Chapter VI:
Summary, Recommendations and Conclusions

6.1: Introduction:

The study was set to explore the effect on tiered interventions on learning and social behaviour of children in mainstreamed schools. Response to intervention (RtI), as this genre of structured intervention is known as, is a "comprehensive assessment and intervention process utilizing a problem-solving framework to identify and address student academic difficulties using effective, efficient researched-based instruction" (Cortiella, 2006). Though this approach has been in vogue as an alternative to IQ discrepancy model in the West since the last decade, not much organised investigation of the outcome of RtI among children has been done in India. Even in the Western countries few studies have examined the effects of RtI on middle school children and in all academic areas, studies being primarily focussed on reading in primary grades.

This study sought to progressively identify children with learning difficulties of the middle school for receiving level 1, level 2 and level 3 interventions respectively. The study also wanted to find out whether level 1 as well as level 2 interventions would enhance the concept, knowledge and language development in children already identified with learning difficulties at that particular level. The study endeavoured to establish alternative forms of evaluation post level 1 intervention, incorporating project based examinations within a collaborative framework, group discussions and open book exams. Through this the study aimed at identifying the strengths as well as deficits of children that would facilitate formulation of intervention strategies for the next level of intervention.

The study made available structured training in teaching strategies, scheduling, class management skills and evaluations for teachers to provide intervention to children in academic learning as well as social behaviour at level 1 within the general classroom and examined the effectiveness of training in teaching strategies received by these regular teachers. Similar structured training was also provided to special educators as well as regular teachers before they imparted intensive intervention at level 2.

From the composition of the study discussed so far it is evident that such a configuration requires the support of the entire school machinery. Thus another aim of the study was to investigate the effectiveness of RtI model established as a system in middle school in identifying children at risk for learning difficulties and remediating the deficit areas.

The study sought to interweave philosophies of positive behaviour support to create a stress free enjoyable learning environment that would nurture appropriate social behaviour of children within classroom with maximum attentivity, participation, minimum aggression and mutually respectful peer and teacher interactions. By offering opportunities to tap their erstwhile hidden talents and potentials leading to increased self estemes of low achievers the alternative forms of evaluations aimed at decreasing the stress level of children during evaluation. The study worked on the premises that learning and social behaviour occur
conjointly and that if the process of learning could be made interesting for children positive social behaviour would automatically emerge.

The study sought to seek an answer to the following questions:

- Would the three level model of Response to Intervention identify children with learning difficulties?
- Would intervention at level 1 enhance the performance of children “at risk for learning difficulties” in concept, knowledge and language Development?
- Would alternative system of evaluation improve the performance of low achievers?
- Would training the mainstream classroom teachers in teaching strategies increase the effectiveness in general classrooms?
- Would the performance of non responder children after level 1 significantly increase in concept, knowledge and language development after intervention at level 2?
- Would the three tiered response to intervention model be effective in identifying children ‘at risk for learning difficulties and remediating the deficit areas?
- Would there be a change in the social behavior of children in the general class during teaching as well as evaluation with the implementation of response to intervention model?

6.2: Procedure for the research:

The design employed was a multiple baseline design across subjects, behaviours and settings. The first baseline was formed by children identified at risk for learning difficulties by screening. These children would be receiving level 1 intervention in the general class by the regular teachers. The second baseline was formed by monitoring the progress of the identified children who were receiving level 1 intervention. These children formed the third baseline to identify children who had not responded to level 2 interventions and would go through standardised assessment procedures before receiving level 3 interventions. It was a design across setting as the intervention for level 1 was in the general class though that in the level 2 was after class.

Phase I: The process started with random selection of 8 schools in Goa. This was followed by training of special educators selected by the investigator to conduct screening for entry level and identify children with learning difficulties in the areas of concept, knowledge and language development. An orientation programme to the principals of these 8 schools were given next on the aim, nature benefit, duration of the study, the respective roles to be played by the school personnel, the presence of the itinerant special educators in the respective schools, the varied modes of evaluation and the means of monitoring progress. The progress monitoring was done by a 3 part researcher designed tool called Sharanya which contained three main tests-concept development, knowledge development and language development. The tool was a 3 part tool – Sharanya-A, Sharanya-B and Sharanya-C intended for measuring concept, knowledge and language development in children of the middle school level to identify respectively children at risk for learning difficulties after the initial screening,
followed by non responders to tier 1 (level 1) intervention and finally non responders to level 2 intervention who would be sent for standardised assessment services before being sent for tier 3 (level 3) intervention to determine their exact nature of difficulties.

