becomes imperative that attempts be made to incorporate techniques such as those employed in this study in educational settings in order to address self-regulation and motivational concerns of students with LD.

Apart from the techniques based on SDT and NHA that were used, self-disclosure is another element which was found to be relevant in this context. Self-disclosure is useful in a

counselling relationship (Kotler et al., 1994). However, the same can prove to be helpful in an educational setting too. It was used in the present study and it was observed that the participants became more comfortable with the researcher after such instances. It can build trust, closeness, and a feeling of connectedness among them, thereby fulfilling the need for relatedness.

Implications

The findings of this research suggest that the intervention based on SDT and NHA support the satisfaction of the basic psychological needs, enhance identified regulation, intrinsic motivation and academic self-efficacy of students with LD. Strategies and techniques as employed in the current study can prove to be very beneficial for instruction of students with LD. Findings of this study can be generalized to classroom instructions to substantially enhance the learning outcomes of students with LD. Furthermore, these strategies could pave the way to realize a more inclusive environment in schools. Since these are general strategies and the basic psychological needs are universal, need fulfillment of students of diverse needs can be addressed and enhanced.

Conclusion

The primary objective of this thesis had been to look at LD beyond the academic issues and gather a better understanding of the socio-emotional and motivational perspectives. From the findings, it is evident that students with LD studying in inclusive school are not faring as well as the other two groups on a number of variables which were considered in this study. Inclusive education is supposed to instill better acceptance of students with disabilities by their peers without disabilities. However, the results of the current study do not point in this direction, rather it brings to light that students with disabilities, specifically LD, are yet to be fully included in the educational milieu. Therefore, it can be suggested that inclusive education being

the current trend in education policy, needs to be evaluated and changes if required, should be implemented in order to make the schools the doorway to an inclusive society. Thus, instead of looking at inclusive education through rose colored glasses, it should come with a forewarning which states that inclusion by itself should not become a criteria for exclusion.

The crux of the intervention lay in the reaction of the adult dealing with a child with LD. Thus it implies that as adults working with students with LD, or any disability, our behavior towards them will play a significant role in deciding the course and outcome of the intervention. The greater the support that we can provide the students, the lesser will be the handicap they experience because of the disability. LD as a condition can affect the entire individual as shown by the results of the current thesis. In such a scenario, if adequate provisions are not provided to them, it would mean that they do not have equal access to education as the rest of the students. This again highlights the importance of interventions which focus on the non-academic issues associated with LD. Otherwise, it will be very difficult to achieve the goal of inclusive education.

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Chapter 1

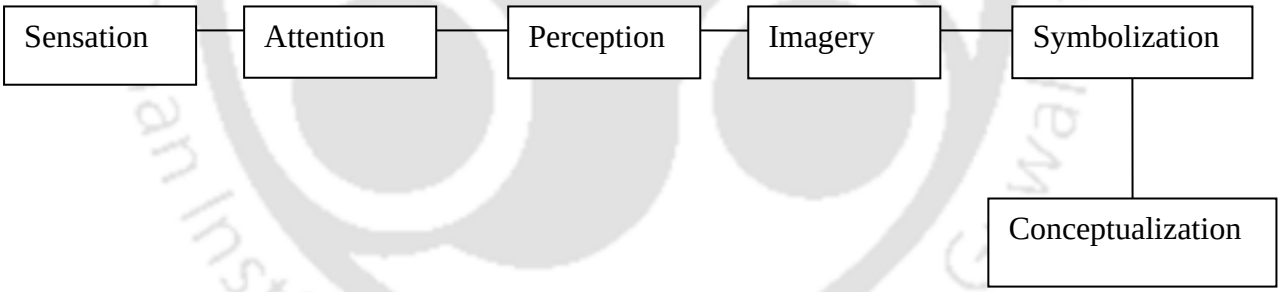
Introduction

Introduction

Students spend 15,000 hours of the first two decades of their lives in schools (Deci, Vallerand, Pelletier & Ryan, 1991). Thus, schools are bound to have a significant influence on them. Ideally, schooling is expected to instill in the students a genuine interest in learning and a sense of self-initiated involvement in education (Deci, Vallerand, Pelletier & Ryan, 1991). However, not all students do equally well in school. Some of them have academic difficulties in spite of their ability and intelligence. This invisible barrier that comes in the way of their learning is known as learning disability**.**

The Learning Process

Successful learning requires the integration of the processes of sensation, attention, perception, imagery, symbolization and conceptualization.



A breakdown or difficulty at any of these levels will have an impact on the child's information processing and consequently on learning leading to a Learning Disability/difficulty (Raj, 2010).

Learning disabilities (hence forth LD) is an umbrella term which includes different types of learning disabilities that have different manifestations. This term was proposed by Samuel Kirk in 1963 (Alex, 2013). Students with LD have intelligence in the average to above

average range but may have difficulty in specific academic areas, organizational skills, information processing, memory and social skills (Bender, 2004). It can be described as unexpected, significant difficulties in academic achievement and other areas related to learning without any other obvious disability (Ahmad, 2015). It cuts across all ages and socio-economic class (Raj, 2010). **While other researchers have used different terms to denote this particular issue, this thesis has made use of the term LD as an all-encompassing term and not looked into the specific academic area of difficulty.**

The main characteristics of LD involve academic difficulties in reading and mathematics and language problems (Wong et al., 2008). Other problems include social emotional problems (Margalit & Al Yagon, 2002), working memory problems (Swanson, Cooney & McNamara, 2004) and self-regulation problems (Harris, Reid & Graham, 2004). LD is a unique condition which affects the whole person- his social, emotional and cognitive dimensions (Wong et al., 2008). Therefore, this study is focused not only on the academic domain but also the social-emotional domain of students with LD.

The current research includes two separate empirical studies. The first study aims to investigate for the impact of inclusive education on students with LD, with reference to their peer relationships and other relevant variables. The second study deals with developing and testing an intervention program based on Self-Determination theory to target motivational concerns, for students with LD.

Inclusive education is about removing barriers to learning and development of all children (Booth & Ainscow, 2002). It is the biggest challenge faced by the educational world (Ainscow & Cesar, 2006). It is aimed at removing social exclusion which has resulted from the attitudes to different races, social class, ethnicity, religion, gender and ability (Ainscow & Cesar, 2006). The principle of inclusion has been gaining recognition rapidly in the last few decades and countries are supporting the schooling of children with disabilities in mainstream

settings (Sentenac et al., 2012). The last decade has seen a lot of work on the realization of inclusive education (Lindsay, 2007). Some studies reporting the educational outcomes of inclusive education have found slightly positive results (Lindsay, 2007). Other studies have looked into the social outcomes of inclusive education and reported mixed results (Karrin et al., 2012). Some studies have depicted positive social outcomes (Avramidis, 2010) and others have reported risks for students' social development (e.g., Locke et al., 2010).

Inclusive education in India is mostly concerned with students with disabilities (Singhal, 2008). Disability oriented inclusive education is about active participation from all students and not just enrolling them in a mainstream school (Nind, 2014). However, in India inclusive education is still at a nascent stage which requires more research (Bindal & Sharma, 2010). Hence, the first part of this proposed study will explore issues related to inclusive education and its impact on students with LD.

Self-Determination theory is a theory of motivation which is being increasingly used in various behavioral domains, including classroom setting (Niemiec & Ryan, 2009). One of the main premises of SDT is that human beings possess three independent, innate psychological needs namely, need for autonomy, need for competence and need for relatedness (Kartartzi & Vlachopoulos, 2011). According to this theory the satisfaction of these three needs leads to intrinsic motivation and well-being and is important for people to develop in healthy and optimal ways (Rogers & Tannock, 2013). This theory claims that the support of students' basic psychological needs plays an important role in their behavior and psychological adjustment (Haerens et al., 2013). In school settings students who experience more intrinsic motivation also reported higher levels of concentration, positive affect and perseverance in challenging tasks (Standage, Duda & Ntoumanis, 2005). For students with LD, motivation for academic tasks is low and their self-efficacy is fragile because of repeated failure and poor achievement (Wong et al., 2008). Low motivation and low self-efficacy will influence their engagement

with learning tasks (Wong et al., 2008). Providing support for the basic psychological needs satisfaction is a way to enhance students' learning and improve other important outcomes for students with LD. Hence the second study intends to develop an intervention based on SDT and investigate its impact on intrinsic academic motivation, academic self-efficacy and well-being of students with LD.

The Nurtured Heart Approach (NHA), developed by Howard Glasser as a part of his therapeutic service, lays down certain strategies that can be adopted by the adults to modify the disruptive behavior of children. The same strategies can be applied in an educational setting too (Hektner et. al, 2013). The strategies proposed by NHA urges the adults to alter the reactions to children so that it brings about changes in the behavior of the child too (Glasser & Block, 2011). It essentially trains the adults to focus on positive behavior rather than negative behavior and clearly lay down the limits to any kind of disruptive behavior. This approach and Self-Determination theory are similar in their basic underpinnings of motivating changes in behavior. Therefore, this approach was combined with SDT to further strengthen the intervention for the second study.

Inclusive education is for students of diverse needs. Strategies which promote the inclusion of marginalized groups can also improve outcomes for all learners (Ainscow, Booth & Dyson, 2004). According to Deci and Chandler (1986) one of the measures that can be adopted to prevent LD is to improve the whole educational setting. Such a macro approach would involve applying general educational principles to suit the needs of all students- students with LD and without LD (Deci & Chandler, 1986). To develop such an approach it is important to adopt a more holistic motivational perspective, such as SDT, which addresses the educational needs of students in general and of students with LD in particular (Deci & Chandler, 1986). Therefore, since SDT can address educational needs of students with diverse

needs and inclusive education is all about accepting students with diverse needs, both the areas together can have important implications in the educational settings.

Research Questions

Based on the concerns raised above, the following research questions have been developed for this study:

1. What impact has inclusive education had on students with LD?
    A. What is the impact of inclusive education on peer relationships of students with LD with regard to the number of friends that they have?
    B. What is the impact of inclusive education on peer relationships of students with LD with regard to the age of the friends?
    C. What is the impact of inclusive education on the friendship quality of students with LD?
    D. What is the level of intrinsic academic motivation, academic self-efficacy and well-being of students with LD as compared to students without LD?
2. What is the attitude of the regular classroom teachers towards including students with LD in their classrooms?
3. What impact does the proposed intervention strategy based on self-determination theory have on students with LD?
        A) How does the strategies based on SDT (such as providing relevance for the task, providing choice and avoidance of control) and NHA affect need for autonomy?
        B) How does the strategies based on SDT (such as providing clarity of expectations, optimal challenges and positive feedback) and NHA affect need for competence?

C) How does the strategies based on SDT (such as providing empathy, affection, dependability and attunement) and NHA affect need for relatedness?

D) What is the impact of the strategies based on SDT and NHA on academic motivation, academic self-efficacy and subjective well-being of students with LD?

Chapter 2

Review of Literature

Learning Disability

Learning disabilities/difficulties (LD) is an umbrella term which includes different types of learning disabilities that have different manifestations. This term was proposed by Samuel Kirk in 1963 (Alex, 2013). Students with LD have intelligence in the average to above average range but may have difficulty in specific academic areas, organizational skills, information processing, memory and social skills (Bender, 2004). It can be described as unexpected, significant difficulties in academic achievement and other areas related to learning without any other obvious disability (Ahmad, 2015).

According to National Centre for Learning Disabilities (Cortelia & Horowitz, 2014), LD is accompanied by a number of weaknesses in a number of areas of information processing which can manifest as different problems in learning and performance. It is very common to find a co-morbid disorder along with LD and it is difficult to find LD alone (Jena, 2013). Hence, the term Learning Disabilities in the present study has been modified to Learning Disabilities/difficulties to reflect this aspect. **Further the term LD in the present thesis has been used to denote different terms used by different researchers such as Specific Learning Disability (SLD/ SpLD), Reading Disorder and so on. The review of literature includes studies which have denoted this disability with different terms such as the ones mentioned earlier and have been all clustered under the overarching term LD.**

The definition of LD given by National Joint Committee on Learning Disabilities (as cited in Bhandari & Goyal, 2004, p.166) states that it is a:

" a general term that refers to a heterogeneous group of disorders manifested by significant difficulty in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities. These disorders are intrinsic to the individual, presumed to be due to central nervous system dysfunction, and may occur across the life span. Problems in self-regulatory behavior, social perception and social interaction may exist with learning disabilities

but do not by themselves constitute a learning disability. Although learning disabilities may occur concomitantly with other handicapping conditions (for example, sensory impairment, mental retardation, social and emotional disturbance) or with extrinsic influences (such as cultural differences, insufficient or inappropriate instruction), they are not the result of these conditions or influences."

In India, the federal definition by the U.S. Government in Public Law 94-142 of Learning Disabilities has been adopted. It defines LD as the following:

"a disorder in 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, spell or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing or motor handicaps, or mental retardation, emotional disturbance or environmental, cultural or economic disadvantages." *(Federal Register, 1977,* p. 65083) (Karanth, 2002).

Students with LD can have problem in any of the following seven specific areas (Thapa, 2008):

1. Receptive language (listening),
2. Expressive language (speaking),
3. Basic reading skills,
4. Reading comprehension,
5. Written expression,
6. Mathematics calculation and
7. Mathematical reasoning.

Students with LD manifest problems in the way they take in information, the way they process it, remembering it or communicating it. These difficulties further lead to problems in written or spoken language, co-ordination, self-control or attention issues. Other behavioral problems include impulsiveness, poor attention span and difficulty in social situations (Verma, 2008).

Yadav and Agarwal (2008) have listed some common characteristics of students with LD:

- Hyperactivity,
- Perceptual-motor impairments,
- Emotional instability,
- General co-ordination deficit,
- Disorders of attention,
- Impulsivity,
- Disorders of memory and thinking,
- Specific learning disabilities,
- Disorders of speech and hearing,
- Equivocal neurological signs.

The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM V) (APA, 2013) lays down 4 criteria for the diagnosis of LD, as summarised below:

A. A persistent difficulty learning academic skills for at least 6 months despite intervention targeting the area(s) of difficulty. Many schools use a Response To Intervention (RTI) model of academic skill assessment and progress monitoring to determine the effectiveness of interventions. The areas of documented academic skill difficulties include:

1. Word decoding and word reading fluency

2. Reading comprehension
3. Spelling
4. Writing difficulties such as grammar, punctuation, organization, and clarity
5. Number sense, fact and calculation
6. Mathematical reasoning

B. The affected academic skills are substantially below expectations given the individual's age and result in impaired functioning in school, at work and in activities of daily living.

C. The learning difficulties develop during school age years, however it is not manifest until the demands for the specific academic areas exceed the individual's limited capacities.

D. The academic and learning difficulties occur in the absence of:

1. Intellectual Disabilities
2. Visual or hearing impairments
3. Mental disorders (e.g. depression, anxiety, etc.)
4. Neurological disorders
5. Psycho-social difficulty
6. Language differences
7. Lack of access to adequate instruction.

Types of LD

According to National Centre for Learning Disabilities, situated at New York, (Cortiella and Horowitz, 2014), the following are the types of LD commonly found:

1. Dyslexia: It refers to learning disabilities in reading. The characteristics of this type include:
    - difficulty with phonemic awareness (the ability to notice, think about and work with individual sounds in words).
    - difficulty in phonological processing (detecting and discriminating differences in phonemes or speech sounds).
    - difficulties with word decoding, fluency, rate of reading, rhyming, spelling, vocabulary, comprehension and written expression.

Dyslexia is the most prevalent and well-recognized of the subtypes of specific learning disabilities.

2. Dyscalculia: It refers to learning disabilities in mathematics. Its characteristics include the following:
    - difficulty with counting, learning number facts and doing math calculations.
    - difficulty with measurement, telling time, counting money and estimating number quantities.
    - trouble with mental math and problem-solving strategies.

3. Dysgraphia: It refers to learning disabilities in writing. It encompasses difficulties in the physical act of writing as well as written expression. Its characteristics involve:
    - tight, awkward pencil grip and body position.
    - tiring quickly while writing, and avoiding writing or drawing tasks.
    - trouble forming letter shapes as well as inconsistent spacing between letters or words.
    - difficulty writing or drawing on a line or within margins.

- trouble organizing thoughts on paper.
- trouble keeping track of thoughts already written down.
- difficulty with syntax structure and grammar.
- large gap between written ideas and understanding demonstrated through speech.

Prevalence of LD

According to National Centre for Learning Disabilities (Cortiella and Horowitz, 2014) LD is the largest category of students receiving special education services. Approximately 5% of total students enrolled in public schools have been identified with LD. Of all the students receiving special education services, 42% students have LD. The number of students identified with LD has declined by 18 percent between 2002 and 2011. Male students comprised of two-thirds of all the students with LD.

According to John et al. (2013) data on the prevalence of LD in India is sparse. Suresh and Sebastian (2003) have stated that there have been limited research in this area and no data can be quoted in the Indian setting. However, they have reported a large incidence of learning difficulties in the rural areas of Kerela. A study by Yadav and Agarwal (2008) in the rural government primary schools of Allahabad found a prevalence of 2.25%, out of which 2.66% were males and 1.71% were females. Another study by Arun et al., (2013) in Chandigarh, found that identification of this disorder does not happen till later age that its prevalence is 1.58% among students drawn from classes VII to XII. Ramaa and Gowramma (2002) reported that that the percentage of students with dyscalculia was found to be 5.98% and 5.54% in two of their studies respectively. Kuriyan and James (2018) reviewed the studies on LD in India and found that various studies have reported a prevalence rate ranging from 1 to 19%.

LD and Academic Characteristics

Students with LD experience difficulties in specific scholastic areas like reading, writing and/or mathematics (Bender, 2004) which compromises their academic achievement (Lackaye & Margalit, 2006). A study by Kirby et al. (2008) reported that students with LD lack strategies required to succeed in academic tasks. Students with LD also have memory (both short term and long term) and information processing deficits which lead to difficulties in different academic areas (Geary, 2004). They also tend to recall more irrelevant data when presented with both relevant and irrelevant data, than their peers without LD (Geary, 2004). They experience greater difficulty with verbal memory than non-verbal memory (O'Shaughnessy & Swanson, 1998). Students with reading disabilities have greater difficulty in verbal memory while students with mathematical difficulties have greater difficulty with visuo-spatial memory (Schuchardt et al., 2008).

The difficulties faced by students with LD also affect the way they are perceived. They are perceived as putting in less effort compared to the students without LD in tasks where they face difficulties (Meltzer et al., 2004). When their academic achievement was lower than students without disabilities, their teachers rated them as exerting less amount of effort and when they achieved equally in academics they were rated to be exerting the same amount of effort as their peers without disabilities (Meltzer et al., 2004).

Students with LD also encounter negative experiences in schools. They reported being punished for not completing their work or failing to learn the given content and reprimanded for not trying harder in school (Reis, Neu & McGuire, 1997).

Research on LD in India

According to Karanth (2003) the field of LD in India has gained importance only from the 1990s. Although research in this area has been limited, greater numbers of students are being identified with LD which has resulted in a greater demand for services (Thapa, 2008). In India, the work in the field of LD has focused more on fundamental or basic research which have tried to describe the conditions, causes and correlates of LD (Jena, 2013). However, students with LD experience more social, emotional and motivational problems than students without LD (Ayres, Cooley & Dunn, 1990). These issues remain neglected and have not received the attention they deserve. There is a dearth of applied research in the field of LD (Jena, 2013). The issues which require further understanding in the Indian context include the definition of LD, procedures for assessment and identification, understanding LD across the life span, prevention and intervention (Thapa, 2008).

Rozario, Kapur and Rao (1994) developed a 25 session remedial programme for children 9-11 years old with LD. They reported significant improvement in the students as a result of the programme. Srikanth and Karanth (2003) developed a remedial programme based on the Aston Teaching Programme. This programme focused on auditory visual channel deficits, specific spelling rules and cues, training in comprehension skills, oral expression, written expression and visuo-motor perceptual aspects. This programme addressed both reading and spoken language issues. Pagedar and Sarnath (2008) developed an intervention based on PREP for primary school students with reading disorder. They reported that students who received this programme showed significant improvement in the post-intervention tests. Sadasivan (2009) administered two intervention programmes- phonological awareness intervention and neuropsychological intervention in two groups of children with reading disability, of 10-13 years age group. After the intervention both groups showed improvements in reading scores. Further these scores were maintained over time.

Bhasi, Rao and Oomen in 2003 developed a neuropsychological remedial training program to target attention, visual and verbal memory and content based arithmetic skills for students identified with Specific Learning Disorder for Arithmetic (as cited in John et al., 2013). The treatment group which received the neuropsychological remedial training showed improvements in arithmetic compared to the control group. Kohli et al. (2005) found that children with SLD have deficits in memory, executive functions and perceptuo-motor tasks. Kohli et al., (2006) concluded that children with LD who have difficulties in both reading and writing, have greater impairments in speech and language, intellectual functions and mental balance that children with LD who have difficulty either only in reading or only in writing. Ramaa, Miles and Lalithamma (1993) demonstrated that Kannada (a language of southern part of India) speaking students with Dyslexia did not show any difference in functional skill from European language speaking students with Dyslexia. They deduced that no form of Dyslexia exist which is specific to any language/ writing system or any geographical location. Gowramma and Ramaa (2002) developed an intervention that specifically targeted to improve multiplication skills in children with Dyscalculia. They reported an incidence rate of 6% for dyscalculia in that study. The intervention consisted of 22 lessons which ranged from introducing the terms and concepts of multiplication to multiplying a 3 digit number by multiples of 100. The intervention was carried out daily for one hour for 15 sessions and the progress was continuously monitored. A pre-test post-test design was followed with 8 participants. All the participants showed improvement after the intervention.

Some researchers have also looked into the psychosocial aspects of LD. Mukerjee et al., (1995) inquired into the anxiety and self-esteem of children with LD. Children with LD were found to have lower parental, academic and general self-esteem as compared to children without LD. They also had significantly higher state anxiety than children without LD. However, no difference was observed in trait anxiety. Bhola et al., (2000) also found similar

results. In addition to that the child's perception of LD is positively correlated to academic, social, general and total self-esteem but not parental self-

Government at Secondary esteem. Lall et al., (1997) concluded that although children with LD perceived their peer relationships as cordial, they teachers rated them as less socially competent, especially in dimensions of academics, popularity, affiliation and sportsmanship qualities. Hirisave and Shanti (2002) highlighted the need for management of behavioral issues associated with LD as their study revealed that students with LD manifested a greater number of internalizing, externalizing and learning problems compared to students without LD.

Researches in India have explored other issues too related to LD. Parents of children with LD have developed mild anxiety around issues such child's school performance, child's future, child's behavior, visits to clinics for remedial and rehabilitation purposes (Karande et al., 2009). Interventions for parents also seem to have a positive impact on them by improving their knowledge on the meaning of the term of this disorder, the importance, frequency, duration of remedial education and that this is a lifelong disorder (Karande et al., 2007a). Describing the psychoeducational profile of children with LD and co-occurring ADHD, Karande et al. (2007b) stated that these children have difficulties in writing, mathematics, reading, inattentiveness, hyperactivity, poor school performance, aggressive and withdrawn behavior and that 30% of their sample has already experienced retention in class. Another study by Karande et al. (2005) found that there were no difference in the cognitive abilities of children with LD having average, bright-normal and superior non-verbal intelligence, as measured by Cognitive Functions Test in four areas of information viz. figural, symbolic, semantic and behavioral. However, when the same areas measured by Cognitive Functions Test were compared with children without LD, children with LD scored significantly lower in all areas (Karande et al., 2005). Kulkarni et al. (2006) compared the educational performance of students with LD who had availed provisions offered by the Maharashtra School Certificate board

examination to their last examination before the diagnosis of LD. They found a significant improvement in their educational performance as was evident from the marks they obtained. This study highlighted the importance of educational provisions that students with LD can opt for. A survey by Saravanabhavan and Saravanabhavan (2010) found that pre-service teachers have lowest levels of knowledge about LD, while teachers working in regular schools had the highest knowledge regarding LD. Karande et al. (2008) reported that the Health Related Quality of Life (HRQL) of children with LD was compromised for both psychosocial and physical factors of health. The HRQL is further impacted by the presence of co-occurring ADHD as revealed by another study by Karande et al. (2008). They found that children diagnosed with LD and co-occurring ADHD had poorer overall psychosocial functioning assessed by parent-reported Child Health Questionnaire. Thakkar et al. (2015) found that children newly diagnosed with LD had a higher risk of being clinically anxious. This did not depend on the gender, presence of co-morbid ADHD or the type of curriculum the children attended.

LD and Peer Relationships

The social difficulties associated with LD were brought to the foreground by the momentous study by Bryan in 1974 and 1976. These studies highlighted the social unpopularity of children with LD. However, this area had been overshadowed by the overwhelming research on areas such as early intervention, response to intervention and the like (Wong et al., 2008). Using sociometric technique, Bryan (1974) found that students with LD, especially white and female were lower on social attraction and higher on social rejection compared to their peers. Similar findings of lower popularity were reported by Siperstein et al. (1978). In another study Bryan et al. (1981) reported that students with LD were more likely to agree with their peers choice and were less persuasive about their own choices. They were observed to play a submissive role in small group interaction among peers. Bruininks in 1978 studied the actual and perceived

peer status of students with LD in mainstream education program. The findings of the study showed that these students were less social accepted by their peers. However, they themselves were less accurate in assessing their own status in a regular classroom group. A factor that influences the low acceptance of students with LD may be their deficits in social skills. In a study by Gresham and Reschly (1986), comparisons were made between students with and without LD on teachers, parents and peers ratings of social skills. The results indicated that students with LD scored lower on all the three ratings of social skills and were also deemed to be less socially accepted. Weiner et al. (1990) also reported that students with LD were more rejected and neglected compared with students without LD. They were also perceived to be less likely as a leader and cooperative. Haager and Vaughn (1995) looked into various factors of social competence among three groups of students: students with LD, low achievement and average to high achievement students. On teachers' ratings, students with LD and low achievement were found to show poorer social skills and more behavioral problems. Peer ratings demonstrated that students with LD and low achievement were less liked by their peers compared to average to high achievement students and students with LD had the highest amount of peer rejection.

Klinger et al. in 1998 compared the academic outcomes of students with and without LD placed together in inclusive classrooms. The teachers were trained in instructional strategies which were recognized to be beneficial for students with a wide range of achievement level. They found that while most of the students with LD showed improvements in academic outcomes, some of them did not show any developments. However, students who were identified as poor readers did not exhibit many gains which showed that the instructional strategies were not sufficient for them. Comparing the stability of peer status of students with and without LD using both positive and negative nomination sociogram and Social Behaviour Nomination Scale, Kuhne and Wiener (2000) found that the score on Social Preference of

students with LD decreased over time. They were also viewed as more dependent and they students with LD who had average social status in the beginning were termed as neglected or rejected at a later point in time. Wiener and Schneider (2002) looked at various factors influencing friendship patterns and made a comparison between students with and without LD. Their results stated that students with LD had more younger friends, more number of friends with learning issues and less stable relationships compared to students without LD. Their friendship quality was also more affected in terms of more conflict, lower validation and more troubles with relationship repairs. A study by Wiener and Tardiff (2004) analyzed the social functioning of students with LD placed in four different educational settings: in class support, resource room, inclusion class and self-contained special education class. The students in more inclusive classrooms had better social and emotional functioning in terms of greater acceptance by peers, less problem behavior, better self-perceptions and a more satisfying relationship with their school best friend. Estell et al. (2008) conducted a longitudinal study of around three years and found that the social status of students with LD continued to be lower that students without LD, indicating that in spite of long-term inclusion the social standing of students did not improve over the years. In a similar longitudinal study Tur-Kaspa et al. (1994) found that over the period of one year the number of reciprocal friendship tend to decrease for students with LD, while it tends to increase for students without LD. On the other hand, the number of reciprocal rejection tends to increase for students with LD, while it tends to decrease for students without LD. Another study by Estell et al. (2009) found that students with LD tend to have same number of reciprocated best friends, more likely to have friends who also had LD and had friendships which lasted for shorter period of time compared to other students. Using hierarchical multiple regression analysis Margalit et al. (1999) reported that loneliness was successfully predicted by reciprocal rejection and conception of friendship quality. Students

with LD who had at least one reciprocal rejection had felt lonelier compared to students without LD.

The above findings on peer relationships bring out the non-academic issues associated with LD. It is very easy to overlook these issues since the academic difficulties overshadow any other problems the students with LD might be facing. And these especially have not been much explored in India. Carrying out research in the field of LD in India is quite difficult because of the presence of different languages and diverse cultures (Ramaa, 2000). Language is an integral part of the education curriculum and the presence of so many different languages restricts the use of any one intervention to all the different parts of the country. However, factors such as peer relationships, motivation are common to all. Thus a study which takes into account these factors is very necessary because of its far-reaching applicability and use. Further, as can be seen interventions on LD in India have focused on academic deficits and other studies have focused on other cognitive aspects. According to a report from the Rehabilitation Council of India, the field of LD has originated recently in India and is comparable to the western literature of half a century ago. As mentioned earlier, students with LD experience difficulties in academic domain and also other behavioral issues. Major studies have been successful in addressing reading deficits and evidence based studies on other domains are lacking (Alex, 2013). Therefore, an intervention programme which addresses motivational issues in children with LD is needed because motivational issues can exacerbate the difficulties resulting from LD. Hence the present study has been proposed to further our understanding of LD from the perspective of Self-Determination Theory.

Self-Determination Theory

Self-Determination theory (SDT) is concerned with questions like why people act, how different forms of motivation can lead to different outcomes and what kind of social contextual conditions aid or hinder optimal functioning and well-being via psychological needs (Vieling, Standage & Treasure, 2007).

SDT upholds the organismic nature of human beings. This theory posits that human beings have a natural tendency towards growth and development. They seek challenges in the environment to fulfill their potentials and capacities. This theory suggests that rather than being passive onlookers, human beings tend to engage in interesting tasks, involve their capabilities and also assert themselves as a part of a social group (Deci & Ryan, 2000).

This organismic nature facilitates the integration of knowledge and personality. Human beings integrate their experiences into their sense of self. This process leads to the experience of a more articulate sense of self (Ryan & Deci, 2000). Thus, the primary assumption of SDT is that people have a natural tendency to develop a unified sense of self by integrating different fragments of their psyche and making interconnections between them and also with that of others.

This theory further adds that there are specific social contextual factors which can aid this process of natural growth. Also present are some social contextual factors which thwart this process. When the social contextual factors facilitate this process, it results in an individual with an integrated personality. On the other hand, when these factors disrupt the growth process, it results in behaviors denoting the darker side of human nature. Thus, SDT enables the prediction of a range of human personalities, from an elaborately unified sense of self to a fragmented, passive sense of self. Correspondingly, this theory also predicts a range of human behavior, varying from fully functioning to maladaptive, disruptive behavior (Ryan & Deci, 2000).

Basic Psychological Needs

To explain the social contexts which facilitate versus thwart the natural growth tendencies, SDT predicts three basic needs- need for autonomy, need for competence and need for relatedness. Deci & Ryan (2000, p. 229) define needs as "innate psychological nutriments that are essential for ongoing psychological growth, integrity and well being". Thus, these needs from the basis or medium through which the social environment can either support the natural growth tendency or can thwart it. Social contexts which provide the satisfaction of these needs are seen as promoting healthy functioning and growth. Social contexts which do not aid the satisfaction of these needs are seen as leading to maladaptive outcomes which can include personality development, personal experiences in situations and the quality of behavior (Ryan & Deci, 2000). These needs specify what is important in life. They are universal and innate. They are not acquired over the course of life but are present throughout life. Thus they are expected to be seen across cultures and developmental periods.

