

# **Abstracts of Research Reports**

(Conducted by SCERT in Collaboration with DIETs of Kerala)

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State Council of Educational Research and Training (SCERT)  
Kerala

## **PREFACE**

All the educational agencies in the state are working diligently to ensure quality education. SCERT has been conducting extensive research activities to provide better scientific basis for quality education. As part of this, SCERT is engaged in many research activities by itself and in collaboration with many educational agencies like Universities, Colleges and DIETs. Now we have conducted 14 research studies in collaboration with the DIETs in Kerala. District level research programme started by SCERT as a new step in decentralised educational research has attracted the attention of the educational field. These studies are aimed at discovering new areas of knowledge that are essential for activities such as curriculum development and textbook preparation. The programme was designed to set up educational research teams in all districts by empowering the DIET faculties in research methodology. It is noteworthy that the studies conducted in all districts based on different themes have attracted national attention. It is important to take necessary steps to disseminate the research findings and implement the suggestions that have emerged from these studies. The abstract of the study reports by various DIETs is published here. It is expected that the findings of these studies will benefit researchers inside and outside Kerala.

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## **Enhancing English Language Competency of VIII Standard Students through Sports and Games in Thiruvananthapuram District**

Twentieth century witnessed great advancements in science and technology and this enabled many new ways of sharing information and doing business. India's international commercial activities led to the need for acquiring proficiency in English as an international language. Now, English is not just the language of the administrators and policy makers but also the language of the business and professional class.

In India, the English speaking population is only about 3-4%, But India is among the top three countries in the world with the highest number of English speakers. English is taught as a second language at every stage of education in all states of India and has been accepted as the main medium of instruction in higher education. English is also the state language of two states in eastern India, Meghalaya and Nagaland.

In India, English has become an integral part of the curriculum almost at all levels of education. However there are various social, political and cultural factors that affect the position of English in different boards, universities and other institutions. Even the curriculum offered and evaluation tools employed are very diverse across the country. The model of English offered to the learners lacks uniformity and it is this question that continues to challenge the policy makers and education planners. While most States accord English the position of second language, some others treat it as the third language. In Kerala, Teaching of English starts in standard I in all the government schools, government aided schools and recognised unaided schools. English is a compulsory subject in the school curriculum. In the mainstream, English is introduced in class I whereas the other second language, Hindi is taught from class V.

English has a wide spread prestigious status in our society. It has a crucial role in education right from the primary level. At the college level English remains as the medium of instruction. Besides, for professional courses entrance examinations are in

English. Proficiency in English is inevitable to get through entrance examinations either in the national level or the state level.

Imparting competency in English language should begin right from the school level. Teaching of English is not an easy job, especially to adolescents. Adolescence is a difficult time in a child's life when a lot of psychological and physical transformations take place. Therefore, it is significant for teachers to become familiar with these changes in order to work effectively. There are plenty of useful and effective methods that teachers can integrate into their lessons to increase students' understanding and improve overall competency. Here comes the role of Total Physical Response as a solution to the issue.

The present study is a try out among Standard VIII students as an activity package and hence entitled: **'Enhancing English Language Competency of VIII Standard students through Sports and Games in Thiruvananthapuram district.'**

### **Objectives of the study**

1. To assess on English language competence (Grammatical competence & Linguistic competence) of VIII Standard students in Thiruvananthapuram district.
2. To examine the opinion of the Physical education and HST English teachers about their views on the possibilities to enhance the competency by integrating English teaching and learning with sports and games.
3. To develop an activity package for enhancing English language competence (Grammatical and Linguistic) of VIII Standard students through sports and games.
4. To try out the developed activity package for enhancing English language competence through sports and games among VIII Standard students in Thiruvananthapuram.
5. To analyze the evidence of performance of the students during try out of the package.

6. To collect the Reflections of the physical education teachers and HST English during the tryout of the activity package.