The screening of 787 children of Vth standard in the above mentioned 8 schools was done by means of a screening tool called Sharanya -A by the special educators and 539 children were identified with learning difficulties in the areas of language, concept and knowledge development. These children would receive level 1 interventions along with other children in the general classroom by the teachers who would receive training on teaching strategies and alternative evaluations in a 4 day workshop.

**Phase II:** The level 1 intervention would be impacted by these regular teachers. These teachers were selected by the principals of the respective schools and all 40 of them would be teaching any of the academic subjects like Science, Maths, History, Geography or English in the Vth standard for the entire academic session. The teacher training was focussed on identifying behaviours that facilitate learning and then provide activity based learning and related class management skills for creating a positive learning environment to facilitate social behaviour along with the training on organisers and guided notes as strategies; scheduling as facilitator and alternative modes of evaluations covering project based exams, group discussions, open book exams and paper pencil exam for identification of strengths and difficulties of children.

The aspect of social behaviour was intermingled with the process of learning itself. Teachers were asked to jot down the behaviours of the children if they occurred inappropriately more than thrice in a session. This was done in general with regards to following instructions, being attentive, showing sit in behaviour, showing organizational behavior by managing material of self, making appropriate conflict resolution in the form of not using abusive language, aggressive behavior, communicating with peers, approaching the teacher only when it is necessary and accepting correction with respect.

This data was to be used for discussion during the focus group interview that was conducted during the intervention sessions. The teachers were told to observe the children’s performances during the subsequent sessions with respect to the above mentioned behaviours. They were also told to note whether a pro learning environment was being built as well. They were asked to look into the factors that were interfering with the learning environment to promote positive social behaviour.

A 10 point questionnaire with a rating scale was given after the completion of the teacher training to the principal of each school to be rated by the principals in consultations with the teachers involved in the training.

**Phase III:** 40 teachers gave intervention to these children for 12 weeks through Activity based Teaching, Organiser use, Note Book Modification/ Guided Notes at the end of which evaluation was done by project based exams, group discussions, open book exams and paper pencil exams. The answer sheets of paper pencil exam of children identified “at risk” receiving level 1 intervention in the general class would be corrected and handed over by the
mainstream teachers to the special educators. The special educators were given separate training on the usage of Sharanya-B to monitor progress through the data in the corrected answer sheets and identify children for level 2 intervention.

Teacher corrected exam sheets of children identified as children with learning difficulties were sent to special educators who evaluated those on basis of Sharanya-B. Children who had scored 2 or below in the composite score of concept, language and knowledge development in Sharanya-B were considered as non-responders to level 1 intervention. Finally, children who were given 2 or below in Sharanya-B by the special educators and simultaneously scored 30% and below in all modes of evaluations done by the mainstream teachers would receive level 2 interventions.

**Phase IV:** Before the onset of level 2 interventions, mainstream teachers as well as the special educators were given a 3-day workshop in curriculum adaptation emphasizing on instructional, methodological and delivery modifications by using strategies like VAKT, structured teaching, and using resources like flash cards, visual schedule, and computer assisted presentations of the chapters covered in the class. The different types of adaptations covered during the training were input, quantity, time, participation, level of difficulty, output and level of support.

A separate training was given to the special educators to monitor and record the progress of children receiving level 2 intervention using Sharanya-C to identify non-responders to level 2 interventions. Since there was no system of separately setting question papers on all academic subjects and correcting them by the mainstream teachers for the children receiving level 2 interventions, Sharanya-C came in where the special educators conducted evaluations and measured the performances of children in different areas.

**Phase V:** 27 teachers and 2 resource persons delivered intensive interventions for 40 children for 12 weeks using Activity based Teaching, Organiser along with part organiser, Note Book Modification/Guided Notes-computer based presentations, using play way method for intervention on spelling pattern. The study ended with the identification of non-responders to level 2 interventions (children who scored 2 or below in the composite score of concept, knowledge, and language development in Sharanya-C) by special educators using Sharanya-C. Level 3 interventions would take place only after these 21 children would be sent for standardized assessment to identify the exact nature of their learning difficulties.

The 10-point questionnaire mentioned earlier was again given to the Principals to be rerated in consultation with the teachers involved in the study. The purpose was to compare the two responses: one post training of the teachers and responses post interventions given by the teachers to understand whether RtI has been able to establish itself as a system in the schools.
6.3 Empirical Findings:

The study sought to seek the answer to the question—“Would the three level model of Response to Intervention identify children with learning difficulties?”