The organismic tendency requires support in terms of fulfillment of the three basic needs, to be realized. If the needs are fulfilled the person's organismic tendency leads the way to healthy psychological growth, intrinsic motivation, integration of external regulation. If the organismic tendency is blocked by non-fulfillment of these three needs it leads to the "capacity to compartmentalize rather than integrate psychological structures, the tendency to withdraw concern for the others and focus on oneself, or in more extreme cases, to engage in psychological withdrawal or anti social activities as compensatory motives for unfulfilled needs" (Deci & Ryan, 2000, p. 229). Satisfaction of all the three needs is vital for effective functioning, psychological health and well-being. Neglect of any one or more can have significant negative consequences. These three needs are also essential for understanding the what (i.e. content) and why (i.e. process) of goal pursuits (Deci & Ryan, 2000).

Within SDT there are three basic needs, namely those for autonomy, competence and relatedness.

Autonomy, as defined by Deci and Ryan (1985), occurs when people feel they are the cause of their behavior. It gives them a sense of whole-hearted choice. Autonomy, however, is not the same as independence. It is an internal acceptance of and engagement with the motivated behaviour. Autonomy support involves taking the perspective of the other individual, providing choice and providing a meaningful rationale when choice cannot be given (Filak & Sheldon, 2003).

Competence is defined as feeling effective in one's behaviour. This need pushes people to seek optimal challenges and look for opportunities to sustain and enhance one's skills and capacities (Deci & Ryan, 2002). This need is very similar to self-efficacy and supporting it means conveying confidence in the person's ability to overcome challenges and offering clear and relevant feedback (Filak & Sheldon, 2003).

Relatedness refers to feeling connected to others and having a sense of belongingness to other individuals as well as one's community (Ryan, 1995). In the case of interpersonal relationships, relatedness means providing acceptance, respect and a feeling of caring and mutuality.

According to SDT, these three needs when satisfied, promote psychological well-being (Reis et al., 2000) and enable optimal functioning and performance. In contrast, when an individual's environment or personality style does not afford these kinds of experiences, the person fails to thrive. Also, these needs are additive: an individual is best off when all three are present and worst off when none are present.

Motivation has been an important concept in the field of psychology with a great amount of work done in this field. The result has been understanding motivation from various perspectives. Psychologists who have studies motivation have mostly explained it in terms of

instincts (the Freudian approach) or in terms of responses to stimuli (the behaviorist approach). A lot of research based on the behaviorist approach has shown the various ways in which the provision of rewards could condition human behavior over time.

SDT and Motivation

Self- Determination Theory (SDT) represents another point of view to understand motivation. It distinguishes between behaviors that individuals perform freely and those that they pursue for separable contingencies.

Sheldon et al. (2003) define motivation as a psychological forces which propels a person towards a particular target. SDT not only deals with the quantity of motivation but also the quality of motivation. People vary not only in the amount of motivation but also the orientation of motivation (Ryan & Deci, 2000).

SDT (Deci & Ryan, 1985) distinguishes between intrinsic motivation and extrinsic motivation. Intrinsically motivated behaviors are performed out of interest and thus require no "reward" other than the spontaneous experience of interest and enjoyment that accompanies them (Deci, 1992). When an activity is done for no external contingencies but for the inherent satisfaction and joy, it is said to be intrinsically motivated. This kind of motivation is autonomous and people act out of choice. A defining characteristic of intrinsic motivation is internal perceived locus of causality (deCharms, 1968 as cited in Niemiec and Ryan, 2009). Having an internal perceived locus of causality means that the behavior originates from the actor himself/herself (Ryan & Connell, 1989). They feel a sense of responsibility and control over themselves and their behavior.

SDT and Academic Learning

A number of studies have found that intrinsic motivation is associated with better learning, performance and well-being (e.g. Benware & Deci,1984; Deci, Schwartz, Sheinman & Ryan, 1981; Grolnick & Ryan,1987; Valas & Sovik, 1993). Gottfried (1985, 1990) found that intrinsic motivation for subjects like mathematics and reading had positive correlation with achievement. Similar results were also found by Lloyd and Barenblatt (1984) and Haywood and Burke (1977). Vallerand et al. in 1989 (as mentioned in Deci et al., 1991) found that students who experienced intrinsic motivation in the classroom experienced greater enjoyment of their school work, more positive emotion in the classroom and more satisfaction with their school as compared to student who showed more controlled form of motivation. Further, a study by Deci, Schwartz, Sheinman and Ryan (1981) found a positive correlation between intrinsic motivation and self-esteem. Thus, it is clear from the above mentioned studies that intrinsic motivation is associated with a number of positive educational outcomes. However, what further need to be studied is whether these results hold true for students with learning disabilities also.

SDT also specify the factors which can facilitate versus undermine intrinsic motivation. Social factors (e.g. rewards, communication and feedback) which bring about a feeling of competence during an action can enhance intrinsic motivation. This is because it satisfies the need for competence. However, it has to be accompanied by a sense of autonomy or the satisfaction of the need for autonomy. Several studies have shown the benefits of autonomy support in enhancing intrinsic motivation. A number of studies (such as Deci, Nezlek & Sheinman, 1981; Ryan & Grolnick, 1986) have shown that autonomy supportive teachers bring about in their students greater intrinsic motivation, curiosity and the desire for challenge. Children who are more controlled learn less well (such as Benware & Deci,1984; Grolnick & Ryan,1987). Satisfaction of the need for competence in the form of positive feedback has also

been shown to improve intrinsic motivation (such as Harackiewicz & Larson, 1986; Vallerand, 1983). Intrinsic motivation can be further enhanced by a sense of secure relatedness. Ryan and Grolnick (1986) showed that students experienced greater levels of intrinsic motivation when they perceived their teachers as more warm and caring.

Intrinsic motivation is a pervasive and important form of motivation. People exhibit the most effective function state when they are dynamic, inquisitive and lively individuals with a willingness to learn and explore and they do not require external rewards to do so (Ryan & Deci, 2000). Also it is important to note that to facilitate intrinsic motivation, satisfaction of the basic psychological needs (of autonomy, competence and relatedness) is of utmost importance.

Intrinsic motivation may not always be present in an individual while performing all activities. With age, the freedom to be intrinsically motivated becomes more reduced because a person is faced with a variety of social roles, obligations and responsibilities to act in certain socially acceptable ways. Especially in schools, it seems that intrinsic motivation is reduced with each passing grade (Ryan & Deci, 2000).

Apart from intrinsic motivation, SDT also talks about extrinsic motivation and its different kinds based on the degree to which they are autonomous. Extrinsic motivation is demonstrated whenever an activity is done to attain some separable outcome. Such an activity is done for its instrumental value. SDT suggests that although intrinsically motivated behaviors are by definition self-determined, extrinsically motivated behaviors can vary in their degree of self-determination. Extrinsically motivated behaviors are considered self-determined to the extent that they are fully accepted by one's sense of self --in other words, to the extent that they have an internal perceived locus of causality. In contrast, they are considered non-self-determined to the extent that they are pressured by an external contingency. Behavior regulations and values can be self-determined by fostering internalization and integration.

Internalization is the process by which people accept responsibility for the regulation of their behavior. If supportive conditions are present, extrinsic or more controlled motivation can be internalized to more self-determined motivation (Sheldon, Williams & Joiner, 2003). Integration is the process by which individuals convert the regulation to a form that it stems from their sense of self (Ryan & Deci, 2000). Arranged in a continuum describing their degree of self-determination, extrinsic motivation ranges from amotivation to integration. Ryan and Deci (2000), describe them as follows-

The least self-determined of them is *amotivation*, which is a state lacking an intention to act. It can result when a person either does not value the activity or does not feel competent or believes it will lead to an unfavorable outcome.

External regulation describes behaviors that are regulated by contingencies overtly external to the individual, like the promise of a reward or the threat of a punishment. An example would be a child who tries hard to do well on an assignment to get a gold star from the teacher. Although this behavior would be intentional, it is dependent on an external contingency and is thus said to be controlled by that contingency rather than being self-determined. Such actions have an external locus of causality.

Introjected regulation refers to behaviors that are motivated by internal pressures such as self-esteem-relevant contingencies. It is this type of regulation that is present when one behaves because one thinks one *should* or because one would feel guilty if one did not. Such actions are done to avoid guilt or anxiety. They are accompanied by a sense of pressure and are not accepted fully as a part of self. They have an external locus of causality. An example of introjected regulation would be a student who crams for an exam because she believes she has to do very well on it to think of herself as a good person.

Identified regulation occurs when a behavior or regulation is adopted by one's self as personally important. Here people would not behave simply because they feel they should, but

rather because of the personal importance of the behavior. This results when they have identified with the underlying value of the activity and accepted its regulation as their own. An example of an identified regulatory process might be students who prepare very hard for the college entrance examination because going to college is personally important to them.

Integrated regulation is the most autonomous or self-determined form of motivation. It occurs when the behavioral regulation are fully incorporated into a sense of self. A behavior is integrated when the reason for it are brought in congruence with one's values and needs. However, it is still extrinsic because the behavior is done to gain some outcome that is external to the behavior.

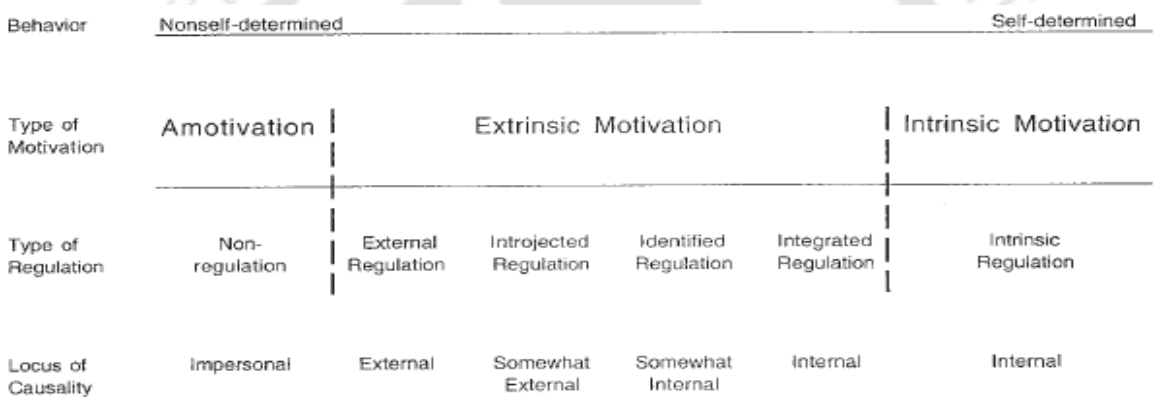


Figure 1. Different types of motivation according to SDT. Adapted from "The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior", by E. L. Deci and R. M. Ryan, 2000, *Psychological Inquiry, 11*(4), 237. Copyright [2000] by Lawrence Erlbaum Associates, Inc.

Deci et al. (1991) have reported that greater internalization of extrinsic behavior into more self-determined behavior has a number of benefits such as greater engagement, better performance, less dropping out, higher quality learning and greater psychological well-being .

Apart from being interested people engage in actions and behaviors for some reward or external contingencies. Such acts are extrinsically motivated. However, autonomous

regulation of such extrinsically motivated behaviors is also possible. People are willing to engage in behavior not inherently interesting because it is esteemed by someone significant, whether it is family, or friends or the community at large to which they experience a sense of belongingness. In other words, satisfaction of the need for relatedness can catalyze internalization of external regulation. In a study by Ryan, Stiller & Lynch (1994) relatedness to teachers was found to be associated with greater internalization of school related behaviors. Internalization is further aided by a feeling of effective function or the belief of having the capacities and skills necessary to complete an activity. Perceived competence can foster internalization. For a behavior to be fully self-determined, satisfaction of the need for autonomy is equally important. In support of these ideas Grolnick & Ryan (1989) found that children whose parents were more relatedness and autonomy supportive exhibited greater internalization and integration of school related values. Also, in a longitudinal study by Williams & Deci (1996) greater internalization was associated with competence and autonomy support.

Thus, it can be observed that there is ample support showing that both intrinsic motivation and greater internalization of externally regulated behavior are associated with more favorable academic outcomes. Also both these processes are facilitated by the satisfaction of the three psychological needs of autonomy, competence and relatedness. As proposed by SDT satisfaction of the basic psychological needs leads to self-determined behavior, experience of intrinsic motivation and also internalization of external regulation of behaviors. Therefore promoting an environment which allows for the satisfaction of these needs is important to lead to better academic outcomes.

Self-determination has been proposed to be an important skill set for students with LD since compared to students without LD, students with LD face more social, emotional and motivational difficulties (Ayres, Cooley & Dunn, 1990). Students with LD experience frequent

failure at school. Their learning difficulties make it difficult for them to cope with the pressure of studies and they lag behind. A number of studies have found that students with LD have lower self-determination compared to students without LD (such as Raskind et al., 1999; Mithaug, Campeau & Wolman, 2003; Shogren et al., 2006; Yailagh et al., 2014). Another study by Grolnick and Ryan (1990) found that children with LD were less autonomous and perceived themselves as less competent than matched IQ group and a randomly selected group. They were higher in perceived control by powerful adults and perceived success as controlled by others, exhibiting an external locus of causality. Teachers also rated them as less competent and having more learning problems as compared to others. Teachers provided them with more control and were perceived as less motivated.

In the light of the findings stated above it can now be ascertained that students with LD have low levels of self-determination. Also, self-determination and intrinsic motivation are important for academic achievement and learning. Therefore, these two constructs are very important in educational settings. Further, self-determination and intrinsic motivation are facilitated by the satisfaction of the needs of autonomy, competence and relatedness. Therefore, it is important to check whether these principles promote favorable outcomes for students with LD as they have been found to do in regular education students. Studies on self-determination of students with LD have not focused on developing strategies to improve their level of self-determination. Hence, it is felt that it is required to develop and seek ways to enhance this crucial element in students with LD.

Nurtured Heart Approach

Nurtured Heart Approach (NHA) was developed by Howard Glasser to help parents understand how to manage the disruptive behaviors of children who have been diagnosed with some form of behavioral disorder (like Attention Deficit Hyperactivity Disorder (ADHD), or Conduct

disorder or Oppositional Defiant Disorder) (Hektner et.al, 2013). According to Glasser this approach is about bringing a transformation in the adult which ultimately transforms the behavior of the child (Glasser & Block, 2011).

NHA was initially developed to target the clinical population and as a parent training program. However, it has been extended to educational setting (Hektner et. al, 2013), wherein the teachers are trained to use the techniques to deal with the behavioral issues within the classroom settings. The family and school are the two major factors in shaping a child's behavior and personality. NHA encompasses both these social environments. Parents and teachers are taught to energize and nurture the positive attributes of the children as a means to bring about positive behavioral changes (Ahmann, 2014). Conventional modes of parenting and teaching often fail to work with challenging children. In such approaches, undesirable behaviors are followed by consequences and reactions which are highly energized. The problematic behavior garners a lot of attention, while positive behaviors are met with generic reactions and lesser attention. This may, in turn, confuse the child as they observe that the undesirable behaviors are getting them a lot of energy and attention from the most sought after relationships (either with parents at home or with the teachers at school) and little encouragement when making successful choices. NHA urges parents and teachers to reverse this order by "limiting the amount of attention given to negative or undesirable behaviors while noticing and acknowledging even small positive behaviors" (Ahmann, 2014, p. 38).

Through NHA, parents are taught what to say and how to interact with the children. It is disseminated through community level practitioners and family life educators (Brennan et al., 2016). The professionals get certified in a 5 day intensive "advanced training" program. They become competent in a relatively short amount of time (Glasser, 2000). The content of the program includes what is to be taught to the parents and in what sequence. The training for

parents can occur through group parent training sessions, individual coaching or therapy sessions (Hektner et. al, 2013).

The creation of NHA was guided by insights from Howard Glasser's own life as "an exquisitely difficult child" (Glasser & Block, 2011, p. 15). He integrated the experiences from his own life into his work as a therapist to parents of difficult children and also trained other therapists for the same. Thus the conception of this approach was not based on any theoretical framework. Hektner et al. (2013) have brought out the parallels with other clinical practices (such as Parent-Child Interaction Therapy, McNeil & Hembree-Kigin, 2011; Parent Management Training Oregon Model, Forgatch & Patterson, 2010; helping the Noncompliant Child, McMohan & Forehand, 2003) and theories (such as Broaden and Build hypothesis, Fredrickson, 1998; Differential susceptibility theory, Belsky et al., 2007). However, a comprehensive theoretical understanding through which the change in behavior brought about by NHA can be explained is still lacking.

The NHA gives us an alternate to conventional mode of parenting and teaching which may not be equally effective for all different children. It is dictated by three stands. The first two of which are:

1. Refuse to energize negativity.
2. Energize the positive.

The NHA is built on the foundation of refusing to focus on problems (Glasser & Block, 2011). Parents and teachers are urged to deny to focus energy on the problems, to try to find out what the problem is or what could be the solution to that problem. To explain it further, NHA uses the analogy of "Toys R Us" (Glasser & Block, 2011, p. 29). When a child is given a new toy with lots of switches, lights and/or levers, the child explores the functions and properties of each. He/she does not need a manual to learn how the toy works. Whichever function the child finds the most interesting or compelling, he/she will use it repeatedly because

it provides an energized, fascinating experience. Likewise, adults are the children's' favorite toys, with multiple interactive features. Whenever they are acting out or showing an undesirable behavior, they get a highly energized, engaging, animated connectedness with the adults. On the other hand, when they are behaving well, adults do not show as much connection. In other words, they become relatively less entertaining. Children are quick to grasp this, i.e. when they exhibit negative behavior they get more closeness, more lively interaction and time from the adults. Such behavior results in quick, lively response and association from the adults and that is what the children seek. Thus, they have a need to connect with the adults and it pushes them to display behaviors which captivates the adult's attention and brings out an enlivened response. According to NHA every child has the need to connect with the adults (Glasser & Block, 2011). However, some need it more than the others and hence, the difference in behavior of children. Therefore, we can infer that at the base of such behavior is the need of the child to connect with the adults.

As an extension to the first stand, NHA's second stand urges the parents and teachers to focus on the positive. Whenever the child is doing something right or not doing something wrong, that act needs to be recognized, appreciated and praised. Relationship from negative behavior is no longer supposed to be available. Only when the child behaves with positive choices leading to successful instances does the child get relationship and connectedness with the adult. After continuous, instant reinforcement for success the child's behavior will change for the positive and desirable behavior will be exhibited out of his own volition. As these positive behavior are met with more recognition and appreciation, the child gets motivated to try them out more and to achieve better results. NHA urges the teacher to "find success in both what is happening as well as in what isn't happening (Glasser & Block, 2011, p.54). Whenever a child is continuously rebuked for his misbehaviors, he develops "an inner image of himself as a kid who couldn't possibly be good" (Glasser & Block, 2011, p.48). However, by focusing

on the positive and explicitly energizing the desirable behavior we are sending out a message that "you are valued and meaningful" (Glasser & Block, 2011, p.49). This creates a positive adult-child relationship. Instead of reprimands, warnings and chastisements; specific, honest and detailed recognitions are to be given for the good choices, following of rules and other positive behaviors. The first two stands of NHA explain how the adults accidentally and unintentionally show the children that they can get relationship with the adults when they misbehave or threaten to misbehave. Thus the central proposition of this approach is to remove "all energy from responses to students' negative choices" and energize the "many positive choices students make in the moments those choices are being made" (Glasser & Block, 2011, p. 24). Thus, their desire for the connectedness with the adults is still met. However, the only difference is that instead of misbehavior, it is now available when they make positive choices.

NHA suggests that instead of paying attention to the negative in an effort to extinguish negative behavior, adults should focus more on the positive behaviors that the children exhibit. Adults are advised to vividly appreciate the child's success with specific verbal approval. To do this, NHA suggests four techniques:

(a) *Active Recognition*: Through an active recognition, an honest, detailed description of what the child is doing is given. It is not accompanied by any form of judgment or evaluation. This conveys to the child that he is noticed and cherished. The child "translated this form of being seen and valued as being successful" (Glasser & Block, 2011, p.56). For instance, "Tina, I notice that you are using a lot of colors to create your picture. This is making your picture beautiful and vibrant".

(b) *Experiential Recognition***:** This is similar to active recognition. In addition to the detailed description, a value that the child is exhibiting at the moment is also added to the description. The active recognition is linked with the recognition and appreciation of the qualities that we wish to enhance specifically and in detail

(Glasser & Block, 2011). For instance to the active recognition mentioned above, the teacher might add "you have chosen the perfect colors. This shows your creativity and how great your choice is".

(c) *Proactive Recognition***:** In proactive recognition the child is recognized and appreciated for not breaking rules. By doing so the adult highlights the qualities of self-control and healthy exhibition of power (Glasser & Block, 2011). No child can break all the rules at the same time or during the entire day. At any particular moment the child gets recognized for all the rules he is not breaking (through proactive recognition) and thus enjoys the energetic relation with the adult for that. For example, in a classroom, if a child is not paying attention to the teacher, the teacher can consider all the things she is not doing and add "Tina, you are not talking to your friend while the class is going on. Thank you for being respectful and cooperative".

(d) *Creative Recognition***:** It is a method of making a request, the compliance of which garners a lot of appreciation and recognition for the child. If the child is resistant, requests are made which the child cannot object to (Hektner et. al, 2013). Thus, "we create compliance before the child can refuse to comply" (Glasser & Block, 2011, p. 83). Requests are stated clearly and not in the form of a question (Glasser & Block, 2011). The desired behavior is shaped by initially keeping very low expectation and gradually making more complex requests and reinforcing the progress. The child is recognized for doing something positive. "This experience gives rise to intrinsic motivation" (Glasser & Block, 2011, p.84). An example of this recognition would be the teacher making a simple request like, "Tina, please distribute these sheets among your classmates" after she has complied the teacher

remarks with a creative recognition, “Thank you so much for helping me. I really appreciate your cooperation and you helping me and your classmates”.

The third stand of NHA states:

(3) Clearly but un-energetically enforce limits.

In this approach the rules and consequences are explicitly set. The rules are framed in a negative way (e.g.: no lying, no distracting others). When rules are broken, a ‘reset’ is applied. It is applied unenergetically. During a reset the adult withdraws all energy from the adult-child relationship and no interactions happen. Reset is a “brief, clean time-out” (Glasser & Block, 2011, p.109) where the child is given an opportunity to stop the undesired behavior. The duration for which a reset is applied is not specific (Hektner et. al, 2013). The successful completion of the reset is also recognized (Hektner et. al, 2013).

Empirical Studies on NHA

It appears that there have been very little empirical studies on NHA (Ahmann, 2014) or its effectiveness (Hektner et. al, 2013). A quasi-experimental study by Brennan et al. (2016) found that parents trained in NHA had enhanced well-being, increased positive attention towards children and decreased yelling, scolding and negative responses after the training, as compared to a control group. They also started recognizing strengths in their children and their perception of their children changed after the training. A doctoral dissertation study by Ward (1997) had compared data from mothers who received training in NHA and a comparison group. Mothers who received training reported significant decreases in child’s externalizing and internalizing issues, mother’s depression and stress and also reported significant increases in parenting efficacy, satisfaction and sense of competence. Another Masters Dissertation study by Nielson (2012) adapted the techniques from Social Skills Improvement System and NHA to impart

social skill instruction. The study reported improved teacher ratings on Prosocial Behavior and Motivation to Learn for fifth grade students.

Upon careful understanding and deliberations, it is evident that the tenets of NHA are congruent with those of SDT. The three stands and recognitions of NHA can provide a way to enhance the fulfillment of the three basic psychological needs. Also if they indeed help in the fulfillment of the needs, SDT can provide a theoretical underpinning to NHA which it otherwise lacks. Study 2 (page no. 123-154) discusses the development and testing of an intervention strategy developed based on the integration of SDT and NHA to facilitate academic motivation of LD students.

Inclusive Education

Inclusive education is a system of education that enables learners from various needs, abilities and interests to learn together. It is a new approach to education which "aims at integrated development of children with special needs and normal children through mainstream schooling" (Sanjeev & Kumar, 2007, p. 2) It accommodates children regardless of their physical, intellectual, social, emotional, linguistic or other condition (Bindal & Sharma, 2010). This education system does not differentiate between learners on the basis of any condition. It is a morally and ethically superior concept based on rejection of an education system that marginalizes or segregates students (Nind, 2014).

In an inclusive education system the diverse learning needs of all children are given equal attention, especially those who are vulnerable to marginalization and exclusion (Sanjeev & Kumar, 2007). It is about accepting that different children may learn at different paces, have different educational needs and have different learning styles. In an inclusive framework the learners equally participate in the learning process and it also involves all stakeholders (learners, parents, teachers, administrators and policy makers) (Bindal & Sharma, 2010). "It is

about celebrating diversity and changing the rigid school system in order to meet the needs of all children" (Bindal & Sharma, 2010, p. 36).

The UNESCO Salamanca Statement and Framework for Action on Special Needs Education (1994, p. 6) stated that "schools should accommodate all children regardless of their physical, intellectual, social, emotional, linguistic or other conditions. This should include disabled and gifted children, street and working children, children from remote or nomadic populations , children from linguistic, ethnic or cultural minorities and children from other disadvantaged or marginalized areas or groups. These conditions create a range of different challenges to school systems. In the context of this Framework , the term 'special educational needs' refers to all those children and youth whose needs arise from disabilities or learning difficulties. Many children experience learning difficulties and thus have special educational needs at some time during their schooling. Schools have to find ways of successfully educating all children, including those who have serious disadvantages and disabilities. There is an emerging consensus that children and youth with special educational needs should be included in the educational arrangements made for the majority of children. This has led to the concept of the inclusive school."

Loreman (2009) outlined the key elements in the understanding of inclusive education as:

1. All children attend their neighbourhood school.
2. Schools adopt a no rejection policy and all students are accepted.
3. All students of the same age group learn in the same classroom.
4. All students follow similar study programme with the curriculum and mode of instruction modified to suit the need of every student.
5. All students participate in school and classroom learning activities.
6. Students are given adequate support to make friends and to be socially successful.

7. The school staff and teachers are provided with adequate training and resources to bring about inclusion.

An inclusive approach tries to bring about educational and personal development without trying to eliminate differences (Nind & Kellet, 2002). Ainscow (1999) states that in an inclusive educational system diversity should not be viewed through normative standards but seen as a cue to change the educational experience. With the era of inclusive education the responsibility for change has shifted from learners to practitioners (Nind & Kellet, 2002). In the Index for Inclusion, Booth and Ainscow (2002, p. 3) mention the following features to be involved in inclusion in education:

- "Valuing all students and staff equally.
- Increasing the participation of students in and reducing their exclusion from the cultures, curricula and communities of local schools.
- Restructuring the cultures, policies, practices in schools so that they respond to the diversity in the locality.
- Reducing barriers to learning and participation for all students, not only those with impairments or those who are categorized as "having special educational needs".
- Learning from attempts to overcome barriers to the access and participation of particular students to make changes for the benefit of students more widely.
- Viewing the difference between students as resources to support learning, rather than problems to be overcome.
- Acknowledging the right of students to education in the locality.
- Improving schools for staff as well as for students.
- Emphasizing the role of schools in building community and developing values, as well as in increasing achievement.

- Fostering mutually sustaining relationships between schools and communities.
- Recognizing that inclusion in education is one aspect of inclusion in society".

The definitions and interpretations of inclusive education are varied and diverse (Singhal, 2008). Goranson and Nilholm (2014, p. 268) have categorized the definitions of inclusive education into 4 types:

1. "Placement definition: inclusion as placement of pupils with disabilities/in need of special support in general education classrooms.
2. Specified individualised definition – inclusion as meeting the social/academic needs of pupils with disabilities/pupils in need of special support
3. General individualised definition – inclusion as meeting the social/academic needs of all pupils
4. Community definition – inclusion as creation of communities with specific characteristics (which could vary between proposals)".

In a special education system children with special needs are separated from their peers as they attend a different school. This may lead to unnecessary discrimination and stereotypical thinking. This kind of marginalization and/or exclusion can lead to the development of inferiority among the students (Sanjeev & Kumar, 2007) If students are separated from their childhood on the basis of disability, they will later grow up with an invisible barrier separating children with and without disabilities. An inclusive education system aims to curb such barriers at the outset. In such a system all children (with and without disabilities) learn together. Thus, inclusive education is about accepting and celebrating diversity. It also upholds the democratic nature of the society (Bindal & Sharma, 2010).

Inclusive Education in India

Inclusive education in India is mostly concerned with students with disabilities (Singhal, 2008). According to WHO (1980, p. 143), a disability is "any restriction or lack (resulting from an impairment) of ability to perform any activity in the manner or within the range considered normal for a human being". Disability is understood through two models- the medical model and the social model. The medical model views disabilities as a physical, medically diagnosed, individual problem which handicaps. The social model explains disability not as a physical problem, but as a consequence of the impairments caused by the environmental and attitudinal influences which hinder social participation (Lindsay, 2007). The Ministry of Social Justice and Empowerment in India which is responsible for people with disabilities endorses a medical model inspired explanation of disability (Giffard-Lindsay, 2007).

In 1994, the World Conference on Special Needs Education was held in Salamanca, Spain in which India was a participant along with several other countries. This conference urged the governments of all the participating countries to implement inclusive education as a policy (Bhatnagar & Das, 2014). Following this number of policies and programmes were implemented in India in the last three decades to further the cause of inclusive education (Bhatnagar & Das, 2013). Lindsay (2007) traces some of these government programmes:

- **Integrated Education for Disabled Children**:

  The Integrated Education for Disabled Children (IEDC) scheme was initiated by the Ministry of Social Justice and Empowerment from 1974 to 1982 in an effort to encourage cooperation between mainstream schools and special schools in order to support integration.

- **Project on Integrated Education for Disabled**:

  This project was launched jointly by the UNICEF and the National Council of Educational Research and Training (NCERT) in 1987. Its intention was to encourage integration of

education through teacher training. It was implemented in one block each of several states. As a result of this project the enrollment of children with disabilities increased in schools and their retention was also high (Sanjeev & Kumar, 2007).

- **District Primary Education Programme:**

This programme was launched in 1995 with the objective of universalisation of primary education. Children with disabilities were focused on by providing learning opportunities suited to their needs, to achieve education for all. It also included community mobilization, early detection, teacher training services, resource support and provision of educational aids and removal of architectural barriers (Sanjeev & Kumar, 2007).

- **Sarva Siksha Abhiyan:**

The Sarva Siksha Abhiyan was launched in 2002 with the aim of achieving universalisation of elementary education. The three most important aspects of this project are access, enrolment and retention of all children in the 6-14 years of age. It included a no rejection policy, that is, no child with disability will be kept bereft of meaningful and quality education. Additional components under this project for children with special needs include: "early detection and identification, functional and formal assessment, educational placement, aids and appliances, support services, teacher training, resource support, individual education plan (IEP), parental training and community mobilization, planning and management, strengthening of special schools, removal of architectural barriers, research monitoring and evaluation, girls with disabilities" (Sanjeev & Kumar, 2007, p.9).