### **Tools & Techniques used for the study**

1. Rating scale for answer script analysis.
2. Focus Group Discussion Guide for Physical Education teachers.
3. Focus Group Discussion Guide for HST English teachers.
4. Reflective Appraisal Sheet for High School English Teachers.
5. Observation of the present status of the sample schools.
6. Activity package for enhancing English language competency of the target group.
7. Sports kit
8. Performance evidences–verbal and written- collected during the tryout of the Activity package.
9. WhatsApp messages and chats.

### **Methodology**

#### **Method adopted for the study**

The present intervention aims to enhance English language competency of VIII Standard students using a specially designed learning strategy through Sports and Games. This study utilizes the two-phase sequential exploratory design of mixed methods where the topic was qualitatively explored before proceeding to the quantitative phase. This design is predominantly used when the research study seeks to develop and test an instrument since one is not available (Creswell, 2013) or to identify important variables to study quantitatively when the variables are unknown.

#### **Sample**

The total students of standard VIII in Government and Aided Secondary Schools in Thiruvananthapuram District is the population of the study. Purposive sampling method was followed in the study. A sample of six schools from Thiruvananthapuram revenue district were selected giving prominence to Govt., Aided, Urban, Rural, Coastal, gender specific, Co-ed and Residential schools fulfilling following criteria:

- An experienced and permanent HST, English (who has taken English Language and Literature as their main subject during his/ her UG/ PG programme with B.Ed. (English)).
- A permanent Physical Education Teacher.
- Open playground.
- Proper infrastructure (smart and spacious classroom)
- Proximity of the class and playground.
- Cooperative school management and PTA

### **Tools used for the study**

The instruments that are employed to get new facts and ideas to explore new fields are called tools. The selection of suitable tools is an important aspect of any research work. For the present study, the following tools were used:

1. Focus Group Discussion Guide for Physical Education Teachers
2. Focus Group Discussion Guide for High School English teachers
3. Rating scale for answer script analysis for HST English
4. Reflective Appraisal Sheet for High School English Teachers

### **Technique used for the study**

Observation of schools

### **Materials used for the study**

- a) 'S for English' Activity Package
- b) Sports kit
- c) WhatsApp group
- d) Performance evidences – verbal and written collected during tryout of the activity package.

### **Statistical Techniques**

The following statistical techniques were used in the analysis of the collected data.

1. Computation of statistical indices like Mean, Standard Deviation, Skewness and Kurtosis.



2. The test of significance for difference between adjusted means.

### **Findings of the study**

The following are the findings arrived at from the quantitative and qualitative analysis of data

- Through the implementation of the package the confidence level of the students and teachers has considerably increased. They started loving the language and started viewing English Language Teaching from a different perspective. The immediate feedback received has encouraged them to live in the language despite the limited resources outside the classroom situation.
- The discourse analysis of the term end examination witnessed a considerable change in the usage of sentence structure. (SVO pattern).
- Proper usage of phrasal verbs, prepositions, suffixes and prefixes at requisite places has definitely expanded their knowledge in English Grammar in an informal atmosphere.
- Lots of activities were performed as a result of which group activity and peer work was encouraged.
- Apart from that, the teachers were successful in creating an English atmosphere in the classroom as part of the implementation of the package which actually reflected in their other English classes as well.
- The students learned and later on showed an interest in organizing events for their class as well as their schools. The District English Sports Fest was an eye opener to them.
- The research team realized that in many schools English teachers did not handle English classes in high schools. To have one post for English (HST) in a school, a minimum of 5 classes are necessary. That means if a school has only 4 divisions in total in high school, English is taught either by the Maths or Social Science teacher. This is definitely one of the reasons why English competency has dropped down in the government schools in our state.
- When the research team visited the sample school for monitoring the progress of the package implementation, they found the following positive impacts of

the package such as Individual attention, love towards English, improvement of listening skill, improved, positive atmosphere in classroom. The improvement of CWSN were seen increased.