The findings comparing the scores of children of pre and post intervention reveal that at every stage the results have been statistically significant that is children have responded to interventions at level 1 and level 2 respectively and the number of non responders have progressively decreased. By implementing the tiered interventions, gradually at level 1 with research based strategy interventions and level 2 with intensive interventions, the external factors in the learning environment of the child that could have hindered learning were negated so that before they entered the final level 3 interventions they could be sent for standardised assessments procedure to determine the exact nature of learning difficulties. Thus the preventive nature of the model have facilitated in reducing the number of children with learning difficulties who with timely guidance and assistance have been able to respond to the general curriculum and at level 2 stage been able to have identified a few who may require special education.

The second question that the study looked for an answer was—“Would intervention at level 1 enhance the performance of children “at risk for learning difficulties” in concept, knowledge and language Development?”

The results reveal that there has been significant improvement in each of the areas namely, concept, language as well as knowledge development after level 1 interventions. The results also show an improvement in overall performance that is a sum total of concept, knowledge and language development. The probable reason could be the integration of activity based learning with the content areas in a suitable learning environment created by the usage of class management techniques a class of minimum 40 children. Children in this participatory atmosphere where they could take active roles were motivated them to learn and interested in acquiring concepts thereby aiding in concept development. The subsequent use of organisers and guided notes (note book modifications) have facilitated systematic storage of procured concepts and eased the process of recall during exams thus helping in knowledge development. The continuous exchange of ideas during activities, transferring information from the organisers into answer formats by constructing sentences and emphasis on writing indigenous answers instead of rote learnt products have all facilitated language development.

The third question that was set before the study was “would alternative system of evaluation improve the performance of low achievers?”

On comparing the performances of children who had scored 40 % and below in paper pencil exam with their performances in the three types of alternative modes of exam that is in Open Book Exam, in Project Based Exam and in Group Discussion in Science, History, Geography, Maths and English, the results were found to be statistically significant in each case. The implication of each type of evaluation needs to be discussed separately. Children acted positively in response to open book exam even though structurally it was similar to paper pencil exam. The stress of remembering and recalling the content was absent in this
mode of exam. It became more like a fun exercise where children had to locate, organise answers from the content already given to them. It also opened incredible opportunities for teachers to understand strengths and deficits of children and formulate their future intervention strategies. In the project based exam children were responsible for their own learning outcomes right from the beginning of the process involving collection of materials to the presenting of the end product that represented the culmination of the process. These concepts of sharing of responsibilities, individually being responsible for the collective good of the group and creating an artefact jointly within the group rekindled their interest in learning and deflated the exam fear completely thereby unravelling a group of youngsters eager to perform. Group discussion was difficult for most of the children as the mastery over the Queen’s language was not there at this stage in most. But group discussion revealed the benefits of collaborative learning where peers were motivating a particular child to share ideas and speak. Due to the interactive set ups of these modes of alternative evaluation eased the relationship between teachers and students as well.

The fourth question posed by the study was “would training the mainstream classroom teachers in teaching strategies increase the effectiveness in general classrooms?”

The performances of children in the paper pencil exam of Science, Maths, History, Geography and English have been compared before and after receiving intervention at Level 1. Significant improvement have taken place in children’s performance after intervention at level 1 given by teachers who have received training for intervention at level 1. This definitely shows that an effective teacher training must have prompted the teachers to use strategies like activity based teaching for better understanding of concepts. The building up of organisers with the children on which they were trained in and systematic transfer of information in the brain through notebook modifications have resulted in recall of multiple concepts, linking of various concepts in the exam resulting in better academic performance. Though the training was for a brief period of 4 days but it involved hands on activities where teachers themselves had to participate in a proactive manner working consistently within a group. The pattern of group involvement and participation followed in the level 1 intervention was a prototype of that followed in the training which probably made it easy for teachers to adopt and practise in their classrooms. The training was not limited to the
workshop phase only in the sense that regular weekly meetings and on call presentations were carried out by the researcher in each of the schools which increased the motivations of the teachers to take on the multifarious roles in this RtI model.

The next question established was “would the performance of non responder children after level 1 significantly increase in concept, knowledge and language development after intervention at level 2?”

The results at this stage reveal some interesting findings. On comparing the pre and post performances of the children receiving intensive level 2 interventions it is revealed that though the improvement is statistically significant in the composite score of concept, knowledge and language development. Individual findings show only knowledge development have significantly improved but neither concept nor language show significant improvement.