Several legislations have also been passed which further the cause of inclusive education like the Rehabilitation Council of India Act of 1992, the Persons With Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act of 1995 and the National Trust Act (National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disability) of 1999. The latest amendment to this act has been made

in 2016, wherein the number of recognized disabilities has been increased from 7 to 21. LD has also been included for the first time. Under this act, government funded schools as well as government recognized schools should compulsorily provide inclusive education.

In her study Singhal (2008) examined the perceptions, practices and experiences of school heads, teachers and other staff members working in schools that were perceived as inclusive schools in Delhi. The study reported that the change to inclusion was spearheaded almost in all schools in the study by the head of the school. There were three reasons cited for the change. Some schools did it for financial reasons while others did it because of philanthropy. Some other schools were pressured by the parents of children with disabilities to enroll their children in the mainstream schools. However, as the interviews with the teachers reflected the schools were very selective about the kind of students with disabilities they admitted. Children with physical disability or sensory disability with average IQ were preferred and children with other forms of disabilities were considered to be eligible for special education.

In an inclusive education approach children with disability and learning difficulties are educated with the normal ones under the same roof (Sanjeev & Kumar, 2007). Disability oriented inclusive education is about active participation from all students and not just enrolling them in a mainstream school (Nind, 2014). Factors which facilitate inclusive education for students with disability can probably lead to an improved scenario for all. In disability oriented inclusive education students with disability are not the only ones benefited but the school and everyone in them enjoy the benefits (Nind, 2014). Inclusive education gives rise to an environment where students have to interact with other students with different characteristics, interests and abilities. Such interactions can result in positive attitudes towards student with disabilities (Bindal & Sharma, 2010).

Lynch and Getzel (2013) have noted that participation of students with Intellectual Disability in various post-secondary inclusive programs has led to several positive outcomes like increases in student maturity, independence, self-confidence, and capabilities (e.g. Uditsky & Hughson, 2012); measurable gains in reading and writing skills (e.g. Folk, Yamamoto,& Stodden, 2012); successful course completion, friendship building, and participation in campus organizations (e.g. Carroll, Herman, & Wickizer, 2012); and a high rate of paid employment (e.g. Grigal & Dwyre, 2010). The benefit of including special needs students into the general educational environment far outweighs the negatives. Special needs students also acquire motor skills, communication & other skills within a natural setting. O'Rourke (2015) in his review of research on inclusive education mentions that there is strong and widespread evidence to support the fact that the social and academic outcomes of inclusion are positive and favorable. The Canadian Council on Lessons in Learning (2009) found two trends in research related to comparison of segregated and inclusive education: students with disabilities do as well in inclusive classroom as they do in segregated classrooms and they acquire small academic benefits from inclusion.

However, in spite of the global impetus on inclusive education and consistent findings regarding its benefits, there is still some apprehension when it comes to adopting this mode of education (O'Rourke, 2015). Inclusion is criticized because as an approach it has not proved itself (Lindsay, 2007). Also, critics believe that this approach neglects the science of special education and is harmful to individual students (Allan, 2013). Teachers perceive that their ability to teach is compromised by the presence of students with special needs in their classrooms which ultimately affects the other children and they also doubt the effectiveness of their preservice training with regard to teaching students with special needs (Forlin et al., 2008). Sharma et al. (2009) reported than teachers in India are mostly concerned about the lack of resources to implement inclusion. Another study by Singhal (2008) found out that large class

sizes were the major barrier to implement inclusive education. Shah et al. (2013) reported the lack of infrastructural resources to be the main concern of teachers. Teachers and principals are also concerned about the lack of resources, the non-availability of instructional material, lack of funding and the lack of training to implement inclusive education (Sharma et al., 2009). Bhatnagar and Das (2014) in their study reported the following barriers to inclusive education:

- Lack of trained teachers
- Lack of inclusion policy
- Lack of differentiation in instruction
- Parental pressure
- Teacher anxiety
- Negative attitudes
- Fear of downfall of academic achievement
- Lack of professional development of the teachers
- Admission policy of the school.

A study by Bhatnagar and Das (2013) found that teachers in Delhi held a slightly positive attitude towards including students with disabilities in their classroom. The same study revealed that male, younger teachers with less years of experience, having a postgraduate degree, having contact with a person with disability and who did not have an emphasis in special education during their preservice teacher education held more positive attitude towards inclusive education. Another qualitative study by the same researchers (Bhatnagar & Das, 2014 a) revealed similar results about attitudes of teachers towards inclusion. A survey of 223 primary school teachers and 130 secondary school teachers, by Das, Kuyini and Desai (2013) showed that 70% of the regular school teachers did not have training and experience in teaching students with special needs. Also 87% of them did not have access to support services in their classrooms. Singhal's study (2008) indicated that inclusion was undertaken by the schools for

reasons like financial resources, parental pressure and also because of philanthropy. However, very little changes were made in the classrooms. Selection of students with disabilities was limited to those with physical and sensory disability and with an average IQ. Children with other disabilities were seen as the responsibility of the special educators.

The most important variable for the success of the inclusive education program is the regular classroom teacher (Das, Sharma & Singh, 2012). As is evident from the studies mentioned above a lot of studies in India have been dedicated to understand the teacher specific contexts related to inclusion. However, inclusive education involves all stakeholders in the educational system, including students (Bindal & Sharma, 2010). A perspective on inclusive education as viewed by the students is equally important and necessary. Hence this study proposes to include students in the inclusive discourse, which is lacking in the present literature. This is especially important because it could lead the way to sustainable changes required in this direction as per the needs of the students.

Inclusive education in India is at an early stage of development and implementation and there is potential for this concept to be developed further in the future (Giffard-Lindsay, 2007). Of the limited research in this area the fact that emerges is that the beginning has been made, but more research is necessary to make inclusive education an effective practice (Bindal & Sharma, 2010). Therefore, this study aims to explore this area further so that appropriate steps can be undertaken to suit the learning needs of all students.

Well-Being

The construct of well-being is involved with almost all dimensions of life whether it is political, social or interpersonal. It is a complex concept. Well-being refers to optimal psychological functioning and experience (Ryan & Deci, 2001). Psychology's initial focus on psychopathology had not focused much on well-being, although it was one of the goals of

psychology. However, with positive psychology gaining the much deserved attention, well-being and its promotion has become an important field of scientific psychological enquiry.

Well-being is studied and conceptualized under two traditions: the first is the hedonic view and the second is the eudaimonic view.

The Hedonic View

According to this view well-being consists of happiness or pleasure. This includes pleasures of the mind as well as the body. The hedonic psychology of well-being involves all aspects of life concerned with maximizing pleasure and minimizing pain. Thus, well-being consists of subjective happiness and is concerned with experience of pleasure versus displeasure. Thus, the clear goal of hedonic psychology is maximizing human happiness (Ryan & Deci, 2001).

To measure well-being, hedonic psychology uses the concept of subjective well-being (SWB) (Diener et al., 1999). SWB is a broad term used to denote the level of personal, subjectively perceived well-being people experience based on their evaluations of their lives. It involves positive or negative evaluations of their interests and engagements, affective reactions (both positive and negative), satisfaction with work, relationships, health, recreation, meaning and all important domains in life. SWB consists of three components: the presence of positive mood, the absence of negative mood and life satisfaction.

Benefits of subjective well-being.

- Social Relationships:

People are happier when they have people around. However, this seems to be a reciprocal interaction. People with greater number of family and friends have higher SWB and also people with higher SWB have greater number of close and supportive social relationships (Diener & Biswas-Diener, 2011).

- Work and Income:

People who are higher on SWB have been found to earn more, regardless of their occupation (Diener, Nickerson, Lucas, & Sandvik, 2002). They have also been found to have higher supervisor rating (Wright & Staw, 1999), and were rated as more productive, creative and dependable and having higher work quality (Staw et al., 1994).

- Health and Longevity:

Empirical evidence shows that SWB improves both health and longevity. People who have higher SWB have reported better health and fewer physical pathological symptoms (Roysamb et al., 2003). Studies have also shown that people with higher SWB live longer (e.g. Danner et al.,2001; Pressman, & Cohen, 2007).

- Benefits to Society:

SWB has societal benefits also. People with higher SWB have been reported to engage in more pro-social activities (Tov, & Diener, 2008; Thoits & Hewitt, 2001; Krueger, Hicks & McGue, 2001). Such peole also tend to have more trusting, co-operative and pro-peace attitudes, stronger support for democracy and higher levels of tolerance for immigrants and racial groups (Tov, & Diener, 2008; Diener & Tov, 2007).

Thus, SWB, as an indicator of well-being has important implications. It is a broad concept which involves cognitive and affective evaluations about one's life. Cognitive evaluations are the judgments of satisfaction regarding different domain of life and affective reactions are emotional reactions to events.

The Eudaimonic View

The eudaimonic view of well-being is different from the hedonic view in that it does not conceptualize well-being in terms of happiness. According to Aristotle, true happiness lies in expressing one's virtue (Ryan & Deci, 2001). According to this view, satisfaction of all human

desires may not result in happiness and may in fact sometimes lead to the opposite result. Some outcomes are not beneficial and hence, do not promote well-being. According to Waterman (1993) well-being is achieved when people live in accordance with their true self. He also added that eudaimonic well-being occurs when people engage in activities which are congruent with their values. This lead to an authentic life, people exist as who they really are. It involves being challenged and exerting effort while the hedonic view of well-being is more relaxed and being away from pain and problems.

Ryff and Singer (1998, 2000) talked about psychological well-being (PWB), in contrast to SWB and gave six dimensions which measures PWB: autonomy, personal growth, self-acceptance, life purpose, mastery and positive relatedness.

PWB reflects a gamut of well-being aspects including positive evaluation of one's self and life, a sense of continues growth, a meaningful and purposeful life, a capacity to manage one's life effectively, meaningful relationships with other people and self-determination (Ryff, 1995). These six dimensions vary with age. Environmental mastery and autonomy increases with age. Personal growth and purpose in life decreases from mid-life to old age. Positive relationships with others and self-acceptance reveal no age difference. Women have been found to have rated themselves higher than men on positive relationships with others and personal growth. There are no differences in the remaining four dimensions (Ryff, 1995).

SDT talks about three basic psychological needs (of autonomy, competence and relatedness). The various social contextual environments in which an individual functions can either satisfy these needs or thwart them. The individual's experienced level of well-being will depend on the satisfaction versus thwarting of these needs. Satisfaction of the needs will result in well-being. The six dimensions given by Ryff and Singer (1998) are similar to the basic needs posited by the Self Determination theory. However the difference between the two approaches is, whereas, Ryff & Singer use the dimensions to define and measure well-being;

SDT suggests that they promote well-being. Further, according to Ryan & Deci (2001), satisfaction of the basic needs promotes both subjective well-being and psychological well-being.

Well-being of students with LD

Studies on well-being of students with LD have mostly concentrated on their emotional well-being. Emotional well-being of students with LD was compared to students without LD. Students with LD have been found to be at risk for severe depression and suicide (Huntington & Bender, 1993). In another study by Nelson & Harwood (2011) students with LD were found to have higher mean scores for anxiety than students without LD. Heath & Ross (2000) reported that girls with LD had higher levels of scores for depressive symptoms than girls without LD. Two studies (Cooper, 2006; McCullough & Huebner, 2003) compared the life satisfaction of students with LD and without LD. Both the studies did not find any difference between the two groups. Different researches (as cited in Wright-Strawderman and Watson, 1992) have found varying percentages (ranging from 10% to 29%) of students with LD scoring in the depressed range of various tools measuring depression. Bruck (as cited in Lyon, 1996) mentioned that children with LD have higher levels of anxiety, withdrawal, depression and lower self-esteem as compared to children without LD. The results of Karande et al. (2008) revealed that the Health Related Quality of Life of children with LD was compromised in India.

SDT and Well-being

SDT endorses the eudaimonic viewpoint of well-being. Past research has been aimed at establishing an association between need satisfaction and well-being. In two studies (Sheldon, Ryan & Reis, 1996; Reis et al., 2000) assessing both between person level and within person level of need satisfaction, basic need satisfaction was positively associated with positive affect,

vitality and negatively linked to negative affect and symptomatology. In a study by Kasser & Ryan (1999) satisfaction of autonomy and relatedness was found to be associated with well-being of residents of nursing home. Similar results were also found in work place settings (Ilardi et al.,1993). However, no studies were found to attempt to establish this association between need satisfaction and well-being in an educational setting. Thus, there is a need to check if this holds true in educational settings, especially in the context of learning disability. Also studies with students with LD have mostly concentrated on their emotional well-being. Satisfaction of the basic needs of autonomy, competence and relatedness is postulated to lead to both SWB and PWB (Ryan & Deci, 2001). Hence this study intends to assess both SWB of students with LD. As indicated by studies, students with LD have been reported to have higher ratings of negative affects. Therefore, it is important to develop intervention strategies which may enhance their well-being.

Self-Efficacy

According to Bandura (1994), perceived self-efficacy can be defined as a person's beliefs on his capabilities to exhibit ascertained levels of performance which will influence events that impact his life. Self-efficacy is a central mechanism of personal agency. Peoples' beliefs on their ability to produce desired results through their actions, pushes them to act (Bandura et at., 1996). Various researches show that self-efficacy beliefs exert considerable impact on human development and adaptation (Jerusalem & Schwarzer, 1992).

Social Cognitive Theory

Self-efficacy is an important concept embedded in the social cognitive theory forwarded by Bandura in 1986. The main postulate of this theory is that human functioning is reliant on the interaction of personal factors, behaviors and environmental factors. Thus it endorses triadic

reciprocal determinism, where the three factors (behavior, cognition and other personal factors, and environmental influences) interact with each other bidirectionally (Bandura, 1989).

Self-efficacy is the core of social cognitive theory. It provides the necessary incentive to act because unless people believe that can accomplish the actions to produce the desired outcome, they are unlikely to act in that direction (Pajares, 2002). Self-efficacy acts as "one of the proximal determinants of how people behave, their thought patterns, and the emotional reactions they experience in taxing situations" (Bandura, 1989, p. 59). Widely reported research supports that self-efficacy influences many aspects of human functioning – how they think (optimistically or pessimistically), the way they motivate themselves and persevere in the face of difficulties, vulnerability to stress and depression and the life choices they make. These areas are more dependent on what people believe about themselves rather than their actual level. Self-efficacy can effectively explain the discrepancy sometimes observed between how people actually behave and what they are capable of achieving (Pajares, 2002).

Zimmerman (2000) laid down the **dimensions** of self-efficacy as follows:

- Level of self-efficacy refers to its dependence on the difficulty of the task.
- Generality refers to the transferability of the efficacy beliefs across tasks.
- Strength of self-efficacy refers to the amount of certainty with which a person believes his capacities.
- Rather than personal qualities, self-efficacy focuses on performance capabilities.
- Self-efficacy is domain specific.
- Self-efficacy is dependent on mastery criterion rather than normative criterion.
- Self-efficacy refers to future functioning.

People with high self-efficacy face difficulties as challenges to be mastered rather than as threats. They set goals and display greater commitment and perseverance to attain them.

Such an outlook fosters intrinsic interest in them. They do not attribute failures to personal qualities but to insufficient knowledge and effort. They have a better sense of control over threatening situations. Such beliefs generate personal successes, decreases stress and anxiety and reduce the chances of depression. On the other hand, people with a low sense of self-efficacy view difficult tasks as personal threats, have low aspirations and show weak commitments. In the face of difficult situations they concentrate more on personal deficiencies and negative outcomes and give up readily. As they attribute failures to personal causes, they are more prone to stress and depression (Bandura, 1994).

Sources of Self-Efficacy

Self-efficacy develops from four main sources (Pajares, 1996):

- Mastery experiences create a strong sense of self-efficacy. Experience of successful endeavors can build a strong sense of self-efficacy, especially if success is achieved after perseverant effort and after overcoming obstacles. Experiences of failure undermine self-efficacy.
- Observing social models succeeding is the second way of developing self-efficacy. Seeing others achieve success in spite of obstacles, fosters a belief in individuals that they can also achieve the same by sustained effort. However, it depends on how similar the individuals perceive them selves to those social models.
- The third way of developing self-efficacy is through social persuasion. People can be verbally persuaded that they possess the capabilities to achieve certain goals. Such persuasion leads to spending of greater effort and perseverance.
- People can also develop self-efficacy beliefs by relying on their somatic and emotional judgments. Stress reactions, tension and other signs of physical fatigue are judged as signs of vulnerability to poor performance. Also positive mood enhances self-efficacy,

while negative mood reduces it. Self-efficacy can be developed by reducing stress and inducing positive mood.

Academic Self-Efficacy

A more specific form of self-efficacy is academic self-efficacy. Academic self-efficacy refers to student's perceived beliefs in their capabilities with respect to tasks in the academic domain (Schunk & Pajares, 2002). Academic self-efficacy is an important concept since various researches have established it as a predictor of academic performance (Komarraju & Nadler, 2013). Students' academic self-efficacy has an impact on how much effort they put in, their perseverance and resilience when faced with obstacles. Students demonstrate high academic self-efficacy when they have a strong conviction on their capacity to organize, regulate and execute their performance at a desired level to achieve desired outcomes or specific academic goals. Students' academic self-efficacy can differ across subjects and tasks.

As outlined by Bandura (1993), students with high academic self-efficacy:

- view problems as challenges to be mastered instead of threats and set goals to meet the challenges;
- are committed to the academic goals they set;
- have a task-diagnostic orientation, which provides useful feedback to improve performance, rather than a self-diagnostic orientation, which reinforces the student's low expectation about what he or she can accomplish;
- view failures as a result of insufficient effort or knowledge, not as a deficiency of aptitude; and
- increase their efforts in cases of failure to achieve the goals they have set.

Academic self-efficacy has been found to be associated with a number of positive academic outcomes like interest (Pajares & Miller, 1994; Lent, Lopez & Bieschke, 1993),

academic performance (Pintrich & Groot, 1990; Schunk, 1984), academic persistence (Lent, Brown & Larkin, 1984). Students with better academic self-efficacy have also been found to be more likely to complete their education (Bandura, Barbaranelli, Caprara & Pastorelli, 2001). On the other hand, students with low academic self-efficacy have been found to engage in problem behaviours like delinquency, dropping out of school and unemployment (Bandura, Barbaranelli, Caprara & Pastorelli, 1996, 2001). Longitudinal studies (such as Phan, 2012) have also established the relationship between self-efficacy and positive academic outcomes (academic achievement).

Academic self-efficacy has been studied in the context of motivation and academic performance. It has been widely reported that self-efficacy beliefs are associated with motivation constructs, academic choices and achievement, although these relationships depend on how these concepts have been operationalised and assessed (Pajares, 1996). Academic self-efficacy has been found to be a strong predictor of motivation and performance across time, a variety of environments and different populations (Bandura & Locke, 2003; Multon, Brown & Lent, 1991). It is believed that the motivational component of self-efficacy is effective in predicting academic performance (Chemers, Hu & Garcia, 2001; Valentine, DuBois & Cooper, 2004; Zajacova, Lynch & Espenshade, 2005). In the context of choice of activities, highly efficacious students were found to be more likely to engage in more difficult and challenging task than inefficacious students (Bandura & Schunk, 1981). Other aspects of motivation like rate of performance and effort have also been found to be associated with self-efficacy. Students' self-efficacy for learning has been shown to be positively correlated to their rate of solution of arithmetic problems (Schunk, Hanson & Cox, 1987).

Self-efficacy of students with LD

Students with learning disabilities typically encounter repeated failures due to their learning issues. This may lead them to develop a negative idea regarding themselves and also their capacities to attain academic goals and have a low sense of self-efficacy. Having a low sense of self-efficacy can have negative impact on their academic functioning and also in other areas. Students with LD have been reported to have higher levels of stress and anxiety and other maladaptive behaviours like learned helplessness, lower persistence and lower academic expectations of themselves (Goroshit & Hen, 2012). Self-efficacy has also been shown to impact students by reducing their stress, anxiety and depression (Bandura, 1997). Hence, it is even more important for students with LD to have an appropriate sense of self-efficacy.

Studies on self-efficacy of students with LD have shown that they usually have lower academic self-efficacy. Tabasam & Grainger (2002) reported that students with LD have lower academic self-efficacy than their normally achieving peers. Yeun, Westwood & Wong (2008) reported similar findings. Baum & Owen (1998) found that high ability-LD students had lower self-efficacy beliefs than low ability-LD students and normally achieving peers. Graham, Schwartz and MacArthur (1993) found no difference between the self-efficacy of students with and without LD. Hampton (1998) found that students with LD rated lower in all four sources of self-efficacy – mastery experiences, vicarious learning, persuasion and physiological arousal- than students without LD.

However, there are results in the opposite direction as well. Graham & Harris (1989), Graham et al. (1992), Graham et al. (1993) and Sawyer et al. (1992) found that students with LD overestimated their self-efficacy beliefs in writing tasks. Klassen (2002) offers an explanation to understand these results that students with LD display deficiencies in meta-cognitive abilities - awareness of one's cognitive processes, cognitive strengths and weaknesses, and self-regulation. Therefore they have difficulty in successfully analyzing the

task, implementing proper strategies and monitoring their performance. It may also be a coping strategy to help them adjust to the academic demands.

Thus, it can be observed that there are mixed findings related to self-efficacy of students with LD. Students with LD have been shown to have lower self-efficacy than their normally achieving peers and in some cases to overestimate their self-efficacy beliefs. Having a low sense of self-efficacy can adversely affect their academic performance and perseverance and can also lead to greater stress and anxiety. According to Bandura (1997), enhanced self-efficacy is associated with motivation and achievement but it is effective when it is accurate. Inaccurate self-efficacy beliefs can instead lead to lack of preparation and contribute to disappointments due to academic failure. Hence, in the light of these findings it can be stated that seeking other ways to enhance self-efficacy of students with LD can contribute to positive outcomes in them.

Chapter 3

Study 1: Impact of Inclusive Education on Psycho-social Functioning of students with LD

Introduction

Inclusive education strives to bring marginalized students to the mainstream and make everyday education accessible to all learners (Nind, 2014). Inclusive education is about accepting diversity, only attending a mainstream regular school is not inclusive education (Giffard-Lindsay, 2007). Inclusion of children with disabilities should be seen as an opportunity to provide education to all rather than seeing it as a charitable cause (Sharma & Das, 2015). Since it is a process designed for the students it is bound to have considerable impact on them. Inclusive education in India is at an early stage of development and implementation (Giffard-Lindsay, 2007). Although it has emerged as a policy that is mostly prevalent in the schools, its impact on students remains to be assessed. It is believed that students with LD form a major section of the population who are being "included" in mainstream schools. Therefore, this study was conceptualized to explore how they are impacted with respect to various relevant variables.

Rationale

"Inclusive education means that all children, regardless of their ability level, are included in a mainstream classroom, or in the most appropriate or least restrictive environment (LRE), that students of all ability levels are taught as equals, and that teachers must adjust their curriculum and teaching methodologies so that all students benefit" (Antil, 2014, p. 85). Two advantages of inclusive education as listed by McGregor and Vogelsberg (1998) are:

- Acceptance of children with disabilities is increased more in an inclusive set up.
- Friendships develop more between children with disabilities and those without disabilities in an inclusive set up.

The social and emotional functioning of students with LD has received little attention and studies which have been done in this area have produced mixed results (Weiner, 2004).

There is considerable evidence to show that children with LD have problems with social relationships and social interactions (Weiner, 2004). But, as mentioned above, inclusive education fosters greater acceptance of students with disabilities and leads to more friendships being formed. Further, children who have close friends are psychologically better adjusted. In the light of all these aspects this study aims to study what impact does inclusive education have on peer acceptance and peer relationships of students with LD.

According to McGregor and Vogelsberg (1998) children with disability are exposed to a more rigorous setting in an inclusive set up leading to improved skill base and academic gains. As evident from the aforementioned sections, intrinsic academic motivation, academic self-efficacy and well-being are important for favourable academic outcomes, especially for students with LD. But how does an inclusive educational setting influence these variables remain to be explored. This study will be a step forward in understanding this aspect.

The most important variable for the success of the inclusive education program is the regular classroom teacher (Das, Sharma & Singh, 2012). What happens in the class is dependent on the attitude of the teachers, which in turn is essential for the success of inclusion (Giffard-Lindasy, 2007). A positive attitude makes inclusion possible (Moffat, 2011). Bhatnagar and Das (2013) found a slightly positive attitude towards inclusion in teachers. On the other hand, a study by Singhal (2008) found that teachers considered students with disabilities other than physical and sensory impairment to be the responsibility of special educators. This complicates the ground for students with LD in an inclusive setting. LD is a hidden disability (Raj, 2010) because it can go undetected and can puzzle the teachers. Since the attitude of teachers will influence the classroom practices, the attitude of teachers towards students with LD will be studied.

Inclusive education aims at all the stakeholders (including learners) (Bindal & Sharma, 2010). Ideally all stakeholders should participate in the inclusive education process,

including the child (Giffard-Lindsay, 2007). Inclusion as perceived by those for whom it is meant to be, should be a central focus of research on inclusive education (Lim & Thaver, 2014). Inclusion as perceived by the students will be subjective since their perception is constructed by their unique selves and experiences (Lim & Thaver, 2014). However, students are seldom taken as participants in studies on inclusive education and its effect (Goransson & Nilholm, 2014). This is why, this study intends to fill this gap and contribute to the understanding their experiences and inform us on how best to support and enhance inclusion in classrooms.

Inclusive education in India is a recent area of development and more work in the area of implementation and impact is of utmost necessity and consequence (Giffard-Lindsay, 2007). Hence this study will explore the impact of inclusive education on students with LD to check to what extent it is benefiting them.

Research Questions

The research questions framed for this study are as follows:

1. What impact has inclusive education had on students with LD?
    A. What is the impact of inclusive education on peer relationships of students with LD with regard to the number of friends that they have?
    B. What is the impact of inclusive education on peer relationships of students with LD with regard to the age of the friends?
    C. What is the impact of inclusive education on the friendship quality of students with LD?
    D. What is the level of intrinsic academic motivation, academic self-efficacy and well-being of students with LD as compared to students without LD?
2. What is the attitude of the regular classroom teachers towards including students with LD in their classrooms?

Method

Participants

The first study consisted of two primary research questions. To address the first research question, the sample consisted of students with LD studying in special schools (n = 72), students with LD studying in inclusive schools (n = 75) and students without LD studying in inclusive schools (n = 75). The students were in the age group of 10 to 16 years and were from two cities of India; Chennai and Guwahati. The students with LD were also diagnosed and assessed by the schools. Their specific area of disability was not taken into consideration, since the focus of this thesis is on psycho-social functioning of students with LD. Most of them had been receiving remedial classes at school. For the second research question, the sample consisted of teachers from different schools in the same two cities of India (Chennai and Guwahati). There were a total of 257 participants, out of which 185 were from Private schools and 72 were from Government schools. Teachers who taught the primary classes were excluded from the study.

Measurement Tools

To collect the data about the number of friends, all participants were asked to write down the names of their friends, the school they went to and their age.

Self-Regulation Questionnaire – Academic (Deci, E. L., Hodges, R., Pierson, L., & Tomassone, J., 1992).

It is a 17 item questionnaire which has been adapted from a scale developed by Ryan & Cornell (1989). It assesses the student's style of academic self-regulation, that is, the reason why a student would perform a particular task. It is a likert type scale in which the student is required to indicate how often the student performs the tasks for the given reason. This questionnaire has two versions. The version for students with LD was used in the study since the targeted sample consists of students with LD. It has four subscales: external regulation, introjected

regulation, identified regulation and intrinsic motivation. The reliability measured by Cronbach alpha for the scales ranged from 0.66 to 0.82.

Children's Self-Efficacy Scale (Bandura, 2006).

This scale is used to assess the level of confidence that children perceive they have to perform certain tasks. The scale is meant for school going students. Two subscales from the original scale was used for the present study. They are: self-efficacy for academic achievement (8 items) and self-efficacy for self-regulatory learning (10 items). These scales were selected because they suit the objective of this study as they were related to academics and learning. The scale of the original version ranged from 0 (cannot do at all) to 100 (highly certain can do). For the present study the scale was also modified to range from 0 (cannot do at all) to 10 (highly certain can do). This was done to make the scale simpler and also to keep it similar to the other scales to be used in the present study. The Cronbach alpha coefficients for the two scales were reported to be 0.87 (self-efficacy for academic achievement) and 0.80 (self-efficacy for self-regulatory learning).

Personal Wellbeing Index – School Children (Cummins & Lau, 2005).

The PWI scale contains seven items of satisfaction, each one corresponding to a quality of life domain as: standard of living, health, life achievement, personal relationships, personal safety, community-connectedness, and future security. Each item is concerned with how happy the subject feels with respect to the life domain indicated in the item. To denote this, a scale ranging from 0 (very sad) to 10 (very happy) is used. This scale was reported to have adequate reliability and validity.

The Friendship Quality Questionnaire- Revised (Parker & Asher, 1993).

This is a 40 item Likert scale questionnaire that assesses the subject's quality of friendship with his/her best friend, as perceived by the subject himself/herself. The items of the scale ask the subject to indicate the extent to which that particular item is true of his/her friendship with the

best friend. The scale ranged from not at all true (1) to a little true (2), to somewhat true (3), to pretty true (4), to really true (5). It has 6 subscales: companionship/ recreation, validation/caring, help/guidance, intimate disclosure, conflict/betrayal and conflict resolution. Cronbach alpha was reported for each scale: companionship/ recreation (= 0.75), validation/caring (= 0.9), help/guidance (= 0.9), intimate disclosure (= 0.86), conflict/betrayal (= 0.84) and conflict resolution (= 0.73).

The Teacher Attitude Toward Inclusion Scale (Cullen, Gregory & Noto, 2010).

This instrument was developed to assess teacher's attitudes toward the inclusion of children with disabilities into general education classrooms. The scale has 14 items and the subjects are asked to denote how strongly they agree to each statement given in the item. The scale ranged from 1 (agree very strongly) to 7 (disagree very strongly). It was developed around 3 components of teacher's attitude toward inclusion with their respective Cronbach alphas as follows:

1. Teacher perception of students with disabilities (= 0.803).
2. Beliefs about efficacy of inclusion (= 0.863).
3. Perception of professional roles and functions (= 0.680).

Principal component analysis confirmed the construct validity of this scale.

Procedure

For the purpose of research question 1, various schools in two cities in India (Chennai and Guwahati) were approached for data collection. Consent was taken from the school authorities. The participants for this research question included students with LD studying in special schools, students with LD studying in inclusive schools and students without LD studying in inclusive schools. They were administered the questionnaires in a group setting. They were first given the instruction for each questionnaire and asked to fill the demographic details. Any

queries they had were answered. It was made sure that a teacher who spoke the local vernacular language was present at the time of administering the questionnaire, so that any difficulty faced by the students could be dealt with in the local language as well. They then proceeded to fill the questionnaires themselves.

For the research question 2, teachers of Government and Private schools were approached. Consent was taken from them. Instruction were given to them on how to fill the questionnaire and then they were asked to complete it.