- Certain constraints were also identified such as large classroom population,time constraint issue and time table arrangement.
- Majority of the teachers commented *that learning* English is not an easy job for students of Standard VIII especially Malayalam Medium students in Kerala. Though English is introduced in Class I, opportunities are not available for students to interact in English in a fear free atmosphere.
- Most of the students are not able to perform well because of their inability due to adverse circumstances at home ( drunken, broken families).
- Students' immediate circle/society and family are their closer points whereby they grasp primary tools of language or else. But here children get opportunity to listen English only from school.
- Eighth standard students are a vibrant group of students who have just come from the upper primary section. Majority are newcomers to the present school. They are curious, active and at the same time disoriented.
- Additional Reading and writing assignments, action songs to curb boredom, a word a day, English assembly, Club activities were the additional activities given to students of Standard VIII by their teachers.
- Three teachers have 5 to 10 years teaching experience and the remaining three have more than 10 years.
- All teachers are of the opinion that they created English atmosphere in their classroom by providing English notice board, communication in English in the classroom, weekly English club activities.
- Different steps were taken for vocabulary enhancement such as Glossary making, Dictionary reference activities, Language games, vocabulary enrichment exercises. (Crossword puzzle).
- Majority of the teachers opined that Cooperative learning is an extremely useful strategy that it involves students in established, sustained learning groups or teams. The group work is an integral part of, not an adjunct to, the

achievement of the learning objectives of the class. Cooperative learning fosters individual accountability in a context of group interdependence in which students discover information and teach that material to their group and, perhaps, to the class as a whole. The teacher's role also changes from lecturer and knowledge-holder to facilitator and guide. Cooperative learning is so effective because it is structured, creates a classroom community, is a sustained approach, enhances students' communication skills, encourages a growth mindset, balances interdependence with individual accountability, and responds to classroom diversity. But most of the time due to time constraint we resort to the age old method of lecturing to finish the portions.

- Teachers' view on utilization of teacher talk and converting it to student talk in overpopulated class often discourages them to opt for student talk time. Completing the portions was their main concern. However they engaged the students in the target language during club activities and assembly.
- All teachers have adapted their Teacher Manual for slow pace learners and CWSN by providing separate area in every Teaching manual so as to simplify certain activities according to their ability.
- All teachers narrated certain incidents related to usage of the school library of students. Most of the boys chose sports magazines to fiction whereas girls opted for fun filled activity books.
- The attitudes of parents towards the all round development and educational achievement of their students have created a great gap between the school-teaching-learning programme and thus make it difficult to improve English language learning.
- PTA helps teachers to understand students from the parent's perspective and vice versa. It helps parents to know all about the functioning of the school, problems and so on. It works towards making the school better and the best place to get a quality education.
- All teachers pointed out certain constraints to enhance English language competency among the learners. They are lack of positive attitude towards English language, lack of positive and conducive learning environment –

overcrowded classrooms, limited teaching learning resources, lack of confidence, and lack of Continuous Professional development of the teacher.

- All teachers suggested certain remedies to overcome the constraints and make the learners competent in English such as creating the gaming atmosphere at the learning venues. Games and sports provide the opportunities for the students to bring out their inherent sportsman spirit.
- Teachers pointed out certain strategies for tapping out students' interest towards sports and games for enhancing English language competency because nowadays, school kids are engaging themselves in playing digital games like PUBG, Game of Thrones, Blue Whale, and many more which are rarely letting them make any body movement. This behavior in students has made them mentally and physically inactive.
- Most of the teachers expressed their willingness to integrate Sports and Games with English to enhance English competency among their students with the help of a Physical Education teacher in their school.
- Physical Education teachers pointed out the following points;
- Sports keep the mind and body active as children learn a lot of things through playing. Right from the toddler age, they enjoy playing more than anything else. To develop critical thinking in school kids, the learning based gaming models are needed to be installed in the school space so that every child going to the school should have access over all the indoor and outdoor games and develop the required skill set for future growth which is expected to be tough comparatively.
- Games in school nourish the children's mind and help them in being more active and attentive in their journey of pursuing education. Interaction with others teaches them how to handle success and to be a team player.
- Sports itself creates the learning environment where school pupils learn to run, face, build, lose and win together. Intellectual and emotional quotient of the school kids can get raised comparatively than the students who do not play sports and games.