The improvement in the overall performance could be due to the resources prepared by the special educators in the form of scaffold text books, notebooks with answers represented by organisers, computer assisted presentations with greater number of visuals with opportunities for sequential recall that were used both by regular teachers and special educators during interventions. With the use of structured activities emphasising on combination of movement based, reading based and writing based activities utilising memory strategies it was easier for children to give correct responses in their evaluation sheets. Credit must also be given to the prior planning of materials, use of human resources and spacing out of sessions.

The absence of marked improvement in the concept development could be for various reasons, the principal one being the presence of too many concepts of abstract nature especially in Social Sciences made it difficult for children to grasp. Also along with modified teaching these children would have benefitted from modified evaluation as well like a multiple choice question paper or short duration question papers with reduced content which in the present circumstances was impossible to offer.

Language development also failed to show significant improvement as most of the children already had very little command over English language and a weak foundation prevented a positive outcome. They could have definitely benefitted from the structured language activities to strengthen their Syntax, Semantics and Spellings if the ratio of benefactor and beneficiary could have been less which again was not possible in the given situation. It could have yielded positive results if along with the special educators the regular teachers would also have done a follow up of language development activities in their remedial classes which was again not possible due to time constraints.

The next question that the study wanted to find an answer to was”” would the three tiered response to intervention model be effective in identifying children ‘at risk for learning difficulties and remediating the deficit areas?”
The findings of the overall comparison of the ratings given post training and post intervention are significant thus establishing that RtI can be established as a system to effectively identify children with learning difficulties and remediate the deficit areas.

Establishing a system cannot be the responsibility of a single individual; every cog in the wheel has a role to set it in motion. The primary role was be taken up by the management who were made clear be clear about the process so that the role of every individual involved in the process could be carved out. It was also mandatory that they stand by the apparent changes in the system that the new structure demands. The principal’s role was paramount starting from initiating the process, convincing the teaching staff about its success, remaining a part of team meetings or at least ensuring a regular systematic feedback system of the meeting outcomes and motivating the teachers when they could be bogged down with the multifarious roles they have to play. The burden reduces with delegation of responsibilities to various teachers which highlights the creation of new leaders within the system.

It is with this decreased burden and increased conviction in the intervention results that the willingness to perform increases in the teachers. It is also extremely important to build a coordinated system between the regular teachers and the special educators who need to work in tandem to make this process a success.

At the secondary level, given the fact that teachers already have increased responsibilities prior planning was done with regards to scheduling and other structural factors so that it was easier to teach, evaluate and monitor progress of children. The ongoing professional development also kept the teaching staff abreast with the strategies to be used at different levels of intervention and the progress monitoring system to identify children with learning difficulties at the subsequent levels.

The final question that the study sought to seek an answer was Would there be a change in the social behavior of children in the general class during teaching as well as evaluation with the implementation of response to intervention model?

Based on the observational data recorded by the teachers of the general class behaviour and the data gathered in the weekly focus group interview on the aspects of following instructions, being attentive, showing sit in behaviour, organizational behavior by managing material of self, appropriate conflict resolution in the form of not using abusive language, aggressive behavior, communicating with peers, approaching the teacher only when it is necessary and accepting correction with respect the results obtained on qualitative analysis of the data reveal the following:

Though the teachers reported an increased noise level in the first week, probably due to the introduction of a new way of teaching, the following weeks showed children being attentive and followed instructions given by the teachers during teaching. The use of class management skills like seating arrangement and reinforcement brought in sit in behaviour in most of those children who the teachers had found showed out of seat behaviour frequently
prior to intervention. The system of preparing modified notebooks through active participation and managing materials required for class activities children exhibited excellent organisational skills.

Since the class was set in a constant interactive mode involving group activities, children’s participation with a systematic and interesting way of teaching content, communicating with peers became meaningful and not as a part of disruptive behaviour exhibited during the class otherwise.

The grouped evaluation system like project based exams and group discussions increased group camaraderie, maintained high group morale within the group bringing in reduction of behavioural issues like aggressiveness, use of abusive language and frequent complaints to the teachers. The class management skill involving the use of reinforcement in the form of badges to the best behaved group helped greatly in reducing inter group conflict.

6.4: Theoretical Implications:

The numbers of poor performers have constantly grown in the middle school and had become a concern for the school authorities. It would be extremely time consuming and involve wasteful expenditure to send all these children for standardised assessment. The study through RtI model aimed at gradually reducing the number of low achievers by subsequently increasing the intensity of intervention for the no responders at each level of intervention. Thus following the aims of earlier studies by Fletcher, Lyon, Fuchs, & Barnes, 2007; Jimerson, Burns, & VanDerHeyden, 2007 where “recognizing the large numbers of students who need academic and behavioral intervention in schools, educators, policy makers, and researchers have called for school-wide intervention frameworks in which students’ response to quality intervention is monitored and used to inform decisions about future intervention and placement.