Results

The first study consisted of two primary research questions; the first of which investigated the impact of inclusive education and the second one explored the attitude of regular classroom teachers towards including students with LD in their classroom. There were three parts to the first research question. The first part of these dealt with the impact of inclusive education on the number of friends that students with LD had. For this research question, the total number of friends, number of friends in school and the number of friends outside school were explored. The second part looked into differences in peer relationships with regard to the age of the friends. For this research question number of friends the participants had of the same age, younger to them and older to them were studied.

Results of Research Question 1(A) and 1(B): Number of friends and Age of friends

Comparisons were made between three groups of students viz. students with LD studying in special school, students with LD studying in inclusive schools and students without LD studying in inclusive schools. The data was checked for normality, outliers and the assumption of equality of variance. Since the assumptions for parametric tests (normal distribution of scores) were violated for most of the variables, nonparametric test, that is, Kruskal Wallis Test

was conducted. Homogeneity of variance was checked with the non-parametric version of Levene's test. Table 1 presents the descriptive statistics for the sub-variables of number of friends.

Table 1

Table showing descriptive statistics for the sub-variables of number of friends

	n	Range	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
Total number of friends of students with LD studying in Special Schools	72	27	3	30	11.10	5.426	1.049	1.643
Total number of friends of students with LD studying in Inclusive Schools	75	15	2	17	7.61	3.827	0.7.7	-.114
Total number of friends of students without LD studying in Inclusive Schools	75	19	1	20	8.72	4.187	0.568	0.014
Total number of **friends in school** of students with LD studying in Special Schools	72	19	0	19	6.64	4.576	0.859	0.530
Total number of **friends in school** of students with LD studying in Inclusive Schools	75	17	0	17	5	3.579	1.037	1.184
Total number of **friends in school** of students without LD studying in Inclusive Schools	75	16	0	16	6.63	3.791	0.498	-.046
Total number of **friends outside school** of	72	16	0	16	4.04	4.160	0.995	0.076

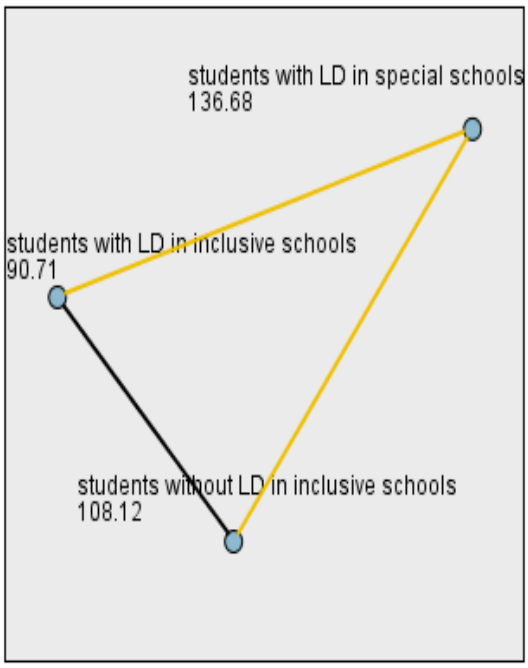
students with LD studying in Special Schools								
Total number of **friends outside school** of students with LD studying in Inclusive Schools	75	11	0	11	2.61	2.927	1.311	1.097
Total number of **friends outside school** of students without LD studying in Inclusive Schools	75	11	0	11	2.09	2.297	1.450	2.420
Total number of **friends of same age** of students with LD studying in Special Schools	72	25	2	27	10.37	5.266	1.122	1.502
Total number of **friends of same age** of students with LD studying in Inclusive Schools	75	12	0	12	4.87	2.743	0.616	0.048
Total number of **friends of same age** of students without LD studying in Inclusive Schools	75	15	1	16	7.52	3.569	0.598	0.138
Total number of **younger friends** of students with LD studying in Special Schools	72	5	0	5	0.53	1.113	2.608	7.014
Total number of **younger friends** of students with LD studying in Inclusive Schools	75	9	0	9	1.28	1.805	2.032	4.838
Total number of **younger friends** of students	75	4	0	4	0.53	0.963	1.907	3.289

without LD studying in Inclusive Schools								
Total number of **older friends** of students with LD studying in Special Schools	72	3	0	3	0.19	0.62	3.502	12.127
Total number of **older friends** of students with LD studying in Inclusive Schools	75	12	0	12	1.45	2.177	2.367	7.393
Total number of **older friends** of students without LD studying in Inclusive Schools	75	4	0	4	0.64	1.048	1.716	2.164

Note. "n" refers to the total number of participants from each group of students.

For the total number of friends, there was a significant difference among the three groups, $H(2) = 19.238$, $p<.05$. Pairwise comparison with adjusted p value showed that there were no significant difference between students with LD studying in inclusive schools and students without LD studying in inclusive schools ($p<.05$, $r = -.14$). However there was a significant difference when students with LD studying in inclusive schools were compared with students with LD studying in special schools ($p<.05$, $r = 0.36$) and also when students without LD studying in inclusive schools were compared with students with LD studying in special schools ($p<.05$, $r = .22$). These results are presented in Figure 2. The data indicates that students without LD studying in special schools had the highest number of total friends, followed by students without LD studying in inclusive schools and students with LD studying in inclusive schools.

Pairwise Comparisons of group of students



Each node shows the sample average rank of group of students.

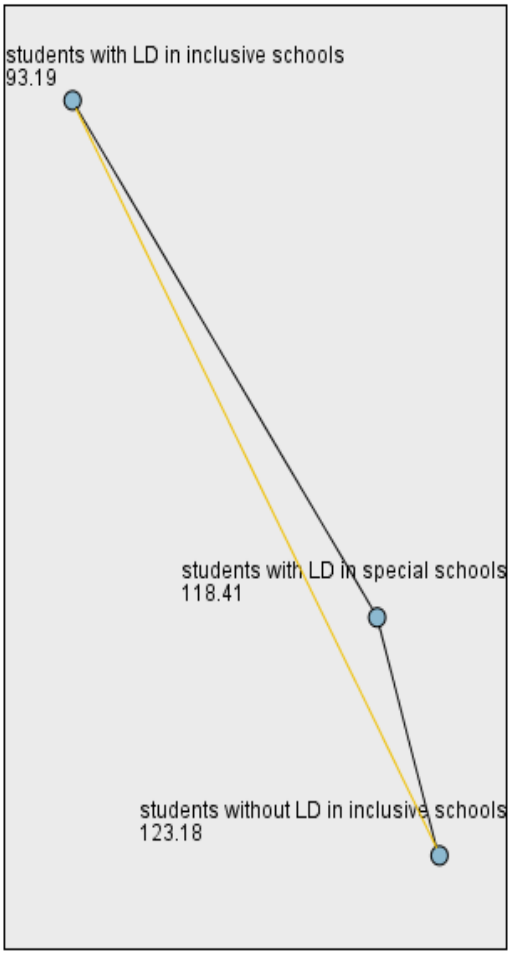
Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
students with LD in inclusive schools-students without LD in inclusive schools	-17.413	10.460	-1.665	.096	.288
students with LD in inclusive schools-students with LD in special schools	45.974	10.569	4.350	.000	.000
students without LD in inclusive schools-students with LD in special schools	28.561	10.569	2.702	.007	.021

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

Figure 2. Figure showing the significant differences between the three groups of students on total number of friends.

With regard to number of friends that the students have in school, there was a significant difference among the three groups, $H(2) = 9.487$, $p<.05$. Pairwise comparison with adjusted p value showed that there was no significant difference between the students with LD studying in inclusive schools and students with LD studying in special schools ($p > 0.05$, $r = 0.2$). There was also no significant difference between students with LD studying in special schools and students without LD studying in inclusive schools ($p >.05$, $r = -0.04$). The only significant difference was observed between students with LD studying in inclusive schools and students without LD studying in inclusive schools ($p<.05$, $r = -0.23$). These results are presented in Figure 3. It could be observed from the data that students without LD had the highest number of friends in school, followed by students with LD studying in special schools and then by students with LD studying in inclusive schools.

Pairwise Comparisons of group of students



Each node shows the sample average rank of group of students.

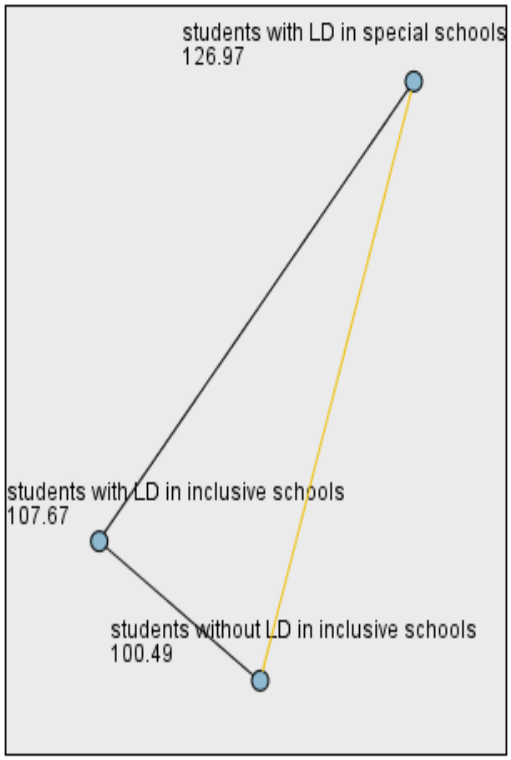
Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
students with LD in inclusive schools-students with LD in special schools	25.223	10.559	2.389	.017	.051
students with LD in inclusive schools-students without LD in inclusive schools	-29.993	10.451	-2.870	.004	.012
students with LD in special schools-students without LD in inclusive schools	-4.770	10.559	-.452	.651	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

Figure 3. Figure showing the significant differences between the three groups of students on number of friends in school.

When the number of friends that the students have outside school was analysed, the difference between the groups was again found to be significant, $H(2) = 6.868$, $p<.05$. Pairwise comparison with adjusted p value showed that there was no significant difference between students without LD studying in inclusive schools and students with LD studying in inclusive schools ($p>.05$, $r = 0.06$). The difference was significant between students without LD studying in inclusive schools and students with LD studying in special schools ($p<.05$, $r = 0.21$). No significant difference was found between students with LD studying in inclusive schools and students with LD studying in special schools ($p>.05$, $r = 0.15$). These results are presented in Figure 4. With regard to this variable, students with LD studying in special schools had the highest number of friends outside school, followed by students with LD studying in inclusive schools and then by students without LD studying in inclusive schools.

Pairwise Comparisons of group of students



Each node shows the sample average rank of group of students.

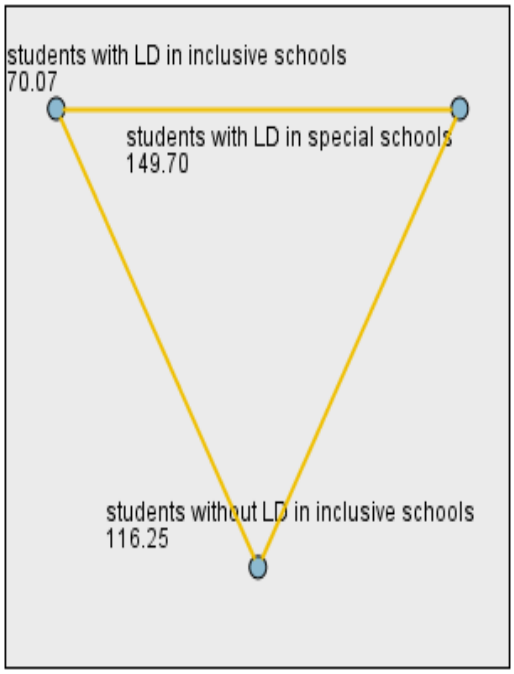
Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
students without LD in inclusive schools-students with LD in inclusive schools	7.180	10.318	.696	.487	1.000
students without LD in inclusive schools-students with LD in special schools	26.479	10.425	2.540	.011	.033
students with LD in inclusive schools-students with LD in special schools	19.299	10.425	1.851	.064	.192

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

Figure 4. Figure showing the significant differences between the three groups of students on number of friends outside school.

Comparison of friends of same age among the three groups resulted in a significant difference, $H(2) = 57.455$, $p<.05$. Pairwise comparison with adjusted p value showed that there was a significant difference among students with LD studying in inclusive schools and students without LD studying in inclusive schools ($p<.05$, $r = -0.36$). The difference between students with LD studying in inclusive schools and students with LD studying in special schools was also significant ($p<.05$, $r = 0.62$). Significant difference was also observed between students without LD studying in inclusive schools and students with LD studying in special schools ($p<.05$, $r = 0.26$). These results are presented in Figure 5. Students with LD studying in special schools had the highest number of friends belonging to the same age group, followed by students without LD studying in inclusive schools and then by students with LD studying in inclusive schools.

Pairwise Comparisons of group of students



Each node shows the sample average rank of group of students.

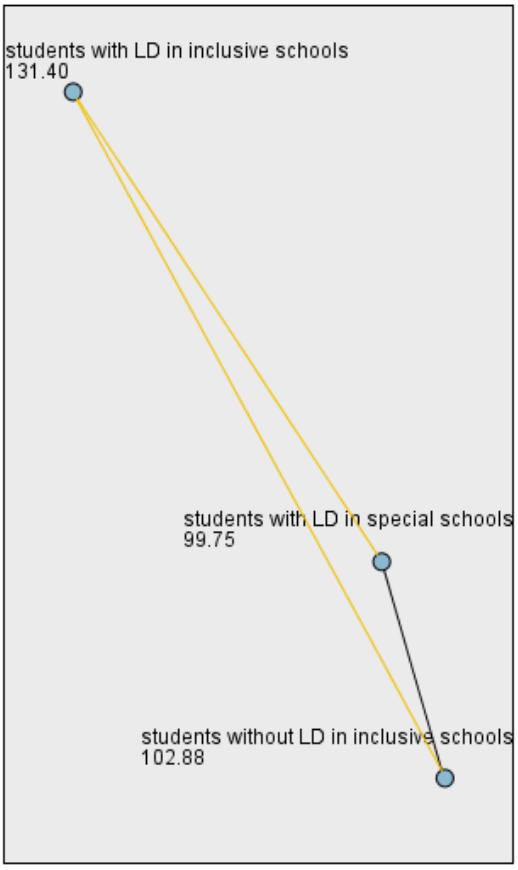
Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
students with LD in inclusive schools-students without LD in inclusive schools	-46.180	10.454	-4.417	.000	.000
students with LD in inclusive schools-students with LD in special schools	79.628	10.563	7.539	.000	.000
students without LD in inclusive schools-students with LD in special schools	33.448	10.563	3.167	.002	.005

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

Figure 5. Figure showing the significant differences between the three groups of students on number of friends of same age.

For the number of older friends, a significant difference was again observed among the three groups, $H(2) = 14.843$, $p<.05$. Pairwise comparison with adjusted p value showed that there was no significant difference between students with LD studying in special schools and students without LD studying in inclusive schools ($p<.05$, $r = -0.03$). The difference between students with LD studying in special schools and students with LD studying in inclusive schools was significant ($p<.05$, $r = -0.29$). Also the difference between students without LD studying in inclusive schools and students with LD studying in inclusive schools was also significant ($p<.05$, $r = 0.26$). These results are presented in Figure 6. Students with LD studying in inclusive schools reported to have the highest number of older friends, followed by students without LD studying in inclusive schools and then by students with LD studying in special schools.

Pairwise Comparisons of group of students



Each node shows the sample average rank of group of students.

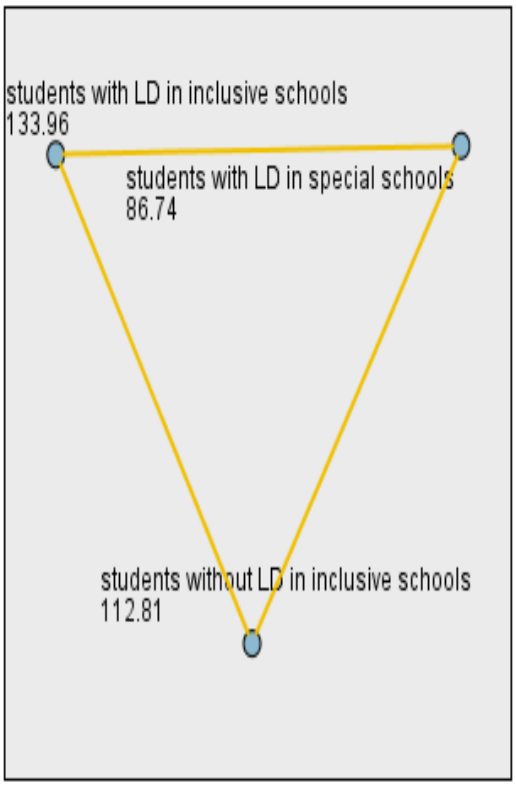
Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
students with LD in special schools-students without LD in inclusive schools	-3.130	9.106	-.344	.731	1.000
students with LD in special schools-students with LD in inclusive schools	-31.650	9.106	-3.476	.001	.002
students without LD in inclusive schools-students with LD in inclusive schools	28.520	9.013	3.164	.002	.005

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

Figure 6. Figure showing the significant differences between the three groups of students on number of older friends.

The number of younger friends was also significantly different among the three groups, $H(2) = 28.665$, $p<.05$. Pairwise comparison with adjusted p value showed significant difference among all the three pairs i.e. between students with LD studying in special schools and students without LD studying in inclusive school ($p<.05$, $r = -0.24$), between students with LD studying in special schools and students with LD studying in inclusive schools ($p<.05$, $r = -0.44$) and between students without LD studying in inclusive schools and students with LD studying in inclusive schools ($p<.05$, $r = 0.2$). These results are presented in Figure 7. For the number of younger friends too, students with LD studying in inclusive schools had reported to have the highest number of younger friends among the three groups, followed by students without LD studying in inclusive schools and then by student with LD studying in special schools. Thus, it seems that students with LD studying in inclusive schools had the highest number of friends who were not the same age as them, compared to the other two groups.

Pairwise Comparisons of group of students



Each node shows the sample average rank of group of students.

Sample1-Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj.Sig.
students with LD in special schools-students without LD in inclusive schools	-26.077	8.831	-2.953	.003	.009
students with LD in special schools-students with LD in inclusive schools	-47.224	8.831	-5.348	.000	.000
students without LD in inclusive schools-students with LD in inclusive schools	21.147	8.740	2.419	.016	.047

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

Figure 7. Figure showing the significant differences between the three groups of students on number of younger friends.

Results of Research Question 1(C): Friendship quality

Apart from the number of friends, the study also looked into friendship quality of the three groups of students to better understand the impact of inclusive education. Friendship quality was measured using Friendship Quality Questionnaire - Revised. Rather than yielding a total score to quantify friendship quality, this scale describes friendship quality in terms of six areas/ sub-scales: companionship and recreation, validation and caring, help and guidance, intimate disclosure, conflict resolution, conflict and betrayal. The average of the items of each sub-scale gave the score for that particular sub-scale. The descriptive statistics for this research question are given in Table 2 to 5.

Table 2

Table showing Descriptive Statistics for the 6 sub-scales of the Friendship Quality Questionnaire-Revised

	N	Range	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
Companionship and Recreation	222	4	1	5	3.89	.806	-.722	.195
Validation and Caring	222	4	2	5	3.91	.700	-.755	.695
Help and Guidance	222	3	2	5	4.00	.639	-.482	-.330
Intimate Disclosure	222	3	2	5	3.68	.781	-.533	.044
Conflict Resolution	222	4	1	5	3.76	.962	-.646	-.086
Conflict and Betrayal	222	4	1	5	2.86	.835	-.107	-.504

Note. "*N*" refers to the total number of participants of the entire study.

Table 3

Table showing Descriptive Statistics of students with LD studying in special school for the 6 sub-scales of Friendship Quality Questionnaire

	n	Range	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
Companionship and Recreation	72	3	2	5	3.96	.825	-.709	-.331
Validation and Caring	72	3	2	5	3.95	.795	-.790	.276
Help and Guidance	72	3	2	5	3.96	.713	-.441	-.685
Intimate Disclosure	72	3	2	5	3.59	.929	-.469	-.754
Conflict Resolution	72	4	1	5	3.81	1.025	-.742	.002
Conflict and Betrayal	72	4	1	5	2.64	.850	.022	-.635

Note. "*n*" refers to the total number of students with LD studying in Special School.

Table 4

Table showing Descriptive Statistics of students with LD studying in inclusive school for the 6 sub-scales of Friendship Quality Questionnaire

	n	Range	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
Companionship and Recreation	75	4	1	5	3.76	.868	-.945	.753
Validation and Caring	75	3	2	5	3.86	.725	-.936	1.258
Help and Guidance	75	3	2	5	3.96	.649	-.528	-.135
Intimate Disclosure	75	3	2	5	3.67	.802	-.544	.305
Conflict Resolution	75	4	1	5	3.64	.967	-.707	.183
Conflict and Betrayal	75	4	1	5	3.22	.813	-.165	-.516

Note. "*n*" refers to the total number of students with LD studying in Inclusive School.

Table 5

Table showing Descriptive Statistics of students without LD studying in inclusive school for the 6 sub-scales of Friendship Quality Questionnaire

	n	Range	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
Companionship and Recreation	75	3	2	5	3.94	.712	-.245	-.957
Validation and Caring	75	2	3	5	3.90	.572	-.352	-.214
Help and Guidance	75	2	3	5	4.06	.552	-.319	-.435
Intimate Disclosure	75	2	3	5	3.78	.578	.077	-.485
Conflict Resolution	75	3	2	5	3.82	.896	-.471	-.601
Conflict and Betrayal	75	3	1	4	2.71	.729	-.434	-.693

Note. "*n*" refers to the total number of students without LD studying in Inclusive School.

To compare the three groups on each sub-scale, the data was analysed using MANOVA. All the assumptions for MANOVA were checked for the given set of data. MANOVA requires that there should be two or more dependent variables which are continuous, the independent variable should consist of two or more categorical groups, there should be independence of observations, and adequate sample size. All these assumptions were fulfilled for the present set of data. Boxplots were used to check for univariate outliers. A few outliers were observed in companionship and recreation sub-scale for students with LD studying in inclusive schools. However, they were retained because they were not extreme outliers. Multivariate outliers were checked using Mahalanobis distance. The maximum value for the Mahalanobis distance was found to be 21.94, which is less than the critical value of 22.46 (for six dependent variables). Since multivariate normality cannot be directly tested,

normality of each of the dependent variables for each of the groups of the independent variable was checked using the Shapiro-Wilk test of normality. This assumption was not fulfilled. However, the skewness and kurtosis values for each dependent variable were found to be within the acceptable range (±1.96). A scatterplot matrix for each group of the independent variable showed that there is a linear relationship between each pair of dependent variables for each group off the independent variable. Homogeneity of variance-covariance matrices was checked using Box's M test of equality of covariance. No multicollinearity was found between the two dependent variables. The Pearson correlation coefficient, r, ranged from .103 to .606 for the dependent variables.

The results of the MANOVA indicated that using Wilks' Lambda there was a significant difference among the three groups of students (Wilks' $\lambda = .834$, F (12,428) = 3.39, $p<.05$).

Table 6

Table showing the results of MANOVA for Friendship Quality

	Value	*F*	Hypothesis *df*	Error *df*
Wilk's Lambda	.834*	3.39	12	428

*$p < .05$

The univariate analysis showed that there was a significant difference among the three groups of students on the conflict and betrayal sub-scale, F (2,219) = 11.485, $p<.05$. These results are shown in Table 7.

Table 7

Table showing Univariate results for the 6 sub-scales of Friendship Quality Questionnaire

Source	Dependent Variable	Sum of Squares	*df*	Mean Square	*F*
Contrast	Companionship and Recreation	1.762	2	.881	1.359
	Validation and Caring	.289	2	.145	.294
	Help and Guidance	.475	2	.237	.579
	Intimate Disclosure	1.239	2	.620	1.016
	Conflict resolution	1.431	2	.715	.771
	Conflict and Betrayal	14.638	2	7.319	11.485*
Error	Companionship and Recreation	141.971	219	.648	
	Validation and Caring	107.944	219	.493	
	Help and Guidance	89.867	219	.410	
	Intimate Disclosure	133.533	219	.610	
	Conflict resolution	203.212	219	.92	
	Conflict and Betrayal	139.565	219	.637	

*$p < .05$

A lower score on this sub-scale indicates a better quality of friendship. The students with LD studying in special schools scored the least in this sub-scale followed by students without LD studying in inclusive schools and students with LD studying in Inclusive Schools scored the highest. From the Contrast results it was evident that when students with LD studying in inclusive schools were compared with students without LD studying in inclusive schools, there was a significant difference ($p<.05$) on the conflict and betrayal sub-scale. No other significant difference was observed among any groups on any of the other sub-scales. Further Post Hoc test (Tukey HSD) revealed that the scores of the students with LD studying in inclusive schools were significantly higher than students with LD studying in special schools

(p<.05) on the conflict and betrayal sub-scale. Students with LD studying in inclusive schools also scored significantly higher scores on conflict and betrayal sub-scale than students without LD studying in inclusive schools (p<.05).

Results of Research Question 1(D): Academic motivation, Academic self-efficacy and Well-being

The fourth part of the first research question looked into the impact of inclusive education on academic motivation, academic self-efficacy and well-being.

Academic motivation was measured using the Self-Regulation Questionnaire – Academic. It has four sub-scales: external regulation, introjected regulation, identified regulation and intrinsic motivation. The external regulation and introjected regulation combine to form the controlled subscale and identified regulation and intrinsic motivation combine to form the autonomous subscale. Thus, academic motivation was measured in terms of controlled and autonomous regulation in this study. The descriptive statistics are given in Table 8.

Table 8

Table showing descriptive statistics for the Controlled subscale and Autonomous subscale of academic motivation

	Controlled Subscale					**Autonomous Subscale**				
	n	Mean	Standard Deviation	Skewness	Kurtosis	*n*	Mean	Standard Deviation	Skewness	Kurtosis
Students with LD studying in special schools	72	2.52	.505	-.133	-.335	72	2.54	.655	.101	-.434
Students with LD studying in inclusive schools	75	2.61	.499	.143	.840	75	2.58	.587	-.517	.041
Students without LD studying in inclusive schools	75	2.72	.499	.685	-.012	75	2.74	.546	-.049	-.173

Note. "*n*" refers to the total number of students in each group.

To look into whether the three groups of participants differed in these two broad forms of academic motivation, MANOVA was performed on the data collected from the participants. All the assumptions for MANOVA were checked for the given set of data. MANOVA requires that there should be two or more dependent variables which are continuous, the independent variable should consist of two or more categorical groups, there should be independence of observations, and adequate sample size. All these assumptions were fulfilled for the present set of data. Univariate outliers were checked using boxplots. A few outliers were found in the controlled subscale for the students with LD studying in inclusive schools. However, they were retained because they were not extreme outliers. Multivariate outliers were checked using Mahalanobis distance. The maximum value for the Mahalanobis distance was found to be 12.659 which is less than the critical value of 13.82 (for two dependent variables). Since multivariate normality cannot be directly tested normality of each of the dependent variables for each of the groups of the independent variable was checked using the Shapiro-Wilk test of normality. This assumption was not fulfilled. However, the skewness and kurtosis values for each dependent variable were found to be within the acceptable range. A scatterplot matrix showed that there is a linear relationship between each pair of dependent variables for each group of the independent variable. Homogeneity of variance-covariance matrices was checked using Box's M test of equality of covariance and this assumption too was met. No multicollinearity was found between the two dependent variables. The Pearson correlation coefficient, *r* was found to be .433.

MANOVA was conducted to look for differences among the three groups on the controlled and autonomous subscale of the Self-Regulation questionnaire- Academic. Using Pillai's trace no significant effect of the groups of students was found on the controlled and autonomous subscale, $V = .034$, $F(4,438) = 1.87$, $p > .05$. These results are presented in Table 9.

Table 9

Table showing the results of MANOVA for academic motivation

	Value	*F*	Hypothesis *df*	Error *df*
Pillai's Trace	.034	1.867	4	438

Further, separate univariate ANOVAs revealed a significant difference among the groups on controlled subscale, F (2,219) = 2.84, p<.05. However, it did not find a significant difference among the groups of students on the autonomous scale, F (2,219) = 2.56, p>.05. These results are presented in Table 10.

Table 10

Table showing Univariate results for Autonomous and Controlled subscales

Source	Dependent Variable	Sum of Squares	*df*	Mean Square	*F*
Contrast	controlled subscale	1.427	2	.713	2.841*
	autonomous subscale	1.680	2	.840	2.359
Error	controlled subscale	54.984	219	.251	
	autonomous subscale	77.983	219	.356	

*p < .05.

From the Contrast Results it was observed that when students with LD studying in special schools were compared with students without LD studying in inclusive schools, there was a significant difference on the controlled subscale (p<.05) and the autonomous subscale (p<.05). The means of these two groups show that students without LD studying in inclusive schools had significantly higher scores on both controlled and autonomous subscale than students with LD studying in special schools. On the other hand, when students with LD studying in inclusive schools were compared with students without LD studying in inclusive schools, there was no significant difference on either the controlled subscale (p>.05) or the autonomous subscale (p>.05). Thus a general trend that was observed in the scores demonstrates that students without LD studying in inclusive schools scored the highest in both

the subscales of motivation followed by students with LD studying in inclusive schools. The students with LD studying in special schools obtained the least scores on both controlled and autonomous subscales of motivation.

The fourth part of the first research question also looked into the variables of academic self-efficacy and well-being. Children's Self-efficacy Scale was used to measure the academic self-efficacy of the students of the three groups. Personal Well-Being Index – School Children was used to measure well-being of students of the three groups. One-way ANOVA was conducted to analyse whether there were differences among the three groups on the variable of academic self-efficacy and well-being. All the assumptions of ANOVA were met for both the variables. There were no outliers. Levene's test was used to establish homogeneity of variance of both academic self-efficacy and well-being. The skewness and kurtosis values of scores within the groups were found to be within the acceptable range. The descriptive statistics for academic self-efficacy are presented in Table 11 and descriptive statistics for well-being are presented in Table 12.

Table 11

Table showing descriptive statistics for Academic Self-efficacy of the three groups of students

	Students with LD studying in Special Schools	Students with LD studying in Inclusive Schools	Students without LD studying in Inclusive schools
n	72	75	75
Range	6	6	6
Minimum	4	3	4
Maximum	10	9	10
Mean	6.78	6.71	7.92
Standard Deviation	1.576	1.496	1.459
Skewness	-.021	-.475	-.743
Kurtosis	-.683	-.034	-.128

Note. "*n*" refers to the total number of participants in each group.

Table 12

Table showing descriptive Statistics for Well-being of the three groups of students

	Students with LD studying in Special Schools	Students with LD studying in Inclusive Schools	Students without LD studying in Inclusive schools
n	72	75	75
Range	6	6	6
Minimum	4	4	4
Maximum	10	10	10
Mean	7.74	7.32	7.80
Standard Deviation	1.332	1.275	1.241
Skewness	-.527	-.308	-.653
Kurtosis	.078	-.375	.095

Note. "*n*" refers to the total number of participants in each group.

The results of ANOVA showed that there was a significant effect of the groups of students on academic self-efficacy, F (2,219) = 15.16, p<.05, r = 0.35. These results are presented in Table 13.

Table 13

Table showing the results of ANOVA for Academic Self-efficacy

	Sum of Squares	*df*	Mean Square	*F*
Between Groups	69.160	2	34.580	15.161*
Within Groups	499.511	219	2.281	
Total	568.671	221		

*p < .05.