- Cognitive skills like conscious mental activities which include thinking ability, reasoning capacity, understanding mindset, learning attitude, and remembering power get strengthened while game play.
- All teachers participating in the FGD suggested the following sports and games which can be used for enhancing English language competency of students of Standard VIII viz; Board games including Scrabble, Football, Cricket, Basketball, Shuttle badminton/ Chess can improve concentration of students.
- Involvement of School and parents improved the efficacy of the package.
- Teachers' innovative strategies and creative ideas enabled the students to love the English language.

## **Suggestions**

- The teachers require Continuous Professional Development apart from the subject specific Teacher Empowerment Programme they receive annually during vacation.
- The problem of using prepositions, linkers, phrasal verbs, etc. at the right time looms large among the teaching learning community. This can be solved by providing a nonconscious atmosphere to understand the rules of the structure. Total Physical Response can do wonders in this context.
- In order to pave way for students' prosperous future, we need to engage them in more intellectual, emotional & physical activities. In this, it is the teachers and the parents may sit together and discuss various issues regarding school and even a particular student. The unfavorable attitudes and conditions must be monitored and curtailed professionally and early before and after the programme in learning or their performance in school.
- Teachers should wisely utilize available learning resources to enhance students' positive attitudes, neutralize any negative attitudes towards learning and performance.

## **Sports Maths - An Innovative Strategy for Improving Math Learning**

Sporty games are liked mostly by the children at Primary level. Children's favorite sports activities and fun games are mainly included in the learning strategy – Sports Maths. It aims to improve the learning of mathematics by using children's favorite sports. Only a healthy person can function efficiently and thus think rationally. Along with this one needs to acquire life skills such as going forward without getting discouraged by victories and defeats, cooperation through teamwork, facing challenges, problem-solving skills and the ability to make quick and appropriate decisions, through learning Maths. It is also possible to acquire these skills more easily through sports and games. By using their favorite sports and games and acquiring mathematical ideas unwittingly, children will start to solve problems with a mathematical awareness. They will reach the level of excellence by enjoying the subject. As it becomes universal, the study of mathematics will become enjoyable. There is no doubt that this study will help teachers to equip themselves for developing such innovative methods. It was in this context action was taken to undertake this study.

### **Objectives of the study**

1. To integrate sports and games with mathematics in a way helps to acquire Maths learning skills naturally.
2. To prepare sports integrated Math learning package that suits to implement Sports Maths.
3. To evaluate the effectiveness of the sports integrated Math learning package.

### **Methodology**

#### **Method adopted for the study**

Under the leadership of SCERT and DIET, Kollam, the learning package promoting Sports Math is being formulated through various workshops involving teachers, DIET

faculty members and Educationalists. The experimental method is used to determine its effectiveness. The method adopted is to find out the effectiveness through pre-test and post-test analysis after applying the Sports Maths learning package in a selected experimental group and the ordinary learning method in a controlled group.

### **Sample**

Two schools (a Government school and an Aided school) in the Kollam district were selected for the study.

1. Chembakassery LPS, Bhoothakkulam
2. Vivekananda LPS, Kadambanad

The medium of instruction in both schools is Malayalam. A great deal of effort has been made to include children from all walks of life in this study. 52 children in the experimental group and 49 in the controlled group have been included. Thus, a total of 101 children were selected for the study.