This study is in conformity with the world trend where for the past few years several groups such as the National Association of School Psychologists, the Office of Special Education Program in the U. S. Department of Education, and the National Center of Learning Disabilities have expressed concerns about the continued use of an IQ-Achievement discrepancy model for diagnosing learning disabilities, and instead have proposed a model that is known as response-to-intervention (RtI; Fuchs et al., 2003; Jimerson, Burns, & VanDerHeyden, in press; Lyon et al., 2001).

As per the characteristics of RtI, in this study, ”the first two tiers gradually work(ed) towards negating external factors in school characteristics such as narrow curricula, a focus on lower-level skills, inappropriate instructional strategies, inappropriate materials and resources etc. that ha(d) been blamed for students’ failure” (Hixon & Tinzmann, 1990). Similar to the present study, eight of the studies by Case, Speece, & Molloy, 2003; Coyne, et al., 2004; Fuchs, Fuchs, & Prentice, 2004; Fuchs, et al., 2005; McMaster, et al., 2005; O’Connor, et al., 2005; Vaughn, Linan-Thompson, & Hickman, 2003 have used Tier 1 (identification) in combination with Tier 2 (e.g., differentiated instruction, curriculum modifications) with respect to the implementation of RtI. In these studies, though researchers
implemented various aspects of RtI (e.g., screening, differentiated instruction) they did not follow the tiers of RtI sequentially as a hierarchy of intervention (i.e., Tier 1, Tier 2, Tier 3) and none of them have implemented all three tiers. Only two studies (McMaster et al., 2005; O’Connor, 2000) have implemented an RtI model using all three tiers; however, the tiers were not implemented sequentially. Furthermore, the focus of one of the studies (McMaster, 2005) was on the effects of the interventions rather than the multi-tier approach.

This study has established a three tiered RtI model in urban and rural school of Goa in the middle school setting. Fewer empirically-based studies have investigated the implementation of RtI in authentic school settings, particularly schools in rural areas (Dexter, Hughes, & Farmer, 2008; Kovaleski, 2007). Although RtI seeks to meet the needs of all students, extant practices have occurred largely within primary grades, and typically in the area of reading (Bender & Shores, 2007).

Studies show few schools have systematic ways to screen all students experiencing reading difficulties including those with unidentified learning disabilities (Henley, Furlong, 2006.) Research on universal screening within an RtI framework focuses predominantly on children in kindergarten through second grade (Compton, Fuchs, Fuchs, & Bryant, 2006; Speece & Case, 2001). A far more complex situation was created in this study which desired to go beyond identification of only reading difficulties and established the model in the middle school.

The researcher has not come across a screening tool that deals with the components like concept development, knowledge development and language development though a number of studies have explored the predictive validity of specific reading assessments with respect to their ability to accurately identify children with reading challenges (Catts, Petscher, Schatschneider, Bridges, & Mendoza, 2009; Walker-Dalhouse et al., 2009). Thus an instrument called “Sharanya” was developed and validated as the practice of universal screening is predicated on the reliability and predictive value of the instrument being used, (Johnson, Smith, Lori A., 2001).

To assess and provide intervention on concept, knowledge and language areas it was necessary to work with the academic subjects prescribed by the curriculum. But the studies of RtI in major curricular areas are limited in the major content areas and in middle and high school as noted by Division for Learning Disabilities, 2007; Fuchs & Deshler, 2007; National Joint Committee on Learning Disabilities, 2005. This study thus transcended reading programs and extended the model to all major academic subjects like English, Maths, History, Science and Geography.

The findings of this study suggests that tiered interventions can be successful in the middle school level as shown by Windram, Scierka, and Silbergliit’s (2007) study that examined RtI implementation in two secondary schools to address reading and math concerns showing that a tiered model of intervention support can be successful at the secondary level.

The researcher shares the view of Shepherd, Salembier, George, 2011 who perceived RtI as a change process that was fundamentally a general education initiative rather than a special education initiative and thus emphasised a strong foundation for level 1. One of the aims of the study was similar to the study by Johnson, Evelyn S. Smith, Lori A(2001) where the
focus was on developing a strong Tier 1 general education program. The study has adopted the standard protocol approach unlike problem solving as suggested by Fuchs,98 owing to large class strength. Studies of Jenkins, Peyton, Sanders, & Vadasy, 2004; Vaughn et al., 2003; have followed standard protocol approach. Findings from these studies support the effective use of instructional supports via either multiple intervention phases or tiers of service to support student outcomes.