A Tukey post hoc test revealed that the academic self-efficacy of students without LD studying in inclusive schools was significantly higher than students with LD studying in special

schools (p<.05) and also students with LD studying in inclusive schools (p<.05). No significant difference was observed between students with LD studying in special schools and students with LD studying in inclusive schools. Since the sample sizes were slightly different, Gabriel's procedure was also conducted as part of the post hoc analysis. It also revealed similar results. The students without LD studying in inclusive schools scored higher on academic self-efficacy than students with LD studying in special schools (p<.05) and also students with LD studying in inclusive schools (p<.05).

The well-being of the three groups of students was also analysed using ANOVA. Results indicated a significant difference among the three groups of students on their well-being scores, F (2,219) = 3.08, p<.05, r = 0.17. These results are presented in Table 14.

Table 14

Table showing the results of ANOVA for well-being

	Sum of Squares	*df*	Mean Square	*F*
Between Groups	10.149	2	5.074	3.084*
Within Groups	360.306	219	1.645	
Total	370.455	221		

*p < .05.

Further post hoc test (Tukey's test) showed that students without LD studying in inclusive schools scored significantly higher on well-being than students with LD studying in inclusive schools (p<.05). The Gabriel's procedure also illustrated the same result with students without LD studying in inclusive schools obtaining significantly higher scores on well-being than students with LD studying in inclusive schools. No such difference was observed for students with LD studying in special schools.

Results of Research Question 2: Attitude of teachers

The second Research Question of this study looked at the attitude of regular classroom teachers towards including students with LD into their classrooms. For this purpose, the Teachers Attitude Towards Inclusion Scale (TATIS) was used on 257 teachers from Private and Government schools. Apart from a total raw score this scale also yields the scores of three factors namely, attitude toward students with disabilities in inclusive settings, beliefs about the efficacy of inclusion and beliefs about the professional roles and responsibilities. The data was checked for normality, outliers and the assumption of equality of variance. The z score values for skewness and kurtosis for all the variables were found to be within the permissible range of +/-2.58 for a sample size greater than 200 (Ghasemi & Zahediasl, 2012). Boxplots were plotted for the data and it was found to have four outliers. However, it was decided to retain the outliers, since it was a Likert Scale where an extreme score may not really be an outlier (Gaskin, 2016). To check the assumption of equality of variance, Levene's Test was conducted. Table 15 and 16 present the descriptive statistics generated by the sample on TATIS and its constituent factors. The tables display the mean scores with standard deviation, as well as maximum and minimum scores obtained. The skewness and kurtosis value for the entire data on the total raw score on TATIS are also included.

Table 15

Table showing the descriptive statistics on TATIS obtained by the participants, Private school teachers and Government school teachers

	Total raw score on TATIS	Total raw score on TATIS of Private school teachers	Total raw score on TATIS of Government school teachers
N	257	185	72
Mean	50.11	49.45	51.82
Standard Deviation	6.85	7.11	5.84
Range	43	37	34

Minimum	30	30	39
Maximum	73	67	73
Skewness	-.282	-.377	.123
Kurtosis	.577	.544	1.629

Table 16

Table showing the descriptive statistics obtained by Private and Government school teachers on the three factors of TATIS

	Total raw score on Factor 1 (Attitudes toward student with disabilities in inclusive settings)		Total raw score on Factor 2 (Beliefs about the efficacy of inclusion)		Total raw score on Factor 3 (Beliefs about professional roles and responsibilities)	
	Private school teachers	Government school teachers	Private school teachers	Government school teachers	Private school teachers	Government school teachers
Mean	21.03	22.94	16.77	17.13	11.64	11.75
Standard Deviation	4.462	3.512	4.118	2.813	4.775	3.125
Range	27	16	20	13	22	15
Minimum	6	16	7	9	4	6
Maximum	33	32	27	22	26	21
Skewness	-.107	.142	-.582	-.455	1.04	1.17
Kurtosis	.100	-.145	-.007	-.063	1.74	1.77

Figures 8 and 9 show the frequency distribution and percentage frequency distribution for the Total score on TATIS obtained by the teachers. Lower raw scores on TATIS mean that the respondent's attitudes and beliefs are highly supportive of inclusion. The scores on this scale can range from 14 to 98, with 42 being the mid-point. As is evident from the graphs most of the participants have scores higher than 42 in this scale. Out of the entire sample only 10.9% has scores below 42 and the rest 89.1% has scored higher than 42. Also, the overall mean obtained on TATIS is 50.11, which is higher than 42 (the mid-point for the range of scores on TATIS). This does not reveal a favorable attitude of the teachers towards including students

with LD in their classrooms. Rather, it suggests that the participants are more supportive of other educational systems where the students with LD receive special educational help.

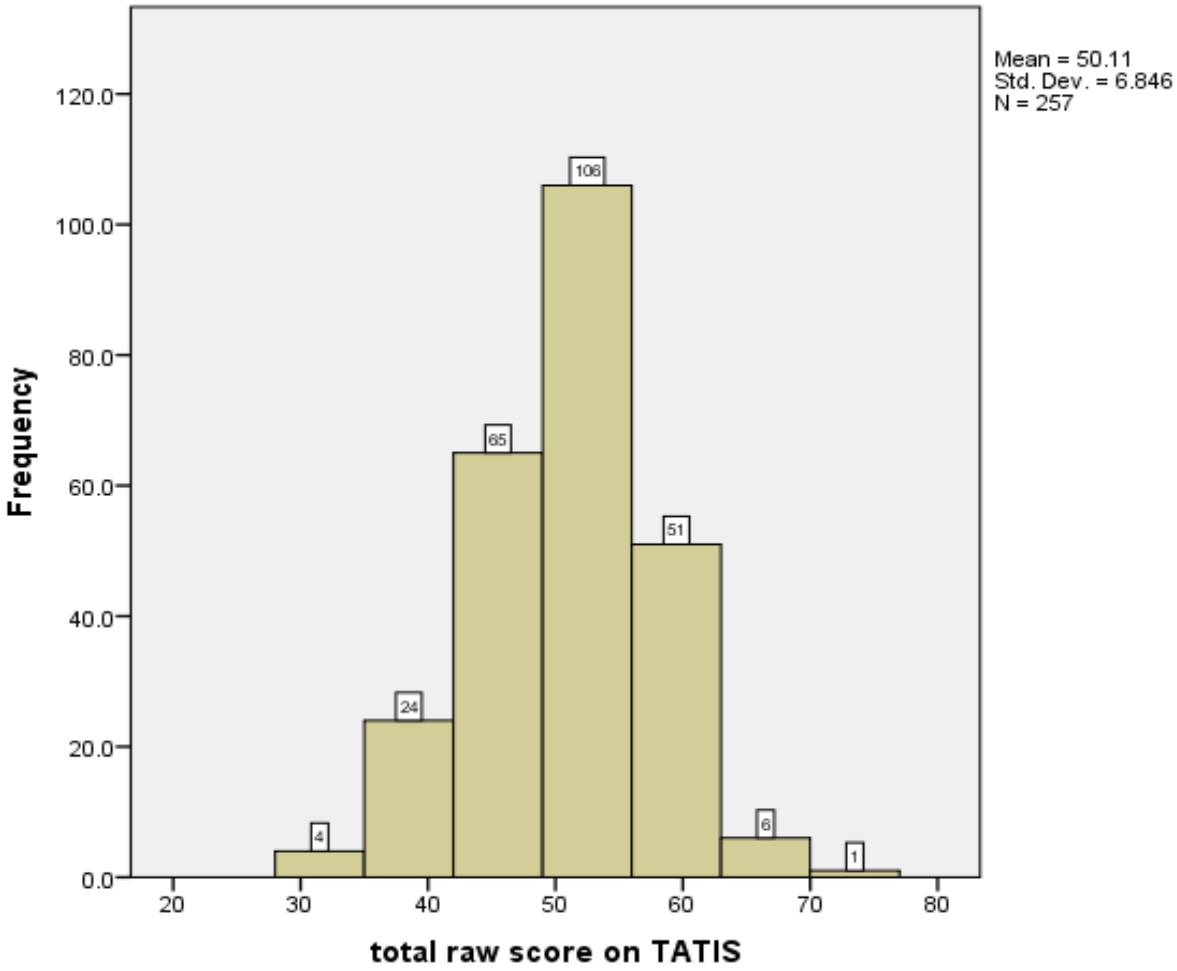


Figure 8. Figure showing the frequency distribution of raw scores of all the participants on TATIS.

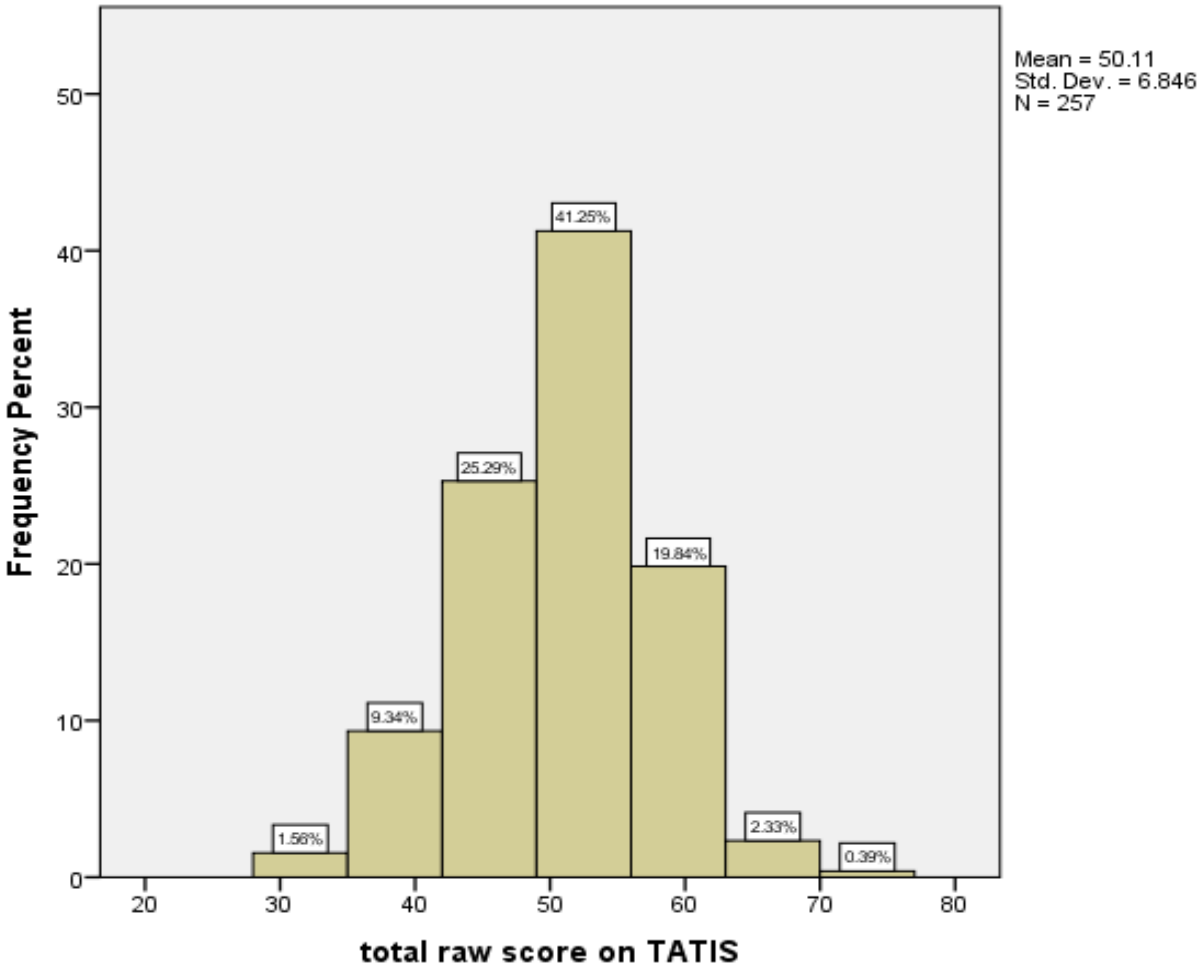


Figure 9. Figure showing the frequency percentage distribution of raw score of all participants on TATIS.

The mean score obtained by Private school teachers on TATIS is 49.45, while the mean obtained by Government school teachers is 51.82. Thus, both scores being greater than 42 denote a not so favourable attitude of teachers of both types of schools towards including students with LD in their classroom. Figure 10 shows the frequency percentage distribution of total score on TATIS obtained by teachers of Government schools and Private schools. Comparison of the two graphs shows that most of the Government school teachers (95.83%) have scored above 42, while only a handful of them have scored lower than 42 (4.17%). On the other hand, with regard to Private school teachers, a greater number of them have scored below 42 (13.51%) as compared to Government school teachers. Also, lower percentages of

them have scored above 42 (86.49%) as compared to Government school teachers. This is indicative of the result that Private school teachers hold a slightly more positive attitude toward including students with LD in their classroom than the Government school teachers.

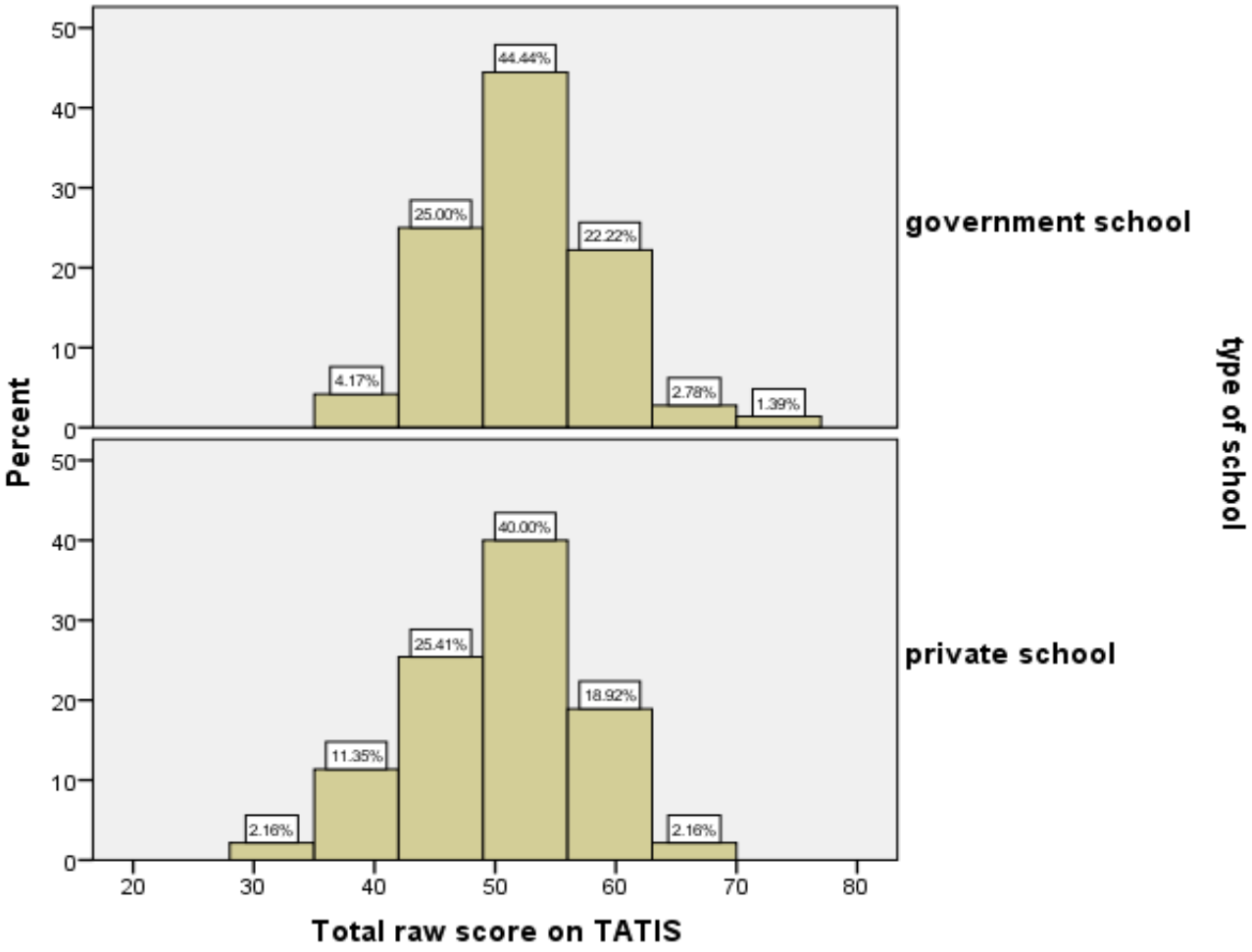


Figure 10. Figure showing the frequency percentage distribution of raw score on TATIS obtained by teachers of Government schools and Private schools.

Independent t-test was performed to further analyse the difference in scores obtained by Government and Private school teachers on TATIS. On average, the teachers from Government schools obtained a higher total score on TATIS (M = 51.82, SE = 5.837), than the

teachers from Private schools (*M* = 49.45, *SE* = 7.105). This difference, was significant *t* (255) = -2.519, *p* = .012, *r* = 0.15.

Independent t tests were also performed for the three factors of TATIS to analyse the difference (if any) in scores obtained by teachers of Government schools and Private Schools on the three factors. The first factor of the scale is "Attitudes toward student with disabilities in inclusive settings". On this factor, the Government school teachers obtained a higher score (*M* = 22.94, *SE* = 3.512), than the Private school teachers (*M* = 21.03, *SE* = 4.462). This difference was found to be significant, *t* (255) = -3.262, *p* = .001, *r* = 0.2.

The second factor of this scale is "Beliefs about the efficacy of inclusion". On this factor too, the Government school teachers obtained a higher score (*M* = 17.13, *SE* = 2.813), than the Private school teachers (*M* = 16.77, *SE* = 4.118). However, this difference was found to be non-significant, *t* (255) = -0.667, *p* = .505, *r* = 0.04.

A similar trend was observed for the third factor which is "Beliefs about professional roles and responsibilities". The score obtained by Government school teachers was only slightly higher (*M* = 11.75, *SE* = 3.125), than the private school teachers (*M* = 11.64, *SE* = 4.775). This difference too, was not found to be significant, *t* (255) = -.176, *p* = .861, *r* =0.01.

Discussion and Implications

Discussion of Research Questions 1(A) and 1(B): Number of friends and Age of friends

In order to understand the impact of inclusive education on the dynamics of peer relationships, the three groups of students were compared on the various sub-variables – total number of friends, total number of friends in school, total number of friends outside school, total number of friends of same age, total number of older friends, total number of younger friends. Significant differences were found among all the groups on all the sub-variables. The results

showed that students with LD studying in special schools had significantly higher total number of friends than students with LD studying in inclusive schools. They also had higher number of friends outside their school. Also, students without LD studying in inclusive schools had significantly higher number of friends in school than students with LD studying in inclusive schools. The results point in the direction that students with LD studying in inclusive schools have fewer friends. What is more significant is that they had fewer friends in schools than their peers without LD and their friends are not the same age group as them.

With respect to number of friends, there have been conflicting findings in the previous works. A number of studies have found no difference between students with LD and students without LD (such as Vaughn et al., 1996; Juvonen and Bear, 1992). Other studies (like Tur-Kaspa et al., 1999; Vaughn and Elbaum, 1999) have found that students with LD have fewer friends than students without LD. However, if we look into the group of students with LD studying in special schools, they had significantly higher total number of friends than students with LD studying in inclusive schools. In a special school there is an implicit understanding among the students that all of them have some sort of difficulty. There is a homogeneity among them. Therefore, there is no marginalization on the basis of any difficulty/disability. Farmer and Farmer (1996) mention that students with LD tend to form friendships with peers with shared characteristics. In a special school students get more opportunity to perceive these shared similarities. This is not so in a mainstream/inclusive classroom, where students of different abilities are present. In such a setting where normally achieving students are the norm, a students with LD stands out as being different from the others. This may make it difficult for them to build and maintain friendships. Hence the students with LD studying in special schools have a larger social circle than students with LD studying in inclusive schools.

Students with LD tend to have more friends who do not attend the same school as them (Wiener and Schneider, 2002). In the current study, students with LD studying in special

schools also reported to have greater number of friends outside of schools compared to the other two groups. These students are engaged in a lot of extra-curricular activities. They attend a lot of classes for these activities outside of regular class hours. Hence, they also get the opportunity to make friends outside of the school premises. However, it is also possible that some of these relationships are very casual so as not to be deemed as friendship. This might lead to the inflated number of friends that they have outside of schools. According to Wenz-Gross and Siperstein's (1997) findings, students with LD tend to lean on the members of their family more for any kind of support. These members too become a part of their support system and can be considered as friends by them. This could be another reason why students with LD studying in special schools had greater number of friends and also greater number of friends outside school, compared to the other two groups of students.

The present findings also showed that students without LD studying in inclusive schools had significantly higher number of friends in school than students with LD studying in inclusive schools. This is indicative (albeit indirectly) of the fact that students with LD experience greater peer rejection or are neglected more than students without LD. The number of names that they nominated as being their friends was lesser than those without disabilities, even though the respective participants of both the groups were from the same class and studying in the same school. This shows that they are less accepted than their peers without disabilities. Tur-Kaspa et al., (1999) found that over the period of one school year the number of reciprocal rejection of students with LD increased, while, the number of reciprocal friendships decreased. Other studies have found that students with LD are often left to play alone and report to have lower social self-efficacy and lower social acceptance (Gottlieb et al., 1986, Gresham et al., 1988). These studies in part lend support to the present findings where students with LD tend to have fewer friends (especially in school). According to the research findings of Asher and Taylor (1981), Stanovich et al., (1998) (as cited in Pavri and Luftig,

2000) students with LD experience lesser social acceptance by their peers without disabilities. Gresham and Reschly (1986) claim that there are consistent evidence to show that students with LD in all elementary grades are not as well accepted and more rejected than students without disabilities in the regular classroom. Bruiinks (1978) found that students with LD are less accepted and are not accurate in perceiving their peer status. Siperstein et al., (1978) also found that children with LD were less popular among their peers. It has also been reported that when students with LD initiate communication with teachers and peers, they are more likely to be ignored than children without disabilities (Bryan and Wheeler, 1972; Bryan, 1974). It seems in the case of the present sample of students with LD studying in inclusive schools too, they are not socially accepted by their peers without disabilities. Since they feel the unacceptance, they did not have as many names of friends to report as their peers without LD, even though they were in the same educational setting. Although they spend most of their school hours with their peers in the same classroom, they have the access to certain accommodations and/or remedial help. As a result of this they may "suffer from some stigma resulting from being labeled or treated as a special education problem" (Bryan, 1974, p. 34). Their lower academic achievement in school may be another factor leading to the ill-effects of being labeled as a "student with LD". When students with disabilities are interviewed about their experience of being in an inclusive setting, they report that it is embarrassing for them to leave their classes for specialized support and it led to them being ridiculed by their peers (Salend and Duhaney, 1999). In a classroom academic achievement is one of the factors which can determine the popularity of a student. Students with LD certainly fall short in this dimension. Their popularity is marred by their lack of achievement in academic tasks. Gresham and Reschly's study (1986) found that teachers, parents and peers insisted that children with LD in mainstream schools show poor social skills and deficits in interpersonal behavior. This apparently makes them less desirables as friends and partners and decreases the likelihood of them being accepted by their

peers without disabilities. It thus seems that the social problems of students with LD as evident from the results of the present study has not benefitted from the provisions of inclusive education.

Comparison of friends of same age showed that there was a significant difference among all the groups, with students with LD studying in special schools having the highest number of friends of same age, followed by student without LD studying in inclusive schools and then by students with LD studying in inclusive schools. However, students with LD studying in inclusive schools had significantly higher number of older and younger friends as compared to the other two groups. In sum, the students with LD studying in inclusive schools had more friends who were not of the same age as them. Earlier research has found that students with LD have more number of younger friends (Wiener and Schneider, 2002). The results of the present study show that students with LD had more number of younger as well as older friends. This was not true for the students with LD studying in special schools. Thus, earlier research only lend partial support to the current findings. According to Wiener and Sunohara (1998) mothers of students with LD see them as being socially immature (as cited in Wiener, 2004) and so choose friends who are younger to them. In case of the participants with LD of this study who were studying in inclusive schools, their schedule in school can be one reason for the difference observed. In most of the schools in India these students are pulled out of their regular classes for a few hours in a week for remedial/special education support. It is very much possible that these classes have students of other grades too. Therefore, they get an opportunity to interact with other students who may either be older or younger to them. It is so because, although they may be going to different grades based on their age, their academic difficulties may be similar. The grouping is done not on the basis of age but the problems that the students face. They may be different in age but similar in their academic achievement or difficulties/issues. Similarity is a crucial cornerstone of friendship (Wiener and Schneider,

2002). Thus, it can be assumed that the choice of friends who are not the same age is based on similarity rather than any other factor. Further, these friendships are not present inside the classroom, but outside of it. Although it is an adaptive response for the students with LD studying in inclusive schools, it is happening when the students are being pulled out of the classrooms. Thus, it beats the whole purpose of inclusive education. Students with LD studying in inclusive schools are getting more positive opportunities to interact and build friendships when they are not with their same grade peers but when they are in a multiage group. Whereas, the students with LD studying in special schools have not reported to have as many friends who are not the same age as them. They are not pulled out of their classrooms for extra educational help. They have most interaction with friends who are the same age as them because they are with them all throughout their class hours. Even though researchers argue that inclusive classrooms can enhance the social status of students with LD because it provides more prospect for positive communication with peer (Estell et al., 2008), the actual reality can be different. The extra classes (which are meant only for students with LD and they are removed from their regular classes for them) are giving them the opportunity to make friends. Thus, instead of being in an inclusive classroom, being pulled out of it (which negates the concept of inclusion) actually seems to be helping the students with LD studying in inclusive schools to build a better social life.

Discussion of Research Question 1(C): Friendship quality

Intimate disclosure and sensitivity become the central qualities of friendship in adolescence (La Greca, 1997). The students with LD studying in inclusive schools scored more on the conflict and betrayal sub-scale compared to both the other groups. There was no such difference between the students with LD studying in special school and students without LD studying in inclusive schools. This denoted that students with LD studying in inclusive schools have more

often felt betrayed in terms of their intimate thoughts and secrets than the other two groups of students. Further, they experience more discord with their friends as they perceive that they are not paid enough attention by the friends. In other words their friends are not sensitive to them, their wishes and needs. Thus, they are likely to be ignored. Stone and La Greca (1990) found that students with LD were overrepresented in rejected and neglected sociometric groups. Vaughn et al., (1996) also added that students with LD were more likely to be rejected than average/high achieving students. Students with LD also scored lower on social attraction and higher on social rejection than comparison children (Bryan, 1976). Students with LD also experience greater instances of peer victimization than their peers without LD (Baumeister et al., 2008). Moreover, they are less accepted by their peers and they are less competent than their peers without disability at perceiving their status in a social group (Bruininks, 1978).

All these previous studies point to the fact that students with LD experience greater instances of rejection. This indicates that there is more conflict in their peer relationships of these students. In the present study, students with LD studying in inclusive schools reported similar experiences as portrayed in the previous researches. Researches have repeatedly shown that students with LD are more frequently rejected and neglected than students without LD (Wiener and Schneider, 2002). The higher scores obtained by the students with LD studying in inclusive schools on the conflict and betrayal sub-scale is another manifestation of these repeated findings.

A study by Wiener and Schneider (2002) also found that the friendships of students with LD are marked by greater conflict than students without LD. According to Vaughn and Elbaum (1999) and Wenz-Gross and Siperstein (1997) (as cited in Wiener and Schneider, 2002), friendships of students with LD are not more conflict-ridden as compared to students without LD, which is contradictory to the earlier mentioned result. However the present study too has found results similar to Wiener and Schneider (2002). Hoyle and Serafica (1988) point

out that students with LD have “less developed concepts of conflict resolution than children without LD” (as cited in Wiener and Schneider, 2002, p. 138). It is interesting to note here that the three groups of students did not differ in the sub-scale of conflict resolution, but, only in conflict and betrayal. Thus, even though the three groups of students have similar perceptions of how they settle any conflict among themselves and their friends, only the students with LD studying in inclusive schools feel that their friendships bear tensions and conflicts. According to Wiener and Sunohara (1998), the difficulties of students with LD in reading social cues and in controlling their impulses is the reason behind the conflicts they face in their peer relationships. Studies have also found that students with LD are more prone to experiencing negative emotions and are less skilled at regulating their emotions than students without LD (Bryan et al., 2004). Both these factors are likely to affect their responses towards others and also interpretation of other’s responses towards them (Bryan et al., 2004). These factors can have negative impact on the peer relationships because the presence of negative affect in a person influences the attitude and behavior of others towards him/her. People usually try to befriend others who are happy and cheerful and not sad, lonely or depressed. Students with LD have been found to feel lonelier than other students (Pavri and Luftig, 2000). The existence of negative affect in these students probably makes them less popular, leading to more conflicts in friendships. Apart from that, a number of studies students with LD have also been found to exhibit other negative and less skilled social behaviors (Bryan et al., 2004), such as difficulty in starting and maintaining a conversation, aggressive, withdrawn and disruptive behavior. These negative social behaviours can also be one of the underlying factors of the assertion that students with LD tend to get mad at, have fights with and argue a lot with their best friends. The high scores on conflict and betrayal sub-scale is a reflection of this aspect. A meta-analysis by Lapadat (1991) found that students with LD have pragmatic deficits in conversation across settings, conversational partners, age groups, and types of pragmatic skills measured. These

deficits can be assigned to the language deficits that these students also have. These language and pragmatic skill deficits are another reason that may contribute to the high scores on conflict and betrayal. This is because when a person lacks skills as the ones with LD, they are less likely to be adept at making and sustaining conversations and narratives, delivering their messages and opinions and comprehension of the dialogue. In such circumstances there is bound to be misunderstandings, disputes and arguments. This leads to conflicts and hence, the high scores on this sub-scale of Friendship Quality Questionnaire – Revised.

It is interesting to note here that although previous studies had brought out the social skill deficits and other difficulties of students with LD, in the current study such negative outcomes were observed only with regard to the students with LD studying in inclusive schools. The students with LD studying in special schools did not perceive their friendship with their friend as conflict ridden like the students with LD studying in special schools. It is possible that students with LD studying in inclusive schools are rejected by their friends in schools and therefore, they experience more conflicts in their friendships. However, it is equally possible that given their lack of skill in making accurate perceptions of social situations (as observed in the previously mentioned studies), they misinterpreted certain situations as filled with dispute. Hence, they rated their friendships as more conflicted. Pavri and Luftig (2000) found that students with LD in fully inclusive schools felt lonelier and were rated as more controversial and less popular than their peers without disabilities. The findings of the present study too revealed that students with LD studying in inclusive schools had fewer numbers of total friends and friends in schools as compared to the other two groups of students. In the light of these findings, it seems that students with LD experience true conflict in their relationships with their friend. Their quality of friendship is poorer compared to the other two groups of students. The difference between the three groups of students was their placement in the type of educational setting based on the presence or absence of LD. Thus, it seems that the placement of students

with LD in either special schools or inclusive schools plays a part in the quality of their friendship. In a special school setting, students with different forms of difficulties/disabilities study under the same roof. It is evident to them that they are all similar to one another with regard to some difficulty. The academic performance too is similar across all students. However, that is not so in inclusive classrooms. Academic performance is one of the defining factors that determine a student's standing in the classroom among his/her peers. A student with LD has considerable trouble with academic performance. This makes him/her a little different from the rest of the class. Also, in India in most schools students with LD go for remedial classes for extra support. This makes the difference even more prominent. Therefore when they seek friendship with other students without LD, they may be rejected or simply ignored. Students with LD may also have a cognitive social deficit which doesn't enable them to accurately interpret social cues (Pavri and Luftig, 2000). All these factors apparently culminate into the students with LD to experience more conflict in their friendships. It appears that the placement of these students into special and inclusive schools also has a role to play in the quality of friendship. Hence, it is not just important to put a student with LD in a regular classroom hoping for positive outcomes. The social outcomes also need to be looked at so that inclusion is effective.