### **Tools and Techniques used for the study**

1. Sports-Maths learning package
2. Achievement Test
3. Questionnaire for Focus Group Discussion.

### **Statistical techniques**

The following statistical techniques were used to analyze the data.

1. Arithmetic Mean
2. Standard Deviation
3. t-test
4. ANOVA

### **Findings of the study**

- Through a consortium of sports teachers and Maths teachers, many possibilities have been discovered to integrate sports and games with Mathematics.

- In addition to developing children's mathematical abilities, the development of social skills is also possible through such integrated mathematical activities.
- It can be seen that the Mathematical package called Sports-Maths is very effective in enhancing the mathematical abilities of children.
- Experiments have shown that the Mathematical Package Sports-Maths is very effective in making mathematics learning enjoyable.
- Focus group discussion of parents opined that the implementation of the math package has helped to make effective progress in mathematics learning.
- The package has helped the children in instilling interest in children in learning mathematics.
- It was found that low achievers are seeking the help of other children for math learning.
- Parents found out that children are paying more attention to daily life activities and do experiments than ever before.
- From the continuous assessment it is found that the students can accommodate Mathematics in a practical way.

## **Suggestions**

- Care should be taken to integrate sports Maths activities while preparing the school curriculum.
- Sport Maths activities should be included when preparing the textbook.
- Workshops can be organized at the state- level can develop sports and game activities that suit to integrate with Mathematical skills.
- Mathematical skills and suitable sports activities can be prepared in book form and distributed to all schools.
- Separate sessions can be included in the Teacher training module for sports math activities.
- In teacher training programmes there should be opportunities to practice sports math activities.
- Workshops can be conducted at the school level to make suitable tools for sports activities with the help of parents using locally available materials.



- Appropriate sports activities can be integrated with the lesson while planning classroom learning activities.
- Sports Maths package can be prepared for the other units of Class 4 in this manner.
- Sports Maths package can be prepared to deal with mathematics from classes 1 to 12.
- Other art-forms can also be integrated into Mathematical abilities just as sports do.
- Packages can be prepared for different classes integrating work experience areas with mathematical skills.
- While preparing modules for training teachers in arts, sports and work experience the introduction and practice of mathematical skills must be included.

# **Integrated Education at the secondary school level with Vocational skills and Life skills: An Academic Intervention**

In Kerala, only 30 to 35% of the higher secondary passed out students opt higher studies. The rest (65%) go to find means of life or enters to life. Therefore, in order to create a work culture that is conducive to the general society, it is necessary to find a system that will suit the tastes of the children from the secondary level onwards and provide vocational education accordingly. The society needs to develop vocational skills in all students completing higher secondary education.

As the state does not fully switched to NSQF, “Integrated Education of Vocational skills and Life skills at the secondary level: An Academic Intervention Study” has become the need of the hour for it may give a clear sense of direction to the curriculum revision in the coming years.

The study has been titled “Integrated education at the secondary school level with vocational skills and life skills: An Academic Intervention Study” as it combines academic intervention with vocational skills and life skills of the curriculum at the secondary level.

## **Objectives of the study**

1. To explore the potential of the current curriculum in developing vocational skills and life skills.
2. To develop the learning package required for the development of vocational skills and life skills.
3. To test the effectiveness of the learning package in accordance with
  - a) Academic Achievements
  - b) Vocational Skills &
  - c) Life skills

## **Hypotheses**

Vocational skill and Life skill integrated Learning Package is effective in enhancing Vocational Skill and Life Skill among Secondary School Students.

It can be tested through the following hypotheses.

- There exists a significant difference in the means of the scores of learning outcomes of Pre test and Post test.
- There exists a significant difference in the means of the scores of vocational skill of Pretest and Post test.
- There exists a significant difference in the means of the scores of life skill of Pre test and Post test.

## **Methodology**

### **Method adopted for the study**

The analytical cum experimental method was chosen for the study and it was quantitative and qualitative.