Since too few evidence-based interventions for students within secondary schools and a lack of systematic data collection systems--findings that are in accordance with the extant literature (Paige, 2006; Papalewis, 2004) are available; intervention modules and progress monitoring system were tailored for the study. This study supports the view of Stecker, Lynn, Fuchs, 2008 that selecting core programs and instructional practices for a broad range of students, including students who are low achieving, is critical to the RtI process.

Only one study by Case, Speece, & Molloy, 2003 included an assessment of the quality of the general education curriculum and instruction, a defining feature of RtI used to determine whether the majority of students are achieving benchmarks in learning and behavior in Tier 1 prior to implementing differentiated instruction. But the researcher mostly had to depend on indigenous strategies as there is minimal research-based guidance for effective implementation of tiered interventions for older students (e.g., Grades 4-8) (Kamil et al., 2008).

The professional development programme offered on teaching strategies for teachers imparting level 1 intervention though was for a 4 day period the researcher, similar to Shepherd, Salembier, George, 2011 “offered this level of assistance on an "as needed" basis for a full year following initial implementation”. During the level 1 intervention it was often required by the researcher to conduct hourly sessions on strategies, class management techniques, modes of evaluation and setting of question paper at the behest of teachers in some of the schools. This collaborates with the study by Shepherd, Salembier, George, 2011 where “Individuals and small groups of teachers who identified specific areas of need in relation to the implementation of RtI requested ongoing professional development offerings”.

The results of a comparative study of the performance of all the students in the paper pencil exam show significant improvement in the post intervention thus supporting the view of Bergstrom, 2008; Kratchowill et al., 2007 that the model of professional development used in the study holds promise because it combined an intensive effort at the outset of the initiative with opportunities for ongoing professional development. The findings of this study is akin to the one by Vaughn , Cirino , Wanzek , Wexler , Fletcher , Denton , Barth , Romain and Francis ,2010 where all students benefited from their teachers' participation in a professional development designed to enhance the quality of the core reading instruction (i.e., Tier 1).

The findings of this study which has extensively used activity based teaching show improvement in children’s overall performances both in level 1 intervention in general classroom and intensive level 2 interventions after class. This contradicts the findings of the studies by Kroesbergen and Van Luit (2003) that show methodologies utilizing explicit/direct instruction were more effective for teaching basic math facts and problem solving to students with learning difficulties than mediated or assisted reform-based instruction.
One possible explanation could be a combination of systematic use of organisers in conjunction with activity based teaching which helped students gain conceptual, holistic understanding more quickly as predicted by deKleer & Brown, 1981; Satchwell, 1996. It also supports the view of Johnson, 1992a; Johnson & Thomas, 1992; Satchwell, 1996; West et al., 1991 that organisers may improve overall system understanding, enhance ability to understand function and behavior of systems, enhance understanding of causal relationships, and improve learner ability to reconstruct conceptual models.

The second reason could be the use of guided notes in the form of note book modification similar to the theory of Heward, 2001; Lazarus, 1991; 1993 “many supplemental activities can be embedded into guided notes to support student learning”. This usage is discrete from the standard definition given by Heward, 1994, guided notes are -“teacher-prepared handouts that 'guide' a student through a lecture with standard cues and prepared space in which to write the key facts, concepts, and/or relationships”.

It is evident from the results that children who have fared poorly in the paper pencil exam have mostly fared well in project based exams in all the academic subjects. Fuller’s (2003) suggestion of project based assessments for children displaying poor cognitive performance thus holds’ water. A higher score in alternative assessments in the form of Project based exam as well as Group Discussion supports the view of Ames (1992) -“motivation is often associated with quantitative changes in behavior such as higher achievement and more time on task.” Significant improvement of low achievers in open book exam where a stress free environment was created also supports the opinion of Brophy (1987) - “One of the preconditions to motivating students to learn is to provide a supportive environment.”

The collective decision making by teachers and special educators for selection of children for tier1 and tier 2 as seen in the study by Shepherd, Salembier, George, 2011, was followed in level1 of this study but could not be exercised in level 2 due to lack of increased levels of communication and collaboration among general and special educators. The study for level 2 had to follow the model established by Rockley and colleagues (2007) where the special education teachers are responsible for data collection.