Implications of Results of Research Questions 1(A), 1(B) and 1(C): Number of friends, Age of friends and Friendship quality

Positive social relationships are an important contributing factor for adjustment and build resilience in children. The presence of healthy social relationships can also lessen the risk of problematic behavior (Wiener, 2004). The findings of this study do not present an exciting picture for students with LD studying in inclusive schools in terms of positive social relationships. The process of inclusion should be looked in the light of these findings and other

research works. Wiener and Tardiff's (2004) work showed that when students with LD attending different special education placement groups were compared, students going to more inclusive settings had better outcomes on measures like self-perception of mathematics competence, problem behavior, better companionship with school friends and loneliness. However, our findings are completely contradicting to these as students with LD studying in inclusive schools did not fare well in most of the sub-variables. Examining the impact of inclusive education and different educational placements is a complex matter warranting investigation of different contexts. Therefore, one of the foremost implication of these results is that a lot remains to be understood in the context of impact of inclusive education. The move towards inclusive education is gaining tremendous momentum with the Government policies too endorsing it. However, researches like these would better inform on the gradations of this system of education and the path that is needed to follow to realize it.

Apart from academic achievements, schools and particularly the teachers need to emphasise on social development of students in general and students with LD in particular. It has been suggested that whatever problems are causing the child to have LD is also affecting his social learning. The social difficulties are another symptom of LD (Bryan, 1974). Therefore, intervention programmes to address these concerns are the definite next step. Wiener (1980) theorized a model of acquisition of peer relationships with the assumption that social deficits arise as a result of social perceptual and social cognitive deficits that are a part of perceptual problems prevalent in LD. Different sub-groups exist among the children with LD based on conceptual, spatial and sequential disabilities and they have different social issues based on the sub-group they belong to. The same study found that children with conceptual and spatial disabilities had more problems in initiating positive peer relationships. It also implied that children with LD can be taught interpersonal, cognitive and problem-solving skills to help them establish healthy peer relationships and enhance their emotional adjustment. In the presence of

such findings it becomes imperative that interventions to ameliorate the social difficulties associated with LD be developed. Based on the sub-groups and the social issues that accompany it, certain strategies should be charted out because a healthier social repertoire would mean a better adjusted child.

Apart from interventions, teachers and parents of students with LD can also make a great impact on improving the social deficits of these students. Teachers should foster a classroom environment which is compatible with students with diverse learning needs. Such a classroom should teach students without disabilities to embrace their peers with disabilities. Simple acts such as equal attention and interaction with student with LD, group activities on part of the teachers can be a great help in this regard. At home, parents should also shoulder responsibilities in this line. Parents can make an effort to make their home environment which attracts and welcomes their children's friends. They should also "instruct their children on what is socially appropriate and involve their child among kids having similar interests" (Estell et al., 2008, p. 12).

The greater purpose of inclusive education is to build a more inclusive society where no child is left behind. It is a movement to create schools and other social institution where every learner's needs are respected and children learn from each other's differences (Salend and Duhaney, 1999). Necessary steps need to be taken so that inclusion itself doesn't become a factor for exclusion. To actually realize social inclusion, acceptance of these students with LD must be facilitated by the school authorities, teachers and policy makers.

Discussion of Research Question 1(D): Academic Motivation

The current study also looked at the variables of academic motivation, academic self-efficacy and well-being among the groups of students according to the different schools. The students with LD studying in special schools were found to be scoring significantly lower on both

autonomous and controlled academic motivation. Lee and Zentall (2012) also reported similar findings when they found that students with reading difficulties/ disabilities had lower motivation (both extrinsic and intrinsic) than students without disabilities. According to Sideridis (2009) higher levels of external motivation differentiate between students with and without LD. The findings of the present study were similar to the findings of a study by Grolnick and Ryan (1990) which also found that students with LD scored lower on academic self-regulation than the participants of a control group comprising of students without LD. Studies by Rennick, Lincoln and Chazen (as cited in Grolnick and Ryan, 1990) have found that students with LD show less mastery motivation than students without LD. Ellis (1986) reported that students with LD had lower levels of intrinsic motivation. In addition to that the present study found that students with LD scored lower on controlled or extrinsic motivation as well. Renick and Harter (as cited in Deci et al., 1992) reported that students labelled as LD perceived themselves as being academically less competent compared to their non-labeled peer without any disabilities.

The above mentioned studies are in consonance with the results of the current study pertaining to the difference between students without LD studying in inclusive schools and students with LD studying in special schools. However, contrary to these findings, Pintrich et al. (1994) found no difference between students with and without LD on either of intrinsic motivation, self-efficacy or anxiety. This study too support the findings of the current study where no difference on academic motivation (either intrinsic or extrinsic) was found between students with LD studying in inclusive schools and students without LD studying in inclusive schools. Thus, it seems the placement in the type of school might have a role to play in the academic motivation of students.

The study looked at autonomous (intrinsic) and controlled (extrinsic) motivation as it pertains to Self-Determination theory (SDT). SDT advocates an organismic viewpoint i.e. it

views human beings as active agents who exert influence on their environment. Thus their subjective experiences and interpretations also become important. Students with LD studying in special schools have experienced tremendous hardships in their academic lives. The previous academic failures are bound to leave an impact on them. To make things even more difficult, they were no longer accepted in the mainstream schools that they previously studied. Their issues in learning and academics seem to represent a "vicious spiral of school failure" (Yailagh et al., 2014, p.29). Thus, academics being an area where they experienced repeated disappointments, turned into a field which did not offer any incentive for them to be motivated by.

These findings may also be indicative of the experience of a more controlling and less autonomous academic environment by the students with LD. The label of a "students with disability" is accompanied by not only a stigma but also a belief on the part of the others that these students may not be as competent as the other students without any disability. These beliefs may be internalized by the students with LD leading to a drop in their academic motivation. Further, the absence of any positive feedback and a highly controlling academic environment hinders any fulfillment of the basic psychological needs. Grolnick and Ryan (1990) stated that teachers themselves reported that they were more controlling towards students with LD. This again suggests that students with LD do not enjoy as much autonomy as the others. This is bound to impact their academic motivation and in fact cause them to have lower motivation than students without disability.

Discussion of Research Question 1(D): Academic Self-efficacy

After academic motivation the next variable studied was academic self-efficacy. The results revealed that students with LD, irrespective of the school, had significantly lower academic self-efficacy. Earlier studies have established that students with LD have lower academic self-

efficacy than students without LD (such as Baum & Owen, 1988; Clever et al., 1992; Tabassam & Grainger, 2002). Another study by Yeun (2008) found that Chinese students with LD had lower self-efficacy in learning English and Chinese language skills than their non-disabled counterparts. Aikhomu's study (2015) too found that students with LD had scored lower on measures of self-efficacy, irrespective of the gender of the students.

According to Bandura (1997) mastery experiences are one of the sources of influence on self-efficacy. Mastery experiences were found to be the primary predictor of academic achievement by a study by Loo and Choy (2013). In case of students with LD mastery experiences in the field of academics is often a rare occurrence. The characteristics of the disability itself are such that academic tasks are very challenging and receiving the right kind of support to excel in those tasks is also hard to come by. Apart from repeated failure experiences, the time required for them to master a particular academic skill may also be longer compared to their peers without disability. Therefore, their experience in the field of academics is mostly negative and deflating and lacking in making them feel efficacious. Thus, mastery experience as a source of self-efficacy may not always be present to enhance their academic self-efficacy. Rather, its opposite or the lack of it may degrade their academic self-efficacy. They probably don't enjoy enough instances to perceive themselves as being able to accomplish the academic feats.

According to Bandura (as cited in Shkullaku, 2013) people tend to move away from situations and tasks which they believe lies beyond their capacities. They rather move towards tasks which they believe they can perform successfully. In the present study, the students with LD (studying in both inclusive and special schools) have scored lower on academic self-efficacy than students without LD which indicates that they perceive themselves as not being too adept in academic tasks. This would imply that they would avoid situations and tasks that they believe they are not good at, which in this case are academic tasks. This would thus, also

partly explain the scores on academic motivation obtained by students with LD. They had lower academic motivation than students without LD. Their academic self-efficacy may influence their academic motivation too to some extent. Since they perceive themselves as not having the capacities to excel in academics, they may avoid those academic tasks altogether resulting in low motivation. Gist and Mitchell (1992) reported that self-efficacy beliefs can be determined by other factors such as motivation and the task associated with the belief.

Discussion of Research Question 1(D): Well-being

The third variable that this research question studied was *well-being*. Well-being of the three groups of students was compared and it was found that students with LD studying in inclusive schools had scored significantly lower on well-being compared to students without LD studying in inclusive schools. Support for these findings can only be indirectly sought from previous work. Svetaz et al. (2000) had found that the risk for emotional distress among adolescents with LD was twice than that of adolescents without LD. Students with LD have been found to be at risk for severe depression and suicide (Huntington & Bender, 1993). In another study by Nelson & Harwood (2011) students with LD were found to have higher mean scores for anxiety than students without LD. Heath & Ross (2000) reported that girls with LD had higher levels of scores for depressive symptoms than girls without LD. Karanda et al. (2008) reported that the Health Related Quality of Life (HRQL) of children with LD was compromised for both psychosocial and physical factors of health. The HRQL is further impacted by the presence of co-occurring ADHD as revealed by another study by Karande and Bhosrekar (2009). They found that children diagnosed with LD and co-occurring ADHD had poorer overall psychosocial functioning assessed by parent-reported Child Health Questionnaire. Thakkar et al. (2015) found that children newly diagnosed with LD had a higher risk of being clinically anxious. This did not depend on the gender, presence of co-morbid

ADHD or the type of curriculum the children attended. These studies lend support to the present findings because they too present a scenario where students with LD scored significantly lower in well-being related constructs. Further, Karande et al. (2009) analysed the school related experiences of adolescents with LD and reported that 30% of their participants had negative recollection, 23.3% responded to feeling different from their classmates, 20% reported that they were ridiculed by their classmates about their disability and 23.3% were insulted by their teachers. Factors like these can definitely have a negative impact on the well-being of the students with LD, especially the ones studying in inclusive schools. The students with LD studying in special schools would have different experiences where they may not feel like they are different than the other students because of their disability. Also they probably have a more supportive teaching environment. The teachers in a special school are all trained in the specialised field of special education, while in an inclusive school the regular classroom teacher may not be so. Thus, they may be more empathic and supportive of the students and their needs. Further, it may also be possible that they seek to find happiness from other sources rather than their academic prowess or achievements. Thus, no significant difference in well-being was observed between the students with LD studying in special schools and students without LD studying in inclusive schools.

Implications of the Results of Research Question 1(D): Academic motivation, Academic self-efficacy and Well-being

The students with LD studying in special schools were found to be scoring significantly lower on both autonomous and controlled academic motivation. The students with LD studying in inclusive schools also scored lower than students without LD studying in inclusive schools. A child who has low level of intrinsic motivation in any area may fail to initiate behavior directed towards any activity related to that area. The students with LD (irrespective of the school they

are attending) had shown a low level of intrinsic motivation. Consequently, there is a high probability that their initiation towards any academic related task will be lacking. Their development in such tasks/skills will not happen at an optimal level. A prominent implication of these findings is that focus should also be given to ameliorate these motivational concerns/ deficits as apart of intervention over and above those aiming at remedial education. Such kind of strategies should emphasise on provision of conditions that allow fulfillment of the basic psychological needs (as suggested by SDT). As a result of fulfillment of the needs, intrinsic motivation can be improved. Or alternately extraneous forms of motivation can be changed to more intrinsic forms of motivation.

Academic achievement was found to be consistently predicted by both the types of autonomous motivation i.e. intrinsic motivation and identified regulation (Taylor et al., 2014). There can be a bi-directional relationship between academic achievement and academic motivation. Achievement can itself predict the type and quantity of motivation and motivation in turn can naturally determine academic achievement. Even though academic activities may not be inherently interesting for the students with LD, they are important for their life in general. The use of extrinsic motivators also gain importance in such circumstances. Other researchers (e.g. Eccles and Wigfield, 2002) also propound that extrinsic motivation is also important in the academic domain. Therefore, it seems necessary that assessment of academic deficits of students with LD be accompanied by measurement of motivational variables too and appropriate steps be taken to improve the type and quantity of motivation of these students. The second study of this thesis is aimed at developing and testing an intervention in this same line.

Komarraju and Nadler (2013) stated that students with high self-efficacy in academics are the ones who pursue mastery goals and new knowledge. They also perform better than others. On the other hand, students with low self-efficacy have lower chances of being

motivated by master goals or performance. Thus, the above findings on academic self-efficacy have strong implications for educators and administrators. Understanding of self-efficacy beliefs of students with varied educational needs can enlighten the practice of more engaging and effective educational instructions. Within an inclusive set up students with different abilities and needs would be studying together. To make this system successful care has to be provided that no student is left behind in any manner. Apart from academic achievement, the school is an institution that plays a major role on in building self-related concepts. Self-efficacy can have important consequences on the student's life. Its relation to academic achievement is already well established. Students with LD seem to be lacking in these beliefs. Therefore, it becomes very necessary that this issue be addressed. The inclusive educational system is motivated to bring every student at par with each other. Self-efficacy should be considered another area to work on so that these academic perceptions of students with LD can be enhanced and they can reap the benefits of academically efficacious beliefs.

The findings of the present study bring to light a number of factors which are an area of concern for students with LD, especially if we try to enforce a system of schooling which is inclusive in a true sense. The well-being of students with LD studying in inclusive schools does not seem to be as sound as the others. Interventions for LD need to look beyond the academic domains and focus on these variables too. Teacher training courses should also make the teachers capable enough to target these variables. A little help can go a long way in enabling the students cope well with their issues and difficulties. Svetaz et al. (2000) mention that connectedness to parents and school can act as a protective factor against emotional distress among adolescents with LD. Therefore, schools can provide counselling to recognize and intervene in the emotional issues being dealt with by the students with LD. School needs to be a place where they feel secured in spite of their issues and difficulties. Apart from that parent too will play a big role in helping these students overcome different issues. The school

administrators and teachers can join hands with the parents to provide a supportive environment to the students with LD where they are not identified by the "disability", but by the qualities that make them an individual.

Discussion of Research Question 2: Attitude of teachers

With the objective of finding out the kind of attitude that teachers have towards including students with LD in their classrooms, the Teachers Attitude Towards Inclusion scale was administered to teachers of both Government and Private schools. Since India has two parallel educational systems (private and government), we also looked at whether there were any difference in the attitude of the teachers of these two types of schools. Results of the study indicated that even though the teachers do not have a very positive attitude towards including students with LD in their classrooms, the attitude of Government school teachers is more negative than that of the Private school teachers. There is also difference in their attitude towards the students with LD, whereby, teachers from Government school hold not so favorable attitude towards them.

There is a general lack of awareness in India about LD (Karande & Gogtay, 2010). The LD movement in India only began two or three decades back (Thacker, 2007). Thus, LD is this elusive disability which remains neglected because there is no proper understanding about it. This may be one of the factors which led to the kind of results that were obtained in this study. Since teachers are not very aware about what this condition exactly is, it is difficult for them to conceive of a classroom setting where they may effectively teach students with and without LD alike. One of the major concerns of teachers in working with students with disabilities is that they have not had training in special education and had no experience in teaching students with special needs (Bhatnagar & Das, 2013; Das, Kuyini & Desai, 2013). The teachers without any knowledge about how to serve the needs of students with LD may

have a fear that they won't be able to do justice to their job. Hence, their attitude remains unaccommodating. Large class sizes and lack of support system may only add to this unsupportive attitude.

The Private schools in India are run or governed by individuals and/or private organisations. There is intense competition among these schools and hence, they may have a better support system for their regular classroom teachers. The presence of school counselors and special educators in these schools may enable these teachers to have a better sense of efficacy in dealing with students with LD. However, such support systems are absent in Government schools and they may see these students as only adding on to their workload and responsibilities. This reflects in their negative attitude towards including students with LD. Thus, large class sizes, lack of support system, lack of appropriate training to work with these students and lack of flexibility in curriculum could culminate in teachers having a negative attitude towards including students with LD in their classrooms.

The primary goal of inclusive education is to make children with disabilities feel that they are not left out and are rather an active member of the general education classroom. Hence, the teacher's attitude towards inclusive education plays an important role in determining the success of inclusive education (Kumar & Midha, 2017). Various Government policies and initiatives emphasise on removing attitudinal barriers for the successful implementation of inclusive education. Kumar and Midha (2017) found that the teachers of regular schools have a more favourable attitude towards inclusive education than Special school teachers. Various other studies have found that teachers hold a positive attitude towards inclusive education (Forlin et al., 2007; Bhatnagar & Das, 2014a; David & Kuyini, 2012). Although related to same field, the results of this study do not exactly mirror the results of these previous studies. The previous studies gauged the attitude of the teachers towards inclusive education, while the current study evaluated the attitude of teachers towards a specific disability (LD). Again the

lack of awareness about LD might be one of the factors behind this. Further, the impact of multilinguism can cause confusion in the identification of LD. There is a dearth of screening tools and standardized assessment procedures for LD in India (Thomas & Whitten, 2012). These factors make identification of students with LD even more difficult. And a condition, whose identification itself causes confusion, may not be seen in a favorable light by most teachers. They might not feel that they will be able to meet their academic needs which is a justifiable concern. If they fall short on meeting the demands of the students with LD, the academic standard of the class also goes down because the performance of the students with LD will be reflected in the performance of the class as a whole. All these concerns may ultimately get translated into the teachers having a not so supportive attitude towards including students with LD.

While some studies highlighted a positive attitude of teachers towards inclusive education, some studies have reported a negative attitude too (such as Chhabra, Srivastava & Srivastava, 2010; Forlin & Chambers, 2011; Gaad & Khan, 2007). A few reasons cited in these studies include that inclusive education will lead to lower academic standards (Chhabra, Srivastava & Srivastava, 2010), students with special needs do not possess skill which are required to master the curriculum of regular classrooms and heavy teaching load (Gaad & Khan, 2007). Another study conducted in United States found that teachers were more concerned about including students with learning disabilities, ADHD in their classrooms than other students without disabilities (Cook & Cameron, 2010). These findings lead some support to the results of the current study, which also found a negative attitude among teachers towards including students with LD in their classes.

Implications of Results of Research Question 2: Attitude of teachers

India is home to the second largest educational system in the world, comprising of learners from diverse economic, cultural and linguistic background (Singhal, 2006). In the last few decades, inclusive education has garnered primary focus in the educational scenario in India (Bhatnagar & Das, 2013). It provides learning opportunities and environment where each student has the equal chance to participate (Florian & Linklater, 2010). With inclusive education being more strongly implemented, the schools cannot refuse to include students who otherwise might have been labeled as a "special" child and warranted a separate educational setting. Inclusive education in India is mostly understood as being about students with disabilities and Sarva Siksha Abhiyaan was launched to honor the commitment to Education for All (Singhal, 2006). The Right of Children to Free and Compulsory Education Act (RTE Act) came into force in April, 2010. This act mandated that children in the age group of 6-14 will have free and compulsory education and no child will be held back or expelled. Thus, this act brings into foreground the unique learning needs of children with LD (Karande & Gogtay, 2010). Another significant development in this regard was the inclusion of LD as a Benchmark Disability under the new disability law, The Rights of Persons with Disabilities (RPWD) Act, 2016. This is an important step as it gives LD the necessary recognition it deserves. It will also ensure that children with LD get equal and fair opportunities to achieve their full academic potential. This will hopefully ascertain the timely diagnosis of LD among children and creation of Individualized Educational Program to meet the academic needs of these children. For the successful translation of all these provisions, the attitude of the classroom teachers will play a decisive role, since serving the diverse needs of children with LD now becomes a part of their responsibility. Since research on LD in India is still at an early stage (Sandhu, 2016), the dissemination of knowledge and awareness about it gets hampered. Most regular classroom

teachers have limited knowledge about this condition and it leads to them having a negative attitude about it (Karande et al., 2011), which has also been the finding of this study.

If a negative attitude about including students with LD persists among teachers, it will present a bleak future for students with LD. The classroom teachers are the ones who deal with these students directly and are expected to serve their academic needs. The attitude of teachers and their teaching practices have a major impact on the academic and social achievement of all students, especially on the ones with disabilities (Bhatnagar & Das, 2014a). Thus the success of the students with LD will largely be determined by the attitude of the classroom teachers. In this context the findings of the current study highlights the utmost necessity of changing the teacher's attitudes. The first step in this regard can be providing adequate and proper knowledge about the condition of LD. Teachers need to attend more teacher training workshops which target instructions for children with LD (Karande et al., 2011). Bhatnagar and Das (2014a) found that teachers who have had training in special education had a significant positive attitude towards including students with special needs. Therefore, the curriculum of teacher training and education should necessarily have a course on teaching students with disabilities and especially students with LD. Such training for regular school teachers in special education also improves their self-efficacy about dealing with students with special needs (Bhatnagar & Das, 2014b). Campbell et al. (2003) mention that information based instruction along with structured fieldwork experience can enable the change of attitude of teachers towards disabilities and inclusion. Also awareness and information about one disability can lead to change in attitude towards disability in general. In India, there are only a few parent group/ non-government organisations/ professional agencies to advocate for the rights of students with LD. Hence there is also a need to strengthen such organisations and at the same time to launch more such organisations who can spread awareness about LD. They can also be instrumental in organizing teacher training workshops and events to target a change in the

attitude of the teachers. Unless such steps are taken knowledge and awareness about LD will remain limited. As a consequence, teachers will have an inaccurate idea about students with LD and teaching them in regular classrooms will remain a challenging task for them. The negative attitude of teachers towards including students with LD will prove to be a strong barrier to realize inclusion if not handled at the earliest.

Chapter 4

Study 2: Development and Testing of Intervention for Students with LD

Introduction

Students with LD experience difficulties in academic domain and also other behavioral issues. Major studies have been successful in addressing reading deficits and evidence based studies on other domains are lacking (Alex, 2013). Therefore, an intervention programme which addresses motivational issues in children with LD is needed because motivational issues can exacerbate the difficulties resulting from LD. To fulfill this purpose, the present study was conceptualized to shed light on these aspects, as well as, develop an intervention strategy that can enhance their academic motivation so that it does not intensify their difficulties. To this effect, the tenets of two approaches (namely, Self-Determination Theory and Nurtured Heart Approach) were combined and they were implemented in an attempt to offer a setting which facilitated the satisfaction of three basic psychological needs. The integration of these two different schools of thought is a novel aspect of this study which has not been attempted before. Also, the inclusion of academic self-efficacy and well-being into this study is intended to understand these concepts with regard to students with LD and devise ways to enhance them.

Rationale

Students with LD experience more social, emotional and motivational problems than students without LD (Ayres, Cooley & Dunn, 1990). Difficulties in the scholastic tasks make studying difficult for them. Thus, they lag behind academically. This may lead them to feel less competent. The education system too is mostly concerned with controlling students within a rigid structure and giving rewards and punishments. This adds on to the constraints faced by students with LD because it undermines their sense of autonomy. In educational settings students are in a low-power position because they are much younger and less knowledgeable (Sheldon, Williams & Joiner, 2003) because of which it is very easy to forget about their sense of autonomy and expose them to a more controlling environment. There is also a chance that

students with LD may begin to resent their teachers since they are the one who instruct them and evaluate their performance. This is even more possible if the teachers cannot empathize with them. Thus, when they study it will mostly be due to external motivation. It is not out of volition. It is more so because studying is where their difficulty lies. People usually are not motivated to do tasks which are difficult for them and lead to failure. A lot of literature in special education has been directed towards developing structures that control students through behavior modification, in an effort to improve their academic achievement in schools. In the context of regular students recent interest has been given towards promoting their intrinsic motivation and potential harm of controlling contexts. However, studies on intrinsic motivation of students with LD have been few (Deci et al., 1992). Those that have been conducted have focused on comparison of self-determination or the predictive nature of self-determination on academic achievement. The self-determination theory has been successfully employed to develop intervention programs for physical health problems (like smoking, Diabetes, obesity) and mental health problems (like anxiety, eating disorders, mood and personality disorders). Such intervention strategies in educational settings especially pertinent for students with LD are lacking. Therefore, it is the intention of the present study to develop an intervention program which aims to create a positive environment that supports the satisfaction of the basic psychological needs (of autonomy, competence and relatedness) in order to enhance the academic intrinsic motivation of students with LD.

In India LD is a relatively new and scantly explored area (Verma, 2008) and its understanding is based on western thoughts and literature (Karanth, 2003). Studies in India have focused mostly on the assessment and remediation of language related deficiencies found in students with LD. Although motivational issues are important factors that may even exacerbate the problems, they have not received much attention. Hence this study will not only throw light on this neglected aspect but will also help develop ways to enhance it.

SDT is especially helpful for educational settings because it specifies which kind of motivation can lead to better educational outcomes. Additionally it also outlines the strategies to achieve such motivational states. The proposed intervention program will follow these postulates to develop strategies that can be employed to enhance a better quality of motivation in students with LD. NHA being another approach aimed at modifying undesirable behavior, also lays down certain principles which can improve motivation in children. These principles in the form of the three stands and four recognitions are very much in sync with the strategies laid down by SDT. In other words, the three stands and four recognitions of NHA can also provide the contextual support for the fulfillment of the three basic psychological needs. They are in line with the strategies that have been used in previous studies to enhance the fulfillment of needs. Thus, NHA has been combined with SDT in the present study because it will complement it efficiently.

The quality of motivation that a student has depends partly on the nature of student-teacher relationship (Eccles & Midgley, 1989). Thus, an effective intervention program can offer ways to develop a healthy teacher student relationship which provides opportunities to satisfy the basic psychological needs. This can later be used to inform teacher training programs and also to improve the general educational settings since it has been found that autonomy support behavior can be taught (Reeve, 2009).

Intervention strategies for LD can either have a micro-approach or a macro-approach. A micro-approach identifies the specific problems that the student has and works to remediate them. A macro-approach identifies general principles of learning and education and applies them to all students. The field of LD lacks such a macro approach (Deci & Chandler, 1986). The intended study can fill this gap by generating principles which will benefit not only students with LD but also students without LD.

According to Algozzine et al. (2001) interventions on SDT should look for changes brought about by them. That is why; the constructs of intrinsic academic motivation, academic self-efficacy and well-being have been selected. From the research findings reported earlier, it can be inferred that these constructs are important for favorable academic outcomes. Thus the impact of need satisfaction on them has important implications.

Model for Intervention: Integration of SDT and NHA

The primary aim of this study is to develop an intervention program for students with LD and check its impact on need fulfillment, academic motivation, academic self-efficacy and well-being of the students with LD. The intervention program is based on Self Determination Theory (SDT). Along with SDT, NHA was also incorporated into this intervention program. NHA proposes three stands which form the foundation of this approach along with the recognitions. Theses stands and recognitions fit well with the components that fulfill the satisfaction of the needs as proposed by SDT. Hence, they were integrated to provide conditions to the students with LD so that it supported the satisfaction of the three needs.

SDT is a theory of motivation which is being increasingly used in various behavioral domains, including classroom setting (Niemiec & Ryan, 2009). It is concerned with questions like why people act, how different forms of motivation can lead to different outcomes and what kind of social contextual conditions aid or hinder optimal functioning and well-being via psychological needs (Vieling, Standage & Treasure, 2007).

According to Silva, Marques & Teixeira (2014) the key components as described in other interventions based on SDT (such as Haerens et al., 2013; Reeve, 2009; Su & Reeve, 2011) are as follows:

- Autonomy support: Relevance (by providing clear and meaningful rationale), choice (providing options wherever possible), avoidance of control (by not using coercive, authoritarian or guilt inducing statements).

- Support for competence: Clarity of expectations (collaboratively setting goals and discussing what to expect and what not), optimal challenges (setting goals according to the student's capacities and skills), and feedback (providing clear and relevant feedback).

- Support for relatedness: empathy (by taking the student's perspective), affection (by showing genuine appreciation and concern for the student), dependability (availability in time of need), and attunement (through paying careful attention to and gathering knowledge about the student).

NHA intends to bring changes in the undesirable behavior of children by first initiating changes in the way adults respond to those behaviors (Glasser & Block, 2011). At the heart of NHA are three stands: Refuse to energize negativity, Energize the positive and Clearly but un-energetically enforce limits. To focus on the desirable behaviors, NHA suggests three recognitions viz. active recognition, experiential recognition, proactive recognition and creative recognition. These stands and recognitions combined with the strategies of SDT form the model for this intervention program.

Support for Autonomy: Autonomy indicates the experience of the feeling of being the origin of one's own behaviour and the psychological freedom to take part in any task (Haerens et at., 2013). Support for need for autonomy involves providing rationale for the tasks, providing choice and avoidance of control (Silva, Marques & Teixeira, 2014). These components will be included in the study. Students have to engage in activities which they do not find inherently interesting (Deci & Chandler, 1986). In such cases providing a clear, honest

rationale for the activities is important to change the regulation of those activities into their own (Deci & Chandler, 1986). Giving a rationale for activities induces a sense of self-initiation which provides support for satisfaction of need for autonomy (Ryan & Deci, 2000). Secondly, autonomy support would involve providing choice. Provision of choice enables the experience of more internal locus of causality and increases intrinsic motivation (Zuckerman, Porac, Lathin, Smith & Deci, 1978). In an educational setting, students are expected to follow certain rules. However, whether to follow them or not, depends on the students. Breaking of rules "is almost always a choice" (Glasser & Block, 2011, p. 81). Through proactive recognition we acknowledge the positive choice that the students make (of not choosing to break rules). Hence through proactive recognition we are making it clear that the students do have a choice and when they make a positive choice they are rewarded, thus empowering their choice making behaviour. This recognition enables students to make choices out of their own volition. The choice to follow rules becomes the pathways to success (Glasser & Block, 2011) and the recognition instills that sense of success thereby fulfilling the need for competence. Choices will also be provided through a range of intervention strategies that the students will be given. For any one area of difficulty (e.g. reading) they will have a choice to choose from some tasks that address that particular difficulty. They will not be forced to do any one particular task. Rather, it will be their choice to perform whichever task they want in one particular session. Avoidance of control is very important for autonomy support because controlling situations and statements brings about a more external locus of causality, thus, leading to less intrinsic motivation (Ryan & Deci, 2000). To avoid controlling situations, statements which force the students to perform a task (statements framed with words like "must", "should") should not be used. Also, the concept of "reset" from NHA has a non-controlling element. Reset is a "brief, clean time-out" (Glasser & Block, 2011, p.109) where the teacher withdraws all attention from the student in response to an undesirable behaviour. Thus, a reset is used during intervention

session to avoid control because this element does not force the student to stop engaging in a disruptive behaviour and does not force him to stop doing that. Rather, it provides the student the opportunity to stop the disruptive behaviour on his own. Therefore, these three components from SDT (providing rationale for the tasks, providing choice and avoidance of control) will be used in the intervention to support the need for autonomy. The techniques of NHA (proactive recognition, reset) will be incorporated to supplement them.