### **Design**

One group pre-test, post-test design was selected for the study.

### **Variables**

Free variables

- Learning through vocational skills and life skills integrated Malayalam learning package.
- Learning through vocational skills and life skills integrated Physics learning package.
- Dependent variables
- Academic outcome
- Vocational skills
- Life skills

**Area** : Students from 9<sup>th</sup> standard of public schools in Pathanamthitta district.

**Sample:** One hundred and eight students from 9<sup>th</sup> standard in two aided schools and two government schools in Pattanamthitta district.

### **Materials subjected to analysis**

Materials analyzed to link vocational skills and life skills with Malayalam and Physics lessons in class IX

- Malayalam text books for class IX (Kerala Padavali & Adisthana Padavali)
- Malayalam Teacher Text for 9<sup>th</sup> standard
- Physics Text book for 9<sup>th</sup> standard
- Physics Teacher Text for 9th standard

### **Used Material**

- Vocational skills and life skills integrated malayalam learning package for 9th standard (ADDIE model)
- Vocational skills and life skills integrated Physics learning package for 9th standard (ADDIE model)

### **Tools used in the study**

1. Package validation criteria check list.
2. Achievement test (Pre& Post)
3. Vocational Skill Test (Pre & Post)
4. Life skill assessment scale (Pre & Post)

### **Statistical techniques used**

- Mean
- Standard deviation
- Paired t- test

### **Findings of the study**

#### **Effectiveness of the learning package associated with academic achievement.**

The findings based on the analysis of data obtained from the pre-post achievement tests conducted in Malayalam and physics in class IX are the evidence for efficacy of the learning package related to academic achievement.

#### **Effectiveness of the learning package in ensuring the learning achievements of Malayalam.**

- The high mean obtained in the post tests in the achievement tests based on the learning outcomes in Malayalam approves the effectiveness of the study package.
- Vocational skills and life skills integrated learning package promotes the academic achievement in the Malayalam language.
- It can be concluded that vocational skills integrated learning will enhance the learning outcomes of languages.
- The package is effective in ensuring Malayalam learning outcomes in boys. The potential increase in the mean of scores proves this.
- The package is effective in ensuring Malayalam learning outcomes in girls. The potential increase in the mean of scores proves this.

#### **Effectiveness of the study package in consolidating the learning outcomes in physics.**

The high mean obtained in the post test in the achievement tests based on the learning outcomes in 9<sup>th</sup> standard Physics approves the effectiveness of the study package.

Vocational skills and life skills integrated learning package leads to Academic advancement in physics.

- Effectiveness of the package leads to the conclusion that vocational skills integrated learning is conducive to the academic advancement of science subjects.
- The package is effective in consolidating the learning outcomes in Physics in boys. This is proved by the increase in the mean of the scores.
- The package is effective in consolidating learning outcomes in Physics in girls. This is proved by the increase in the mean of the scores.

#### **Effectiveness of the learning package in the development of vocational skills**

In the current curriculum, a learning package has been prepared which will help in the development of vocational skills development opportunities in Malayalam and physics subjects in class IX.

The assessment of vocational skill development included in the lesson plan has been done through practical test and the findings and conclusions thus got from the analysis of data are given below.

### **Effectiveness of the learning package in the development of vocational skill related to Malayalam**

- The learning package was effective for developing the vocational skills related to Malayalam. The threefold increase of mean in the post test of Malayalam practical examination proves this. Malayalam learning package is effective in developing vocational skills in boys. The increase in the means of scores of vocational skill exams proves this.
- Malayalam learning package is effective in developing vocational skills in girls. The increase in the means of scores of vocational skill exams proves this.

### **Effectiveness of the learning package in ensuring the learning outcomes in Physics.**

- The learning package was effective in developing vocational skills related to Physics. The threefold increase of mean of post test in the practical exam of Physics proves this.
- Learning package in Physics is effective in developing vocational skills in boys. The increase in the means of scores of vocational skill tests proves this.
- Physics learning package is effective in developing vocational skills in girls. The increase in the means of scores of in vocational skill tests proves this.