Also a modified system of evaluation could not be established exclusively for children receiving level 2 intervention as most of the teachers felt this would lead to exclusion and peer ridicule and “unnecessary labelling” as opined by Wodrich, Spencer, and Daley (2006). This factor as well as the lack of ease in which instructional curriculum can be altered, adjusted, modified, or scaffolded is in part due to the traditional print based format of the curriculum materials themselves as expressed by Hitchcock, Meyer, & Rose, 2002 may have contributed to the absence of significant improvement in concept development in level 2.

Lack of significant improvement in language development in level 2 interventions unfortunately is in accordance with the results of research on RtI literacy development for middle school students which have not been particularly encouraging (Denton, Wexler, Vaughn, & Bryan, 2008; Vaughn et al., 2010). While use of RtI may alleviate the growing dissatisfaction with the ability-achievement discrepancy model, little success has been found in applying this approach at secondary levels (Bradley & Danielson, 2004; Vaughn et al., 2010). The reason could be that, in many cases, students with learning disabilities, along with other struggling readers, are not receiving intensive literacy-development intervention.
because Tier 1 in middle school generally does not include intensive small-group instruction in early reading (Graves, Brandon, Duesbery, McIntosh, B. Pyle, 2011).

This is further supported by the findings of this study where no significant improvement has been observed in spelling pattern, a subcomponent of language development. Unlike the study by Vaughn, Cirino, Wanzek, Wexler, Fletcher, Denton, Barth Romain, and Francis, 2010 where regular teachers also provided intervention in vocabulary development, in this study due to time constraint spelling pattern was dealt only by the special educators. No significant improvement in spelling pattern thus reemphasizes the suggestion by Vaughn & Fuchs, 2003; Vaughn & Klingner, 2007 that general education and special education teachers work together to systematically assess problems and intervene as part of the general education cycle.

So it brings us back to teacher efficacy and the researcher supports the view of Nunn, Jantz, Butikofer, 2009 that increases in teacher efficacy were associated with perceptions of improved outcomes of intervention, satisfaction with results, collaborative team process, and data-based decisions which is relevant given the interest and expenditures of material and human resources in establishing RtI model in schools.

Thus the systemic issues necessary to establish RtI as a torchbearer to spearhead the foundation of an optimum learning environment for all need to be dealt with. The results of the study establishes the effectiveness of the three tiered response to intervention model in identifying children ‘at risk for learning difficulties and remediating the deficit areas and to a certain extent disagrees with the findings of Johnson and Smith (2008) that the greatest barrier to RtI implementation within middle schools was the lack of a systemic process that uses progress-monitoring data to make important educational decisions. The results of the study thus contradicts the findings of the study by Sansosti, Telzrow, and Noltemeyer (2010) that systematic and experimental application of evidence-based interventions within secondary settings; and decision rules of how systems could be modified (e.g., scheduling, students earning credits toward graduation) to ensure sustainability of RtI approaches was missing at the practice level.

The researcher supports the view of Sansosti, Noltemeyer, Goss 2010 that success of RtI hinges on the support it receives from school leaders. The findings of the study contradict the results of the study by Sansosti, Noltemeyer, Goss 2010 where Principals perceived RtI as important but difficult to put into practice within the high school setting. The strong leadership qualities exhibited by most of the principals of the schools incorporated in the study support the conclusions of Marzano, Waters, and McNulty (2004) that principals who were knowledgeable of contemporary curricula and instructional approaches, provided resources and supports to teachers, and challenged the status quo of school-based practices, functioned as effective change agents and had demonstrable improvements in the outcomes of the students within their schools.

But the researcher is in agreement with the view of Kincaid et al., 2007 that although principals were targeted for this study as a result of their significant influence in leading and managing school-wide change, change is unlikely to be wholly successful without the corroboration of teachers, support staff, and special services personnel.
A social behavior model of RTI promises to be an extension and new application of the already substantial research base regarding positive behavioral interventions, functional behavior assessment (FBA), and early intervention (Sugai et al., 2000; Vaughn et al., 2003). Despite the lack of specific empirical support for RTI in the social behavior domain, similar models of behavior support have been implemented in schools. Applying RTI in schoolwide positive behavior support (SW-PBS; Lewis & Sugai, 1999) can be seen in the standard protocol approach which when implemented for all students in the general classroom might require schools to train teachers first to identify the behavior, the strategies to integrate the positive behavior within the learning system and then explicitly teach the students expectation-compliant behavior.