Support for competence: Competence indicates the feeling of being efficacious and having the confidence to acquire the desired result in any task (Haerens et at., 2013). Support for need for competence involves providing clarity of expectations, providing optimal challenges and giving positive feedback (Silva, Marques & Teixeira, 2014). One important component regarding support for competence is the communication of clear and specific expectations. This is so because without such outlines they will get puzzled and will not be able to proceed towards the goal to be reached (Haerens et al., 2013). In providing creative recognitions, requests are specifically stated. Proactive recognitions are given when rules are followed or not broken. For that to happen the rules are clearly stated beforehand so that they know what is expected of them. Also, the Stand 3 of NHA (clearly but un-energetically enforce limits) requires that there be absolute clarity about what the limits and consequences are (Glasser & Block, 2011). These enable the students to be perfectly clear of what is expected from them. Thus, these two aspects will be used to provide clarity of what is expected from the students. Children get attracted to tasks which are slightly beyond their present level of capability (Danner & Lonky, 1981). Thus, providing optimal challenges (tasks which are neither too difficult nor too easy for them) form the second component of support for competence. By following the NHA we are not focusing on the problem areas or difficulties. But through the intervention strategies we are creating opportunities for success. We set an array of tasks for the student which are challenging and provide him support to accomplish it.

When that happens, we appreciate and validate the experience of success through the use of recognitions. Provision of positive feedback improves intrinsic motivation (Deci, 1971) as compared to providing no feedback by instilling a sense of effectance which facilitates need for competence. Negative feedback, on the other hand, leads to decrease in intrinsic motivation (Deci & Cascio, 1972) by thwarting the need for competence. Hence, providing positive feedback would form the third component for support for competence. All the recognitions in NHA provide positive feedback. These recognitions are given immediately and are very specific. That makes them more meaningful (Glasser & Block, 2011). All the recognitions give the educator a broad set of possibilities to communicate success (Glasser & Block, 2011). Therefore, they form a component to support the need for competence.

Support for relatedness: Relatedness refers to the feeling of trust, closeness and belongingness in personal relationships (Haerens et at., 2013). Support for the need for relatedness involves showing empathy, affection, dependability and attunement (Silva, Marques & Teixeira, 2014). Showing empathy or acknowledging the student's inner experience induces an internal perceived locus of causality (Koestner, Ryan, Bernieri & Holt, 1984), thus supporting the satisfaction of the need for relatedness. Su and Reeves (2011) mentioned that acknowledging feelings or perspectives of others lead to greater self-determined behaviour. Active and experiential recognitions as proposed by NHA provide a verbal description of what the student is doing along with what qualities or values he/she is showing. This conveys to the student that he/she is noticed and his/her actions and feelings are noticed, understood and acknowledged by the teacher. Hence, they are a way to show empathy. The student "translates this form of being seen and valued as being successful (Glasser & Block, 2011, p.56). Ryan and Grolnick (1986) showed that greater intrinsic motivation was experienced by students who perceived their teachers as warm and caring. Therefore, affection forms the second component of support for relatedness. Through the recognitions and

appreciation, which are at the core of NHA, the teacher can show the love for students. The students receive this affection for their positive behaviour which instills a sense of validation in them. Dependability and attunement refers to the communication that the teacher is interested in the student's life and emotionally supportive of him/her. Leaving a student on his or her own is neglect and not supporting self-determined Thus, all the recognitions as proposed by NHA can form a way to communicate empathy, affection, dependability and attunement, which are the components for the satisfaction of need for behaviour (Deci & Chandler, 1986). Therefore, it is important to communicate to the student that the teacher is involved and there to support him/her whenever needed. By giving the students recognitions and appreciating the positive choices that the students make, it can be shown that the teacher is present and supportive of them. It also communicates that the students are seen, noticed and appreciated. It conveys the message that the teacher takes active interest in the activities and that the teacher cares about the students. This is an act of intense attunement (Glasser & Block, 2011). relatedness.

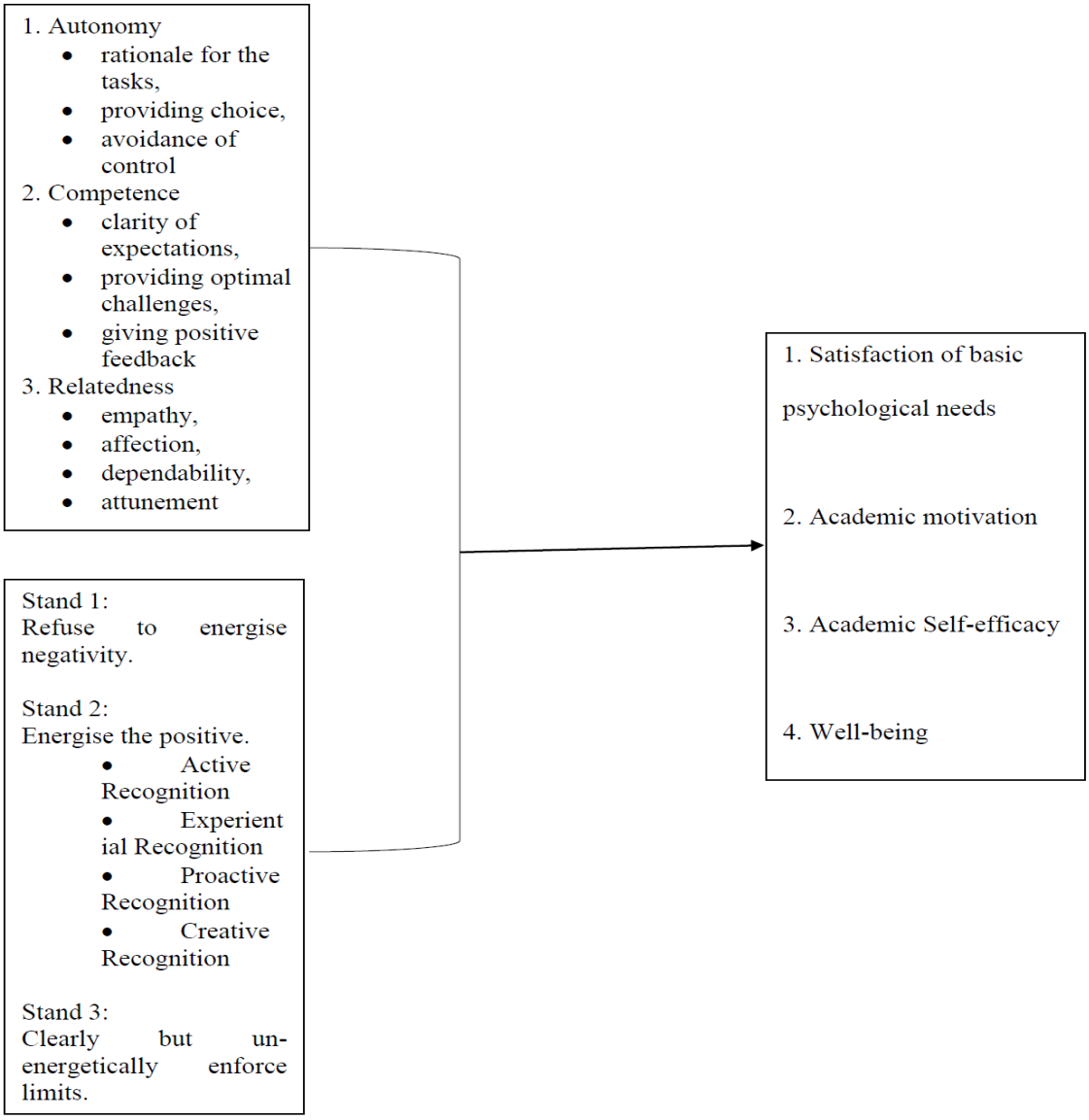


Figure 11. Diagrammatic representation of the model for intervention.

The present study employed the components of SDT and NHA to develop an intervention strategy for addressing motivational concerns of LD students. Satisfaction of the three basic psychological needs (of autonomy, competence and relatedness) is essential for the healthy development, intrinsic motivation and well-being of all individuals across cultures (Ryan & Deci, 2000). A number of studies have shown that intrinsic motivation is associated with better learning, performance and well-being (e.g., Benware & Deci, 1984; Deci et al.,

1981; Grolnick & Ryan, 1987). To satisfy the basic needs, along with the components of SDT, the elements of NHA were-employed. The tenets of NHA support the components of SDT and can form a path to satisfy the basic psychological needs. Both of these aspects were employed while carrying out the intervention sessions for students with LD. The effect of satisfaction of basic psychological needs on academic motivation, academic self-efficacy and well-being was assessed. Specifically, following **research questions** were addressed in this study-

3. What impact does the proposed intervention strategy based on Self-Determination theory and NHA have on students with LD?

   A) How does the strategies based on SDT (i.e. providing relevance for the task, providing choice and avoidance of control) and NHA affect need for autonomy?

   B) How does the strategies based on SDT (i.e. providing clarity of expectations, optimal challenges and positive feedback) and NHA affect need for competence?

   C) How does the strategies based on SDT (i.e. providing empathy, affection, dependability and attunement) and NHA affect need for relatedness?

   D) What is the impact of the strategies based on SDT and NHA on academic motivation, academic self-efficacy and subjective well-being of students with LD?

Method

Participants

The study consisted of 7 students with LD in the age group of 10-16 years. Out of the 7 participants, 6 were boys and 1 was a girl. All of them were studying in a special school in Chennai, India which was following the National Institute of Open Schooling (NIOS) syllabus. The participants started their education in mainstream, regular schools. However, due to their

academic issues and difficulties they were pulled out of the mainstream schools. This was done following a psychological assessment and diagnosis for LD. All the participants were reported to have normal IQ by the school authorities. All the participants belonged to similar socio-economic background and had either Tamil or Malayalam as their first language.

Measurement Tools

Self-Regulation Questionnaire – Academic (Deci, E. L., Hodges, R., Pierson, L., & Tomassone, J., 1992).

It is a 17 item questionnaire which has been adapted from a scale developed by Ryan & Cornell (1989). It assesses the student's style of academic self-regulation, that is, the reason why a student would perform a particular task. It is a likert type scale in which the student is required to indicate how often the student performs the tasks for the given reason. This questionnaire has two versions. The version for students with LD was used in the study since the targeted sample consists of students with LD. It has four subscales: external regulation, introjected regulation, identified regulation and intrinsic motivation. The reliability measured by Cronbach alpha for the scales ranged from 0.66 to 0.82.

Children's Self-Efficacy Scale (Bandura, 2006).

This scale is used to assess the level of confidence that children perceive they have to perform certain tasks. It is meant for school going students. Two subscales from the original scale was used for the present study. They are: self-efficacy for academic achievement and self-efficacy for self-regulatory learning. These scales were selected because they suit the objective of this study as they were related to academics and learning. The scale of the original version ranged from 0 (cannot do at all) to 100 (highly certain can do). For the present study the scale was also modified to range from 0 (cannot do at all) to 10 (highly certain can do). This was done to make the scale simpler and also to keep it similar to the other scales to be used in the present study.

The Cronbach alpha coefficients for the two scales were reported to be 0.87 (self-efficacy for academic achievement) and 0.80 (self-efficacy for self-regulatory learning).

Personal Wellbeing Index – School Children (Cummins & Lau, 2005).

The PWI scale contains seven items of satisfaction, each one corresponding to a quality of life domain as: standard of living, health, life achievement, personal relationships, personal safety, community-connectedness, and future security. Each item is concerned with how happy the subject feels with respect to the life domain indicated in the item. To denote this, a scale ranging from 0 (very sad) to 10 (very happy) is used. This scale was reported to have adequate reliability and validity.

Basic Need Satisfaction Scale (Gagne, 2003).

The Basic Need Satisfaction Scale is a family of scales. The scale to be used in the present study has been adapted from a measure of need satisfaction at work. It measures satisfaction of the basic psychological needs by asking the respondents to indicate the extent to which each statement is true with respect to their lives. The scale has 21 items. Its rating scale ranges from 1 (not at all true) to 7 (definitely true). The alpha coefficients for the three needs are: autonomy (7 items = .69), competence (8 items = .71) and relatedness (6 items = .86).

Procedure

A special school in Chennai, India was contacted for permission for data collection for this study. Consent was taken from school authority. A senior teacher of the school recommended the participants for the study based on their poor academic performance. Thus, this was essentially a purposive sample. The children were already assessed for LD. However, an informal assessment was done to ascertain their difficulties in different areas such as reading, writing, comprehension, spellings and so on. The participants were helped with their academic difficulties, mainly in the areas of reading, writing and spellings. The components of SDT and

NHA were employed during the sessions and they dictated how the teacher interacted with the participants. The intervention program was conducted during the free class hours and the non-academic class hours (such as music, painting, craft). Each session was for 45 minutes. The participants were divided into two groups of three and four each. Each participant completed at least 36 sessions, which were spread over a period of three months. This study was done in three phases:

1. Pre-intervention Phase,
2. Intervention Phase,
3. Post-intervention Phase.

1. Pre-intervention phase.

In the first phase, each participant was asked to fill the questionnaires on academic self-regulation, well-being, academic self-efficacy and need satisfaction. The informal assessment was also done in this phase to check for issues in reading, writing, spellings, comprehension, handwriting and phonemic awareness. The participants were asked to read a paragraph from a book of their curriculum. They were also asked to read the lists of Sight Words (Dolch List, which is a list of most frequently occurring English words). Their performance was noted by keeping record of the kinds of errors they made or difficulties they exhibited. Various questions on the content read were asked to check for their comprehension skills. For writing skills, spellings (words and paragraph) and written expression was looked at. They were asked to write a list of words and a paragraph for the spelling task. The material was taken from their curriculum. For assessing their written expression, they had the option to choose from three different topics (“Myself”, “My family”, “My School”) and write on it. Their ability to form meaningful, grammatically correct sentences, description of content and usage of punctuation were recorded. Their handwriting was also assessed to determine letter formation errors, type of writing (cursive/manuscript), quality of posture and errors in spacing/size/slant. Phonemic

awareness assessment consisted of a rhyming task, oddity task, oral blending task, oral segmentation task and phonemic manipulation task. Their performance (including areas of concern) was recorded. This informal assessment guided the sessions in the second phase. Each participant will have a unique profile. Thus each one will need an individual remedial plan. However, due to time constraints they were divided into groups of 3 and 4. The common areas of difficulties for the participants in each group were given priority.

2. Intervention Phase.

In the second phase, the participants were given remedial help in conditions which supported the fulfillment of the needs as proposed by Self-Determination Theory and NHA. The various strategies adopted for this purpose are mentioned below:

I. ***Need for Autonomy***. This need was supported through providing rationale for the tasks, providing choice and avoidance of control. In the sessions, the participants were given the option to choose what they preferred to do in that particular session. The options were given by the researcher. Also for each task, a rationale was given as to how it would benefit them and why was it necessary that they do it. They were not forced to do any particular task. Proactive recognitions were also given to further support the need for autonomy through the provision of choice. For this, in the initial sessions a list of rules was created comprising of the rules to be followed during the class/session. The list is as follows:

- No distracting behavior.
- No lying.
- No talking among yourselves during tasks.
- No disrespecting others.
- No arguing or being disrespectful.
- No disobeying.

These rules provided a chance for proactive recognitions to be given when they were followed or not broken. They were laid out after discussing and negotiating with the participants. To avoid control, statements which had words that force them to do tasks were avoided as much as possible. Also, “resets” were also used for the same purpose.

II. ***Need for Competence***. Support for competence in the intervention program included providing clarity of expectations, providing optimal challenges and giving positive feedback. Recognitions based on the NHA were employed for this purpose. While giving creative recognitions, requests about the tasks to be completed were provided very clearly so that the participants knew what was expected of them. The tasks themselves were clearly explained to them so that they were not puzzled about what was needed to be done. For providing proactive recognitions, a list of clear rules was already laid out, as mentioned above. This also provided clarity about the behavior that was expected from them during the class/session. Information about limits and consequences were also provided according to the Stand 3 of NHA, which again provided clarity of expectations. Optimal challenges in terms of remedial tasks or any other academic activities were given to the participants. All the recognitions as proposed by NHA, provide positive feedback. Thus while giving any of the four recognitions, we were providing positive feedback.

III. ***Need for Relatedness***. Support for this need was provided through showing empathy, affection, dependability and attunement. The participants were given all the recognitions and all the three stands as proposed by NHA were followed during the sessions. These recognitions communicates that the students are appreciated and noticed and that the teacher cares for them and is empathetic towards not only their difficulties but also the efforts that they are putting into the tasks. Therefore, by

following the basic tenets of the NHA, support for the fulfillment of the need for relatedness was provided.

The change in their behavior, motivation and attitude towards the teacher and study were noted. Observations were also recorded of the change in behviour that was evident in the participants. Any change in their behavior (verbal or otherwise) which indicated a change in their motivation, attitudes were noted to corroborate with the quantitative data.

3. Post-intervention Phase.

In the post assessment phase, the impacts of the intervention on the participants were recorded by taking their scores on the measures of academic self-regulation, academic self-efficacy, well-being and basic needs satisfaction.

Results

First, the descriptive statistics for all the sub-scales were calculated for both pre-intervention and post-intervention phase. Table 1 shows the mean, standard deviation, minimum and maximum scores obtained by the participants on each sub-scale, before and after intervention.

Table 17

Table showing the descriptive Statistics of the participants on all the variables before and after the intervention

	Mean	Median	Standard Deviation	Minimum	Maximum
Need for Autonomy Pretest	28.71	31.00	5.736	20	35
Need for Autonomy Posttest	34.86	35.00	2.968	31	39
Need for Competence Pretest	22.57	20.00	6.294	15	30
Need for Competence Posttest	30.57	32.00	3.780	26	35
Need for Relatedness Pretest	42.14	42.00	6.466	32	51

Need for Relatedness Posttest	48.14	49.00	4.259	41	53
External Regulation Pretest	12.43	13.00	2.149	10	15
External Regulation Posttest	10.43	11.00	1.902	7	12
Introjected Regulation Pretest	15.43	15.00	4.315	9	21
Introjected Regulation Posttest	13.43	13.00	4.353	8	21
Identified Regulation Pretest	7.57	7.00	1.718	6	10
Identified Regulation Posttest	9.14	9.00	1.215	8	11
Intrinsic Motivation Pretest	7.00	6.00	2.828	4	12
Intrinsic Motivation Posttest	9.14	10.00	1.773	7	11
Academic Self-efficacy Pretest	6.29	6.00	1.604	4	9
Academic Self-efficacy Posttest	7.29	7.00	1.113	6	9
Wellbeing Pretest	7.43	8.00	1.272	5	9
Wellbeing Posttest	7.71	7.00	.951	7	9

The group data was also analysed using non-parametric statistical tools because the sample for this study is quite small (7 participants) which may violate the assumptions of parametric tests such as normal distribution of the sample scores. Thus, apart from the descriptive statistics, Wilcoxon Matched-Pairs Sign Ranks Test was utilized to check for the impact of the intervention on students with LD. This test enabled us to look into whether the changes that were observed between the two phases (pre-intervention and post-intervention phase) were statistically significant.

The first three parts of the research question deal with the impact of the intervention, using SDT and NHA, on need for autonomy, need for competence and need for relatedness. This was to highlight whether the components that were adopted to be a part of this intervention

led to the satisfaction of the three needs. The Wilcoxon Matched-Pairs Sign Ranks Test was used for this purpose. The results are presented in Table 18. Figure 12 shows a diagrammatic representation of the pre and post-intervention scores for the three basic Psychological needs.

Table 18

Results of Wilcoxon Signed Ranks test for pretest and posttest scores of need for autonomy, need for competence and need for relatedness

	Need for Autonomy Posttest – Need for Autonomy Pretest	Need for Competence Posttest – Need for Competence Pretest	Need for Relatedness Posttest – Need for Relatedness Pretest
z	-2.207*	-2.371*	-2.379*

*$p < 0.05$.

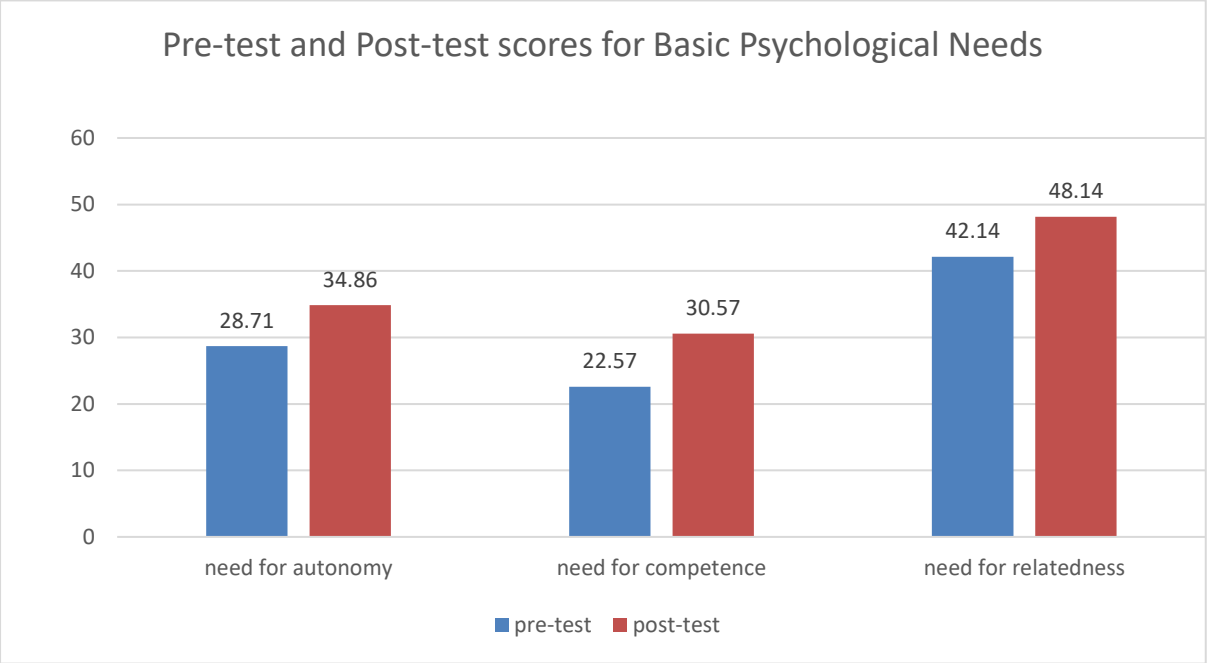


Figure 12. Figure showing the pre and post-intervention scores for the three basic psychological needs.

For need for autonomy, the post-intervention scores (*Mdn* = 35.00) were significantly higher than pre-intervention scores (*Mdn* = 31.00), *z* = -2.207, *p* = .027, *r* = -0.58. Similarly,

for the need for competence, the post-intervention scores (*Mdn* = 32.00) were significantly higher than pre-intervention scores (*Mdn* =20.00), z = -2.371, p = .018, r = -0.63. The same trend was observed for need for relatedness, that is, the post-intervention scores (*Mdn* = 49.00) were significantly higher than pre-intervention scores (*Mdn* = 42.00), z = -2.379, p = .017, r = -0.63.

Academic motivation was measured using Self-Regulation Questionnaire-Academic. It had four sub-scales (External Regulation, Introjected Regulation, Identified Regulation, and Intrinsic Motivation). The former two are extraneous forms of motivation, while the latter two are more intrinsic forms of motivation. The post-intervention scores on External Regulation and Introjected Regulation were found to be significantly lower and the post-intervention scores of Identified Regulation and Intrinsic Motivation were found to be significantly higher than the pre-intervention scores. The results are presented in Table 19. The raw scores for the four sub-scales are presented in Figure 13.

Table 19

Results of Wilcoxon Signed Ranks test for pretest and posttest scores of external regulation, introjected regulation, identified regulation and intrinsic motivation

	External Regulation Posttest – External Regulation Pretest	Introjected Regulation Posttest – Introjected Regulation Pretest	Identified Regulation Posttest – Identified Regulation Pretest	Intrinsic Motivation Posttest – Intrinsic Motivation Pretest
z	-2.049*	-2.041*	-2.428*	-2.047*

*$p < 0.05$.

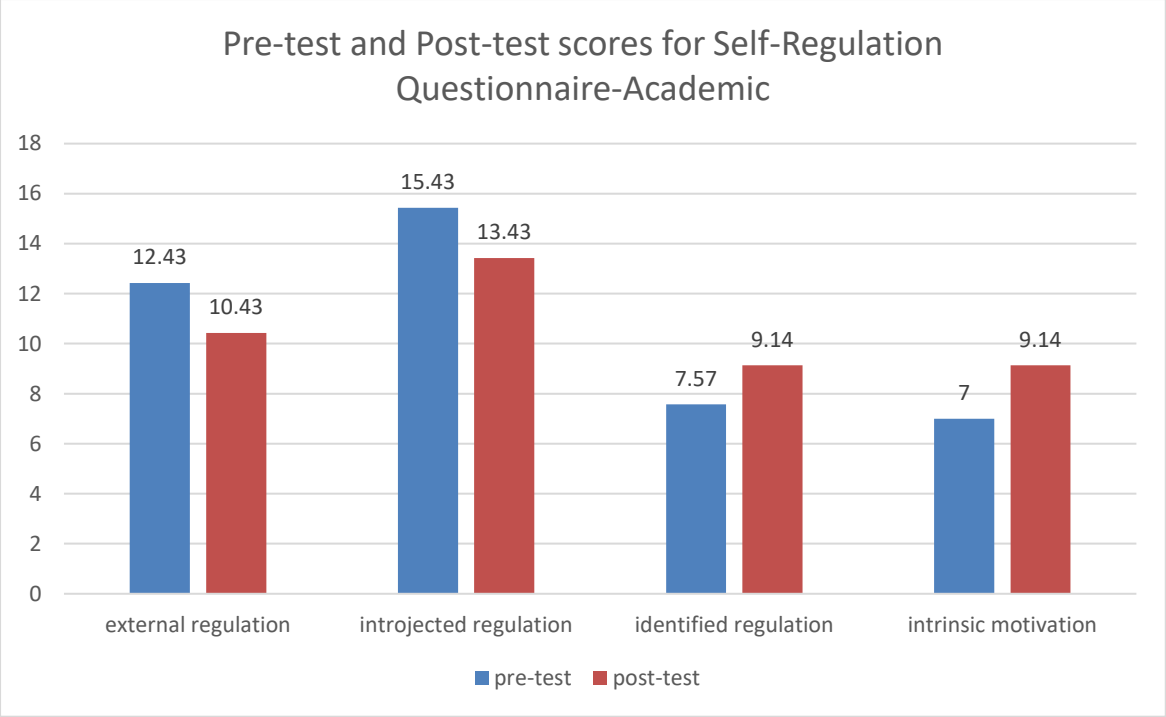


Figure 13. Figure showing pre and post-intervention scores of the four sub-scales of Academic Self-Regulatory Questionnaire.

For external regulation the post-intervention scores (*Mdn* = 11.00) were lower than the pre-intervention scores (*Mdn* = 13.00), z = -2.049, p = 0.04, r = -0.55 . For introjected regulation too, the post-intervention scores (*Mdn* = 13.00) were lower than the pre-intervention scores (*Mdn* = 15.00), z = -2.041, p = 0.041, r = -0.55. For identified regulation the post-intervention scores (*Mdn* = 9.00) were higher than pre-intervention scores (*Mdn* = 7.00), z = -2.428, p = 0.015, r = -0.65. For intrinsic motivation too, the post-intervention scores (*Mdn* = 10.00) were higher than the pre-intervention scores (*Mdn* = 6.00), z = -2.047, p = 0.041, r = -0.55.

Two other variables that were considered in this study are academic self-efficacy and well-being. For academic self-efficacy, the post-intervention scores (*Mdn* = 7.00) were significantly higher than pre-intervention scores (*Mdn* = 6.00), z = -2.333, p = 0.02, r = -0.62 . However, there was no significant difference in the scores of subjective well-being. The results are presented in Table 20.

Table 20

Results of Wilcoxon Signed Ranks test for pretest and posttest scores of academic self-efficacy and well-being

	Academic Self-Efficacy Posttest – Academic Self-Efficacy Pretest	Wellbeing Posttest – Wellbeing Pretest
z	-2.333*	-.707

*$p < 0.05$.

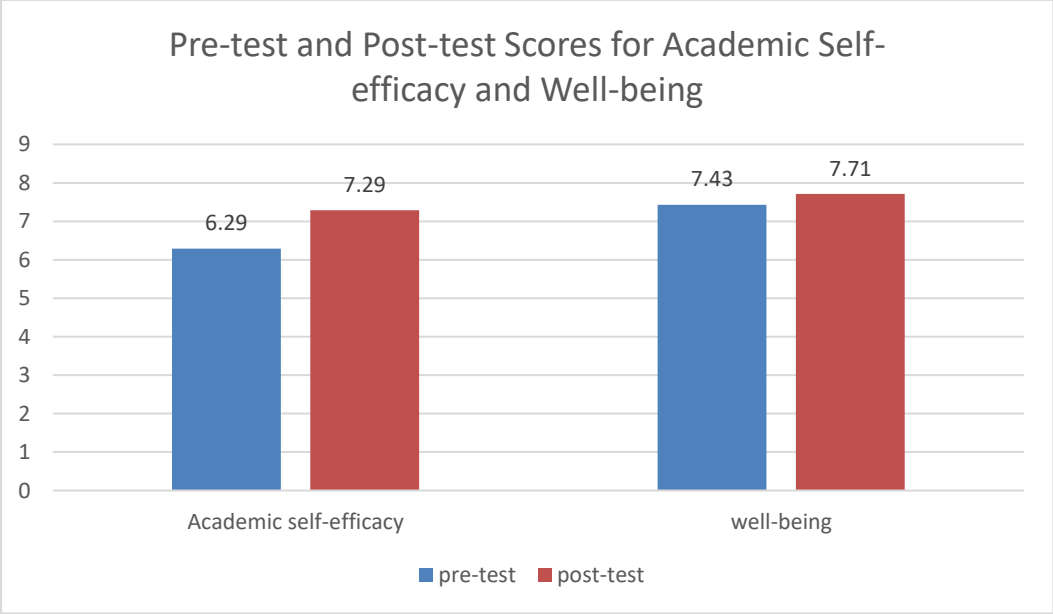


Figure 14. Figure showing pre and post-intervention scores of Academic Self-efficacy and Well-being.

The effect size (r) for need for autonomy, need for competence, need for relatedness, external regulation, introjected regulation, identified regulation, intrinsic motivation and academic self-efficacy ranged from -0.55 to -0.65. All the values were greater than 0.5, which indicates a large change in the respective variables.

The fourth part of the research question dealt with the impact of the intervention on academic motivation, academic self-efficacy and well-being. Statistical analysis leads us to the

conclusion that significant changes were observed in case of academic motivation and academic self-efficacy. However, well-being did not show any such changes.