### **Effectiveness of the learning package in the development of life skills**

The life skill which can be acquired and developed naturally when vocational skill integrated activities are performed are included in the design of physics and Malayalam of standard IX of the existing curriculum.

### **Effectiveness of the learning package in increasing Self Awareness**

- Learner's self-awareness increased when the integrated learning package was implemented.
- There has been a significant increase in self-awareness in boys. This is evidenced by the increase in the medium of behavioral score related to boys.
- There has been a significant increase in self-awareness in girls. This is evidenced by the increase in the medium of behavioral scores related to girls.

### **Effectiveness of the learning package in increasing Empathy**

- Learner's sympathy was found to increase through the integrated learning package. Scores related to remorse are evident in the increase in the medium.
- Repentance has increased significantly in boys. This is evidenced by the increase in the medium of repentance scores related to boys.
- Repentance has increased significantly in girls. This is evidenced by the increase in the medium of repentance scores related to girls.

### **Effectiveness of the learning package in enhancing Effective Communication**

- Learner's communication skills increased when the integrated learning package was implemented. This is evidenced by the increase in medium with scores related to communication skills.
- Communication skills in boys increased significantly. This is evidenced by the increase in the medium of scores associated with the communication skills of boys.
- Communication skills in girls also increased significantly. This is evidenced by the increase in communication skills scores associated with girls.

### **The effectiveness of the learning package in enhancing Interpersonal Relationship.**

- Individual interpersonal relationships among learners were strengthened when the integrated learning package was implemented. This is evident from the increase in the medium of scores associated with interpersonal relationships
- In male children interpersonal relationships were significantly strengthened. This is evidenced by the increase in the medium interpersonal relationships scores related to boys.
- Individual interpersonal relationships were significantly strengthened in girls as well. This is evidenced by the increase in the medium of interpersonal relation scores related to girls.

### **Effectiveness of the learning package in enhancing Creative Thinking**

- Creative thinking increased among learners as the vocational skills life skills integrated learning package was implemented. This explains the increase in the medium of the scores in relation to creative thinking.

- There was a significant rise in creative thinking in boys. This is evidenced by the increase in the medium of scores of creative thinking related to boys.
- There was a significant rise in creative thinking in girls. This is evidenced by the increase in the medium of scores of creative thinking related to girls.

#### **Effectiveness of the learning package in enhancing critical thinking**

- Critical thinking among learners increased as the vocational skills life skills integrated learning package was implemented. This is evident from the increase in the medium of scores of critical thinking
- There was a significant rise in critical thinking in boys. This is evidenced by the increase in the medium of scores of critical thinking related to boys.
- There was a significant increase in creative critical thinking in girls. This is evidenced by the increase in the medium of scores of creative critical related to girls.

#### **Effectiveness of the learning package in enhancing Decision Making**

- Decision making skills among learners have increased as the vocational skills; life skills integrated learning package has been implemented. This is evidenced by the increase in the medium of scores of decision making skills.
- There was a significant rise in decision - making skills in boys. This is evidenced by the increase in the medium of scores related to boys' decision- making skills.
- There was a significant rise in decision making skills in girls. This is evidenced by the increase in the medium of scores related to girls' decision -making skills.

#### **Effectiveness of the learning package in enhancing Problem Solving**

- The problem solving capacity of the learners increased when the integrated package was implemented. This is evidenced by the increase in the medium of scores related to problem solving ability.
- Problem solving ability was significantly increased in boys. This is evidenced by the increase in the medium of scores of problem solving capacity of boys.
- Problem solving ability was significantly increased in girls. This is evidenced by the increase in the medium of scores of problem solving capacity of girls.