The studies on social behavior show students with a rate and level of reading skill below their classmates (dually discrepant performance) had more significant behavior problems. (Speece, Case, and Molloy, 2003). On the other hand in a study (Carr & Punzo, 1993) it was found that as the students' productivity and accuracy levels increased, and the management of behavior was addressed through internal rather than external controls. Such findings lend support to the importance of building up an enriched learning environment with maximum opportunities to learn so that all children have a sense of achievement leading to high self esteem.

The researcher has followed differentiated instruction in general education; and school-wide positive behavior supports which have been proposed as fundamental components of a comprehensive model (Kovaleski, 2007). The researcher purposely avoided the method of systematic behavior observation of a few children and emphasised more on the learning environment. This was similar to a study by Barnett, Elliott, Wolsing, Bunger, Haski, McKissick, Vander Meer, 2006 for Tier 1 intervention selection positively stated rules were selected, posted, taught, practiced but not with specific children, instead with the entire class. Thus findings on improvement on social behavior match with Investigations of a multtier prereferral intervention model which also indicated increase in task completion, comprehension, and time on task for participating students (Hartman & Fay, 1996; Kovaleski, Gickling, Morrow, & Swank, 1999).

6.5. Recommendations for future Research:

The arena of RTI in the schools is huge and further research can be broadly based on the following areas:

- Firstly, developing a screening tool to specifically identify children with difficulties in Mathematics in the middle and secondary level.
- Secondly, developing a curriculum based measurement testing all the major academic areas that can be stage specific that is at the primary, middle and at the secondary level to track the progress of children who have received intervention right from the primary, to middle to secondary level.
• Thirdly, further research is required to see if the techniques of interventions used in this study for middle school can be used in the secondary level as well to produce positive outcome in level 1 intervention.
• Fourthly, comparing success of standard protocol approach versus problem solving approach in level 2 interventions especially in the areas of language development. Further research is also required to see if a combination of standard protocol and problem solving approach yield better success in level 2 interventions.
• Fifthly, research needs to be done to make out if similar findings can be replicated on a different population that is separately on the primary as well as on the secondary level.
• Sixthly, further research is required to make critical decisions about the timing, extent and nature of special education services to be provided within the tiered interventions of RtI.
• Seventhly, deeper probe is required to study the variables influencing the collaboration between general and special educators involved in RtI implementation.
• Eighthly, further research on structural factors like scheduling, data recording, and presence of multiple teachers during alternative modes of evaluation, especially in the middle and secondary level is required.
• Ninthly, the benefit of literacy programme in English, interwoven within the RtI model for struggling readers needs to be looked into.
• Finally, the policy changes and the administrative support required to successfully implement RtI in the school level over a number of years need to be studied.

6.6. Limitations of the study:

The study has implemented RtI programme in 8 schools of Goa both in urban and rural set up involving training of teachers for providing interventions at different levels, preparing special educators in their itinerant’s roles, monitoring progress and guiding both general and special educators on ways and means to adopt a collaborative approach in providing interventions, evaluations and monitoring progress. Thus certain limitations have affected the study though none of them have been major obstacles in hindering the progress of the study.

The study has been only on the population of Goa and has not been applied to other states of India. But the sample represented both Goan and migrant population Owing to time constraint the training programme for teachers could not be extended to a week. Hence they could not be trained on preparing computer assisted presentations and were only provided with prepared computer assisted presentations on topics from their syllabus to use during imparting level 1 and 2 interventions. Though teachers practised alternative modes of evaluation for children receiving level 1 intervention, this being the first year of RtI implementation it was not possible to set up a separate mode of modified evaluation system for children receiving level 2 interventions. Teachers were not yet prepared to take up the additional responsibility of making a collective decision along with the special educators to identify children for level 3 interventions. Also as it takes some time by IPHB in giving appointments to assess children with learning difficulties, though the procedure was initiated
the final outcome that understands the exact nature of their difficulty could not be completed for all children during the length of the study.

**Conclusion:**

The three tiered model of RtI weaving a story of hope for many children was sown in the schools for an academic year, the end of which saw the emergence of a bunch of confident happy children willing to take up challenges and desiring to learn once again. It also saw a group of teachers who through their undaunting hard work, implementation of novel ideas lay all doubts about the teaching fraternity at rest. It made some of the Principals stand tall taking the risk of putting into practice a seed of an idea meekly provided by the researcher. Thus putting aside the statistical findings and their success stories, RtI represents a vision that everybody can learn, that everybody can learn together, that everybody can learn together with joy and that is what epitomizes education.