Behavioral Observations

Some of the changes in the behavior of the participants noticed over the period of the intervention are mentioned below**:**

- Most of the participants mentioned in the beginning of the intervention that they did not like attending such sessions since they had to miss out on the non-academic class hours, which they were fond of. During the sessions, for every task they were given a rationale as to how that particular task is going to help them. For example, if any participant had difficulties in reading, they were discussed with him and he was explained that the knowledge about the sounds of the letters and phonemic manipulation would help his reading and also his spellings. This *rationale* was repeated every time before such tasks were performed. During the latter part of the study it was observed that if any of the other participants did not want to do a task, the other participants would explain how these tasks were important and how they had helped him. They came up with these explanations voluntarily. *It seemed that some of them had internalized the rationale and started doing the tasks because they felt that they were personally important to them.*
- During the initial sessions a list of rules to be followed during the session was made. These rules were listed by negotiating with the participants and the ones which were agreed upon by everyone were finalized. Whenever these *rules* were followed or at every instance when a particular rule was not broken, *proactive recognitions* were given. Initially there were not many such opportunities. However, as the participants started getting comfortable in the sessions, they started following the rules. The rule

which stated “no disrespecting others” was especially useful with regard to one of the participants. He would show disregard towards his classmates and try to belittle them. This would also disturb the class. When he did so, no attention was paid and at every instance when he was not doing so, it was recognized and he was given proactive recognition. *Thus, he started boing more friendly towards the classmates*. The participants were *not forced to follow any of the rules*. It was entirely their choice to do so. They did it out of their willingness. The instances when they did follow any rule or didn’t break any rule were always reinforced by giving proactive recognition to address the need for autonomy.

- The participants were initially wary about attending the sessions with a new teacher. Therefore, the components to fulfill the need for relatedness were thought to be necessary to initially motivate them. The components included showing *empathy, affection, dependability and attunement.* Initially a lot of *active and experiential recognitions* were given to communicate that their efforts and attempts were appreciated and their difficulties were understood by the researcher. Personal anecdotes about the researcher’s own difficulties with spellings were also shared with them to show empathy and attunement. Thus, *self-disclosure* was an element which was extremely useful in making the participants feel connected to the teacher. These instances proved very helpful for them and let them open up to the teacher. They began to share their personal problems and also academic difficulties. *They became more responsive* to the happenings in the sessions and started participating more in the activities. It was also observed that they started putting *more efforts in learning the answers*. Initially some of them had a tendency to give up easily. For that, they were given a lot *of positive feedback, in terms of active and experiential recognitions,* even if they could learn one sentence from the answer. One whole

answer was difficult for them to learn at one go. Therefore, the answers were broken down to parts/points for them to learn. Thus, the task was kept *optimally challenging* for them, so that it was not too difficult for them. Doing so made the tasks not too overwhelming for them and also kept them *motivated to learn the material.*

- Over the course of the sessions, the participants seemed to have undergone a *change in attitude towards the researcher and in their motivation to attend the sessions.* Initially it was observed that they lacked willingness to attend the sessions. They had to be asked repeatedly to come for the sessions. However, subsequently they started coming out of their own desire. If on any day, one of them was not able to do so because of any other engagements; he/she would say sorry and ask for rescheduling the session. Also, during the latter part of the study, whenever they had a free class hour, some of the participants started asking for the sessions themselves. This showed a marked difference in their behavior and motivation. Initially they had stated that they did not like coming for the sessions. But eventually, they themselves started asking for extra sessions on their own accord.

Discussion and Implications

The current study's aim was to implement an intervention program for students with LD based on the tenets of SDT and NHA. We combined both the approaches because of the parallels between the two. Through student teacher interaction both the approaches were used to provide a social context which supported the fulfillment of the basic psychological needs. We explored how the components of both impacted the satisfaction of the three basic psychological needs and also academic motivation, academic self-efficacy and well-being. For this we used a pretest-posttest design to look for significant differences in the variables before and after the implementation of the intervention. Results showed a significant difference between pre and

post measures of basic needs satisfaction, academic motivation (all four types of regulation viz. external regulation, introjected regulation, identified regulation and intrinsic motivation) and academic self-efficacy.

SDT hypothesizes that support for the satisfaction of the three needs (of autonomy, competence and relatedness) leads to an improvement in intrinsic motivation and integrated regulation (Deci et al., 1996). The results of our study support this hypothesis as the post-intervention scores for intrinsic motivation and integrated regulation were significantly higher than pre-intervention scores. The participants reported significant increase in these measures after the implementation of the intervention program.

Earlier studies had outlined the key components for need support. An environment where, students are accepted with their difficulties and their perspectives; are given challenging tasks and opportunities for making choices; offered a rationale for the tasks given; controlling language are minimally used; goals and expectations are clearly stated; positive feedback is given; empathy, affection, attunement and dependability are displayed; supports the fulfillment of the need for autonomy, competence and relatedness (Haerens et al., 2013; Reeve, 2009; Su & Reeve, 2011). As an extension to that, this study has looked into how these components would impact children with LD in an educational setting. Results of the study show favourable outcomes of the intervention model for this population. It is especially significant because children with LD struggle with academic difficulties because of which academic activities may not be inherently interesting for them. Also repeated failures can lead to amotivation (Deci & Chandler, 1986) which may in turn exacerbate their symptoms/difficulties. The components of SDT and NHA which were employed in this study can be helpful in preventing that. Grolnick and Ryan (1990) reported that students with LD rated themselves as being less competent academically than the groups of matched-IQ and randomly selected students. Their teachers too rated them as being less competent and motivated, having lower self-esteem and more

learning problems as compared to the other two groups. This reflects the fact that students with LD definitely face circumstances in the educational settings which adversely affects their motivation and self-regulation. Therefore, the components which were employed in this study can help these students by instilling in them a feeling of competence and autonomy. Also the components to support the need for relatedness becomes increasingly salient for this kind of population because they need to feel secure and understand that they can depend on their teachers for support. These students may already be facing negative experiences with regard to motivationally relevant variables. Therefore, an environment which provides them the right kind of support by facilitating the feelings of autonomy, competence and relatedness would be an important gain for them. A study by Deci et al. (1992) found that for students with LD, perception of competence and autonomy correlated with personal adjustment and these motivational variables along with perception of home and classroom contexts predicted students' achievement. This goes on to reiterate the need for contextual support for the fulfillment of the needs and as revealed by the results of this study the aforementioned components along with the techniques of NHA can provide that.

Evidence for the benefits of need support in the educational setting are numerous. Students who experienced an autonomy supportive environment showed to have greater conceptual understanding, more interest in the material read and greater memorization (Grolnick & Ryan, 1987; Benware & Deci, 1984). An optimally challenging task and positive feedback tends to enhance intrinsic motivation by supporting the student's feeling of competence (Deci, 1971). A study by Ryan, Stiller & Lynch (1994) found that when students felt a sense of relatedness with their teachers and parents they tend to cope better with academic failures, be more autonomous and more engaged in learning. These studies account for the positive impacts that need supportive contextual factors can have on students. Although we did not look for other benefits that a need supportive environment can impart, we did observe an

improvement in intrinsic motivation and identified regulation, along with a decrease in external regulation and introjected regulation (which are less self-determined forms of motivation). Intrinsic motivation and identified regulation have been found to be associated with greater conceptual learning (Grolnick & Ryan, 1987), achievement and teacher reports of student's competence (Grolnick, Ryan & Deci, 1991). Another study by Ryan, Connel & Plant (1990) reported a strong positive correlation between student's interest in the material and subsequent recall of the same. Drawing from the earlier studies it becomes evident that the components and techniques that formed a part of this intervention program, constitute an important element which if introduced in educational settings for students with LD, can prove to be extremely beneficial for them. Satisfaction of the three needs and the resultant enhancement in intrinsic motivation and identified regulation has been found to be associated to positive academic outcomes. Therefore, it becomes imperative that attempts be made to incorporate techniques such as those employed in this study in educational settings in order to address self-regulation and motivational concerns of students with LD.

This study adds on to the current literature by providing a theoretical foundation to NHA through the views of SDT. NHA was developed to help adults understand how to manage the disruptive behaviours of children who have been diagnosed with some form of behavioural disorder. To do so, NHA suggests various techniques which they call recognitions. Clearly set rules and limits, and various types of recognitions are used to shape desirable behaviours. The approach is backed by anecdotal reports rather than empirical findings. It lacks a theoretical foundation. We used these techniques along with the components of SDT in our intervention and found that they lead to an increase in the satisfaction of the three psychological needs, along with academic motivation and academic self-efficacy. Thus, we can infer that the success of NHA lies in the fact that it actually provides the conditions which are necessary to support the satisfaction of the needs. SDT, being a broad theory of motivation, can explain how

Nurtured Heart Approach brings about behavioural change by fulfilling the satisfaction of the three basic psychological needs. It can therefore, be expected that both these approaches can result in a need conducive environment which is ultimately beneficial for the students with LD.

Apart from the quantitative data, changes in the behavior of the students observed over the sessions were also recorded to augment the data. Changes in the form of the participant's attitude towards the teacher, willingness to attend the sessions, participation in the tasks and overall motivation were observed. Apart from the techniques based on SDT and NHA that were used, self-disclosure is another element which was found to be relevant in this context. Self-disclosure is a way to let another person know about oneself by giving out personal information (Gladding, 2009). It is useful in a counselling relationship because it can lead to reciprocal disclosure (Kotler et al., 1994). However, the same can prove to be helpful in an educational setting too. Self-disclosure, especially about information regarding any difficulties that the teacher may have experienced as a student, can be beneficial in building trust. It was used in the present study and it was observed that the participants became more comfortable with the researcher after such instances. It helped them see the researcher in a new light where they too were not free of problems or devoid of feelings. It communicated to them that other people may have similar difficulties and they can depend on them for assistance. When self-disclosure by the teacher matches the needs of the students it can build trust, closeness, and a feeling of connectedness among them, thereby fulfilling the need for relatedness. Therefore, we believe that in self-disclosure can be a valuable addition as an element to fulfill the need for relatedness.

Implications

The findings of this research suggest that the intervention based on SDT and NHA support the satisfaction of the basic psychological needs, enhance identified regulation, intrinsic motivation and academic self-efficacy of students with LD. These kind of interventions can be

a guide to educational support programs to address barriers to learning for students with LD. As more students with LD are identified and enter mainstream schools, it becomes imperative that teachers be prepared and equipped to handle the diverse needs of students in a classroom. Strategies and techniques as employed in the current study can prove to be very beneficial for instruction of students with LD. Exclusive focus on academic difficulties of students with LD does not fulfill the purpose of schooling and education. Findings of this study can be generalized to classroom instructions to substantially enhance the learning outcomes of students with LD. Apart from improving motivation and self-regulation, these intervention strategies may lead to healthier teacher-student interactions as well. In addition, they can be equally helpful to other students without LD too. The entire educational environment can be benefitted since the same strategies adopted led to gains in a variety of constructs, from motivation to academic self-efficacy. Furthermore, these strategies could pave the way to realize a more inclusive environment in schools. Since these are general strategies and the basic psychological needs are universal, need fulfillment of students of diverse needs can be addressed and enhanced. So rather than segregating them for any form of intervention, the strategies of the current intervention can be applied on a general classroom where all the students are present.

Chapter 5

Conclusion, Limitations and Future Directions

Conclusion

The primary objective of this thesis had been to look at LD beyond the academic issues and gather a better understanding of the socio-emotional and motivational perspectives. Combining these factors with the emergent concept of inclusive education, the first study presented a comparison between three groups of students (students with LD studying in special school, students with LD studying in inclusive schools and students without LD studying in inclusive schools). The results revealed that students with LD studying in special school had the highest number of friends and also highest number of friends outside school. Students without LD studying in inclusive schools had highest number of friends in schools while students with LD studying in the same inclusive schools had significantly lower number of friends in school. Students with LD studying in inclusive school had the highest number of younger and older friends. In other words, the friend circle of students with LD studying in inclusive school did not involve their peer, rather it consists of people who are not the same age group as them and also these people were not from their school too. From the above findings, it is evident that students with LD studying in inclusive school are not faring as well as the other two groups on a number of variables which were considered in this study. Inclusive education is supposed to instill better acceptance of students with disabilities by their peers without disabilities. However, the results of the current study do not point in this direction, rather it brings to light that students with disabilities, specifically LD, are yet to be fully included in the educational milieu, specifically in the context of India. Therefore, it can be suggested that inclusive education being the current trend in education policy, needs to be evaluated and changes should be implemented in order to make the schools the doorway to an inclusive society.

The previous works on peer relationships had used reciprocal nominations in order to study peer relationships and friendships. However, such nominations restrict the choice of selecting an individual to a particular context and other satisfying friendships may be left out

(Schneider et al., 1994). This study deviated from the previous works by focusing on the perception of the individual only. Although it has already been established that students with LD are less accepted, it is also possible that they have at least one or a few close friends. Hence, apart from peer relationships, the current study looked into friendship quality with their best friend. It is believed that the combination is going to enhance the relevance of the findings. Students with LD, who were found to have lesser number of friends and also lesser number of friends in school than the other two groups, also scored higher on conflict and betrayal sub-scale of the Friendship Quality Questionnaire. Thus, not only do they have less number of friends but their relationships with their friends are also more conflict-ridden. Although studying in an inclusive environment they are not very much benefitted of the social advantage that inclusive education is supposed to provide. An inclusive educational environment is expected to instill greater acceptance of students with diverse needs. However, it seems that is not happening in the present scenario.

Since students spend the majority of their time in schools, the onus of social development along with academic development, lies partly with the school too. Teachers would usually focus on behavior that impacts on task behavior or behavior that impacts the discipline and teaching in the classroom. Other social behavior may get neglected. Therefore, certain focus needs to be directed towards their social functioning as well.

Like other previous researches this study too brings out the social skill deficits of students with LD. But it is disheartening to see that this aspect is missing from the definition of LD. It is not even considered as one of the characteristic of LD, as pointed out by Bryan et al. (2004).

Previous works inform us that positive relations can act as a protective factor that promote resilience in children (Wiener, 2004). So, only focusing on scholastic behavior may not prove to be beneficial in the long run. The improvement of social skills is as important as

the improvement of the academic/scholastic issues. But as the results of the current study revealed, students with LD, especially the ones studying in inclusive schools are lacking in this area. The schools and the education system at large may be implementing inclusive education as a flagship program and also devoting considerable amount of resources into it, but has it really been successful? Has the concept of inclusive education been fully understood or is it still something that eludes most of us? Can we really translate it from the superior concept it seems on pen and paper? A lot of earlier studies have noted down the barriers to inclusion, some of which are lack of trained teachers and inclusive policy, negative attitude, parental pressure etc. (Bhatnagar and Das, 2014 b). Negative attitude can be a serious hurdle on the path of inclusive education. For the current study when the attitude of teachers was assessed, it showed that they do not have a very positive attitude towards including students with LD in their classrooms, especially teachers of Government schools. Their attitude is not only going to affect their own behavior but also of the others in the classroom. Thus, it may create serious issues in the realization of inclusive education.

If we acknowledge the barriers, then it is imperative that we remove them at the earliest. The students with disability going to mainstream/regular/inclusive schools should be considered and recognized as students- just that. Their disability should not become a tag that they carry along all the time. For that to happen, the members of the school authority/administration as well as the society have to let go of the notion that students with disability are lacking in some manner. Rather, they should be given every available support to deal with them. We should be sensitive enough to include/accept the entirety of the students with diverse needs into one educational system. Otherwise the whole purpose of inclusive education will be defeated. In the process of providing the support, their issues and difficulties will get highlighted making it very difficult for them to avoid the stigma associated with it. This will definitely have an impact on the peer relationships. Thus, instead of looking at

inclusive education through rose colored glasses, it should come with a forewarning which states that inclusion by itself should not become a criteria for exclusion.

Looking again at the other variables of the first study, the results revealed that students with LD, as a whole, had lower scores on academic motivation, academic self-efficacy and well-being than students without LD. Apart from other factors, these differences can partly be attributed to the outcome of presence of LD. The academic difficulties always remain in the foreground while discussing about LD. But there are associated complications (like the variables considered in the study) which require equal if not more, attention. This is more so because these complications may exacerbate the difficulties of students with LD. The current study presented a more well-rounded and integrated view of students with LD. Students with LD had low academic motivation, academic self-efficacy and well-being, in spite of attending the inclusive schools. Therefore, there is an immense need of an intervention program which addresses these non-academic difficulties. The second study was thus developed to target the fulfillment of basic psychological needs, academic motivation, academic self-efficacy and well-being. The intervention combined the tenets of SDT and NHA and found favorable outcomes for all the variables except for well-being.

Apart from the strategies already outlined, the current study added to them by incorporating self-disclosure as another strategy to address need for relatedness. The study also offered a theoretical foundation to NHA. The three stands and four recognitions seem to work because they are a way to fulfill the basic psychological needs.

The crux of the intervention lay in the reaction of the adult dealing with a child with LD. Thus it implies that as adults working with students with LD, or any disability, our behavior towards them will play a significant role in deciding the course and outcome of the intervention. The greater the support that we can provide the students, the lesser will be the handicap they experience because of the disability. The strategies adopted in the intervention

program in the current thesis, are general strategies and can be applied when dealing with students with any kind of difficulties. They are also not task specific. Rather, they can be considered as generalized guidelines that will mold the behavior of the students and also bringing an improvement in some other areas like the variables considered in this study. These improvements can support them in overcoming their difficulties to an extent. Thus, the decisions we take and behavior we adopt can seriously impact the degree of disability or the kind of issues they experience and deal with. LD as a condition can affect the entire individual as shown by the results of the current thesis. In such a scenario, if adequate provisions are not provided to them, it would mean that they do not have equal access to education as the rest of the students. This again highlights the importance of interventions which focus on the non-academic issues associated with LD. Otherwise, it will be very difficult to achieve the goal of inclusive education.

Limitations and Future Directions

The present study is subject to quite a few limitations, which need to be considered along with the results. Future directions are also provided so that these limitations can be rectified in the forthcoming research studies.

- The measurement tools used were self-report measures. Therefore, there is a risk of the participants reporting socially desirable responses. The use of stricter measures of the variables would build on our findings and give us a fuller picture about how the variables varied between the three groups (in the first study) and also on how elements based on SDT and NHA help facilitate the satisfaction of the basic psychological needs and influence motivation in students with LD (in the second study). Self-report measures may not always present true picture of the reality. Therefore, in the second study behavioral observations were included in order to augment the quantitative data.

- With regard to the second study, the main limitation of this study is the small size of the sample. Due to time constraints and lack of availability of participants, the sample size had to be limited. Future research can look at a larger sample size which would also enhance the statistical power of the study.
- Extending the second study further, future works in this area can look into the impact of need satisfaction on academic performance too.
- The first study looked into the differences between the three groups of students as a way to investigate the impact of inclusive education. However, the study prevents developing a causal explanation for the difference that have been observed in the study. Studies in future can look into why these differences exist. And, longitudinal studies will also enable to see if any change in friendship patterns arises as a result of an inclusive education system.
- To fully understand the impact of inclusive education, different disabilities should be considered. However, the current study only focused on LD. As a next step, different disabilities can be taken up in order to fully comprehend the impact inclusive education has had on these students. Such studies would inform the changes, if any, that are required in our educational policy.
- The study was limited to two geographical locations and a specific age-group was taken for the study too. This might limit the generalizability of the findings, especially of the first study.

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Appendix:
Questionnaires

Number of Friends and Age of Friends

Name :
Age:
Boy or Girl (tick one)
School:

Instructions:

Please write the names of your friends, their age and the name of their school in the table below.

Sl. No.	Name	Age	Name of school

Friendship Quality Questionnaire- Revised

Name :
Age:
Boy or Girl (tick one)
School:

Instructions:

With this questionnaire, we are going to ask you to circle the choice which describes you best. These questions are about your best friend/friends. Think about your relationship with your best friend/friends and then chose an option which describes your relationship best for each question. Please answer all questions and mark only one option for each question.

1. My best friend/friends and I live really close to each other.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

2. My best friend/friends and I always sit together at lunch in school.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

3. My best friend/friends and I get mad at each other a lot.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

4. My best friend/friends tells/tell me I am good at things.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

5. If other kids were talking behind my back, my best friend/friends would always stick up for me.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

6. My best friend/friends and I make each other feel important and special.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

7. My best friend/friends and I always pick each other as partners.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

8. If my best friend/friends hurts/hurt my feelings, he/she says “I am sorry”.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

9. I can think of some times when my best friend/friends has/have said mean things about me to other kids.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

10. I can always count on my best friend/friends for good ideas about games to play.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

11. If my best friend/friends and I get mad at each other, we always talk about how to get over it.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

12. My best friend/friends would still like me even if all the other kids didn't like me.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

13. My best friend/friends tells me I am pretty smart.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

14. My best friend/friends and I are always telling each other about our problems.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

15. My best friend/friends makes me feel good about my ideas.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

16. When I am mad about something that happened to me, I can always talk to my best friend/friends about it.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

17. My best friend/friends and I help each other with chores or other things a lot.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

18. My best friend/friends and I do special favors for each other.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

19. My best friend/friends and I do fun things together a lot.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

20. My best friend/friends and I argue a lot.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

21. I can always count on my best friend/friends to keep promises.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

22. My best friend/friends and I go to each other's homes after school and on weekends.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

23. My best friend/friends and I play together at recess.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

24. When I am having trouble figuring out something, I usually ask my best friend/friends for help and advise.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

25. My best friend/friends and I talk about the things that make us sad.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

26. My best friend/friends and I always make up easily when we have a fight.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

27. My best friend/friends and I fight.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

28. My best friend/friends and I always share things like stickers, toys, games and books with each other.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

29. If my best friend/friends and I are mad at each other, we always talk about what would help to make us feel better.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

30. If I told my best friend/friends a secret, I could trust him/her not to tell anyone else.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

31. My best friend/friends and I bug each other.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

32. My best friend/friends and I always come up with good ideas on ways to do things.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

33. My best friend/friends and I loan each other things all the time.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

34. My best friend/friends often helps me with things so I can get done quicker.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

35. My best friend/friends and I get over our arguments really quickly.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

36. My best friend/friends and I always count on each other for ideas on how to get things done.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

37. My best friend/friends doesn't listen to me.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

38. My best friend/friends and I tell each other private thoughts a lot.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

39. My best friend/friends and I help each other with schoolwork a lot.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

40. I can think of lots of secrets my best friend/friends and I have told each other.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

41. My best friend/friends cares about my feelings.

Not at all true	A little true	Somewhat true	Pretty true	Really true
1	2	3	4	5

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Self-Regulation Questionnaire-Academic

Name :
Age:
Boy or Girl (tick one)
School:

Instructions: Read each statement carefully. After reading each statement choose one option, out of the given four, which according to you suits best why you do the task given in the statement. Please tick your chosen option.

1. I do my classwork so that the teacher won't yell at me.

Always	Most of the time	Sometimes	Never

2. I do my classwork because I want the teacher to think I'm a good student.

Always	Most of the time	Sometimes	Never

3. I do my classwork because I want to learn new things.

Always	Most of the time	Sometimes	Never

4. I do my classwork because I'll feel bad about myself if it doesn't get done.

Always	Most of the time	Sometimes	Never

5. I do my classwork because it's fun.

Always	Most of the time	Sometimes	Never

6. I do my classwork because that's the rule.

Always	Most of the time	Sometimes	Never

7. I enjoy doing my classwork.

Always	Most of the time	Sometimes	Never

8. I try to answer hard questions in class because I want the other kids to think I'm smart.

Always	Most of the time	Sometimes	Never

9. I try to answer hard questions because I'll feel bad about myself if I don't try.

Always	Most of the time	Sometimes	Never

10. I try to answer hard questions because it's fun to answer hard questions.

Always	Most of the time	Sometimes	Never

11. I try to answer hard questions because that's what I am supposed to do.

Always	Most of the time	Sometimes	Never

12. I try to answer hard questions to find out if I'm right or wrong.

Always	Most of the time	Sometimes	Never

13. I try to do well in school because that's what I am supposed to do.

Always	Most of the time	Sometimes	Never

14. I try to do well in school so my teachers will think I'm a good student.

Always	Most of the time	Sometimes	Never

15. I try to do well in school because I like doing a good job on my school work.

Always	Most of the time	Sometimes	Never

16. I try to do well in school because I will get in trouble if I don't.

Always	Most of the time	Sometimes	Never

17. I try to do well in school because I'll fell really bad about myself if I don't do well.

Always	Most of the time	Sometimes	Never

* * * * * * * * * * * *

Children's Self-efficacy Scale

Name :
Age:
Boy or Girl (tick one)
School:

Instructions:

Given below are a few statements describing the tasks that students have to perform. Please read each statement carefully and then rate how certain you are that you can do each of the things described below by writing the appropriate number. There are no right or wrong answers, so please respond honestly.

Rate your degree of confidence of performing the task by choosing a number from 0 to 10 using the scale given below.

Cannot do at all					Moderately can do					Highly certain can do
0	1	2	3	4	5	6	7	8	9	10

1. Learn general mathematics. …….
2. Learn science. …….
3. Learn reading. …….
4. Learn writing. …….
5. Learn language skills. …….
6. Learn to use computers. …….
7. Learn social studies. …….
8. Learn English grammar. …….
9. Finish my homework assignments by deadlines. …….
10. Get myself to study when there are other interesting things to do. …….
11. Always concentrate on school subjects during class. …….
12. Take good notes during class instruction. …….

13. Use the library to get information for class assignments. …….

14. Plan my schoolwork for the day. …….

15. Organize my schoolwork. …….

16. Remember well information presented in class and textbooks. …….

17. Arrange a place to study without distractions. …….

18. Get myself to do school work. …….

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Personal Well-being Index- School Children

Name:
Age:
Boy or Girl (tick one)
School:

Instructions:

This is a questionnaire about different aspects of your life. Please read each question carefully. You have to answer each question using a rating scale given along with each question. The scale ranges from 0 (very sad) to 10 (very happy). After reading each question, kindly select one option from 0 to 10 which you think is the appropriate answer to that question. There is no right or wrong answer, so please answer each question honestly.

1. How happy are you with your life as a whole?

Very sad					Not happy or sad					Very happy
0	1	2	3	4	5	6	7	8	9	10

2. How happy are you with the things you have (e.g. money, books, clothes, toys etc.)?

Very sad					Not happy or sad					Very happy
0	1	2	3	4	5	6	7	8	9	10

3. How happy are you with your health?

Very sad					Not happy or sad					Very happy
0	1	2	3	4	5	6	7	8	9	10

4. How happy are you with the things you want to be good at (e.g. studies, sports, etc.)?

Very sad					Not happy or sad					Very happy
0	1	2	3	4	5	6	7	8	9	10

5. How happy are you about getting on with the people you know?

Very sad					Not happy or sad					Very happy
0	1	2	3	4	5	6	7	8	9	10

6. How happy are you with how safe you feel?

Very sad					Not happy or sad					Very happy
0	1	2	3	4	5	6	7	8	9	10

7. How happy are you about doing things away from your home?

Very sad					Not happy or sad					Very happy
0	1	2	3	4	5	6	7	8	9	10

8. How happy are you about what may happen to you later on in your life (e.g. career)?

Very sad					Not happy or sad					Very happy
0	1	2	3	4	5	6	7	8	9	10

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The Teacher Attitude Toward Inclusion Scale

NAME:

SCHOOL:

Instructions:

Following are some statements regarding the inclusion of students with Learning Disability in regular classroom. Please read each statement carefully and then choose an option from the given rating scale which according to you is appropriate for that statement. Since, there is no right or wrong answer, kindly respond candidly.

Use the following scale for all items.

1= Agree very strongly, 2= Strongly agree, 3= Agree, 4= Neither agree nor disagree, 5= Disagree, 6= Strongly disagree, 7= Disagree very strongly.

1. All students with mild to moderate Learning Disability should be educated in regular classrooms along with non-handicapped peers to the fullest extent possible.

1	2	3	4	5	6	7

2. It is seldom necessary to remove students with mild to moderate Learning Disability from regular classrooms in order to meet their educational needs.

1	2	3	4	5	6	7

3. Most or all separate classrooms that exclusively serve students with mild to moderate Learning Disability should be eliminated.

1	2	3	4	5	6	7

4. Most or all regular classrooms can be modified to meet the needs of students with mild to moderate Learning Disability.

1	2	3	4	5	6	7

5. Students with mild to moderate Learning Disability can be more effectively educated in regular classrooms as opposed to special education classrooms.

1	2	3	4	5	6	7

6. Inclusion is a more efficient model for educating students with mild to moderate Learning Disability because it reduces transition time (i.e. time to move from one setting to another setting).

1	2	3	4	5	6	7

7. Students with mild to moderate Learning Disability should not be taught in regular classes with non-disabled students because they will require too much of the teacher's time.

1	2	3	4	5	6	7

8. I have doubts about the effectiveness of including students with mild to moderate Learning Disability in regular classrooms because they often lack the academic skills necessary for success.

1	2	3	4	5	6	7

9. I have doubts about the effectiveness of including students with mild to moderate Learning Disability in regular classrooms because they often lack the social skills necessary for success.

1	2	3	4	5	6	7

10. I find that general education teachers often do not succeed with students with mild to moderate Learning Disability, even when they try their best.

1	2	3	4	5	6	7

11. I would welcome the opportunity to team teach as a model for meeting the needs of students with mild to moderate Learning Disability in regular classrooms.

1	2	3	4	5	6	7

12. All students benefit from team teaching; that is, the pairing of a general and a special education teacher in a classroom.

1	2	3	4	5	6	7

13. The responsibility for educating students with mild to moderate Learning Disability in regular classrooms should be shared between general and special education teachers.

1	2	3	4	5	6	7

14. I would welcome the opportunity to participate in a consultant teacher model (i.e. regular collaborative meetings between general and special education teachers to share ideas, methods and materials) as a means of addressing the needs of students with mild to moderate learning disability in regular classrooms.

1	2	3	4	5	6	7

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Basic Needs Satisfaction Scale

Name:
Age:
Boy or Girl (tick one)
School:

Instructions: Please read each statement given below carefully. Use the rating scale given with each statement to rate how true that particular statement is with respect to your life. Please give honest responses.

1. I feel like I am free to decide for myself how to live my life.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

2. I really like the people I interact with.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

3. Often, I do not feel very competent.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

4. I feel pressured in my life.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

5. People I know tell me I am good at what I do.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

6. I get along with people I come into contact with.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

7. I pretty much keep to myself and don't have a lot of social contacts.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

8. I generally feel free to express my ideas and opinions.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

9. I consider the people I regularly interact with to be my friends.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

10. I have been able to learn interesting new skills recently.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

11. In my daily life, I frequently have to do what I am told.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

12. People in my life care about me.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

13. Most days I feel a sense of accomplishment from what I do.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

14. People I interact with on a daily basis tend to take my feelings into consideration.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

15. In my life I do not get much of a chance to show how capable I am.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

16. There are not many people that I am close to.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

17. I feel like I can pretty much be myself in my daily situations.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

18. The people I interact with regularly do not seem to like me much.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

19. I often do not feel very capable.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

20. There is not much opportunity for me to decide for myself how to do things in my daily life.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

21. People are generally pretty friendly towards me.

1	2	3	4	5	6	7
Not at all true			Somewhat true			Very true

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