### **Effectiveness of the learning package in enhancing the capacity of Coping with Emotion**

- The emotional balance of the learners increased when the integrated package was implemented. This is evidenced by the increase in the medium of scores related to emotional balance.
- The increase in emotional balance in boys is significant. This is evidence by the increase in the medium of scores related to the emotional balance of boys.
- The increase in emotional balance in girls is significant. This is evidence by the increase in the medium of scores related to the emotional balance of girls.

### **Effectiveness of the learning package in improving the capacity of coping with stress**

- When the integrated learning package was implemented there was a significant increase in the stress balance skill of the learners. This is evidenced by the increase in the medium of scores in connection with the stress balance.
- In boys, the increase in stress balance is significant. This is evidenced by the increase in the medium of scores related to boys stress balance.
- In girls, the increase in stress balance is significant. This is evidenced by the increase in the medium of scores related to girls stress balance.

### **General findings**

- Vocational skills related to language are more prevalent in girls than in boys.
- Vocational skills development is high when it comes to science subjects.

### **Suggestions**

- The vocational skills that can be acquired in each class through each unit of each subject should be pre-determined such as the learning outcomes, ideas, concepts, values and attitudes are pre-determined the curriculum.
- Different vocational skills that can be integrated with the lessons of different subjects of each class should be integrated in progressing order.
- The kind of vocational education envisioned by NSQF should be part of the school curriculum.

- In-service training should be imparted to existing teachers related to the occupations joining with the curriculum.
- Resource pools should be set up at the district and sub district levels related to various occupations. It can be set up at the government level or privately.
- A State level resource pool should be formed involving experts in various professions.
- The State resource pool formatted in such a manner should play vital role in-service training and in the preparation of in service training modules.
- Schools should be elevated to the status of a common meeting place for diverse talents through the integrated learning package with vocational skills (Talent lab).

# **Enhancing Academic Performance of Secondary School Students in Fishermen Community through Socio-Emotional Supports**

The foundation of primary education lies in the development of each and every individual and for the nation as a whole. Recently in the primary education sector, India has gained greater achievement in various areas such as student enrollment rate, their retention, their regular attendance and also in improving the literacy rate to two third of the population. India's better education system is highlighted as one of the key factor among the other contributing factors that leads to the nation's economic growth.

Fishermen living in the coastal areas of Kerala are marginalized group. They face many limitations socially as well as educationally. This study mainly focuses on the current educational status of the children in the coastal area and to ensure quality learning. Opportunity should be provided to improve the quality of education of children in the fisheries sector. Studies have revealed that they are facing many limitations at the social, academic, health and institutional level. Lack of availability of educational institutions, cultural institutions such as libraries and clubs, backwardness of parents' educational level and life awareness, lack of proper guidance to use scientific knowledge in their workplace, overall backwardness in the quality of their daily life are various challenges faced by the people in coastal areas.

## **Objectives of the study**

1. To identify the academic problems of the students belonging to fishermen community.
2. To find out the emotional and social problems of students belonging to fishermen community.
3. To prepare a problem solving package to solve the emotional, social and academic problems of students belonging to fishermen community.
4. To find out the effectiveness of the prepared problem solving package.

## **Methodology**

### **Method adopted for the study**

In addition to the experimental method, survey method was also used for the study.

### **Sample**

High school students of fishermen zone of Alappuzha, their parents, teachers, head master/mistress constituted the population selected for the present study. IX standard students (287) of three selected schools from Alappuzha educational district was the sample of the study.

### **Tools and techniques**

As part of the workshop held on 14th, 15th, and 16th September 2019 at SCERT, 8 tools were developed and prepared. Data was collected by using these tools. The data collection tools are as follows.

1. Academic Achievement Pre-test
2. Questionnaire for Head Master / Head Mistress.
3. Questionnaire for Teachers.
4. Observation Schedule.
5. Socio- emotional Developmental Scale.
6. Academic Achievement Post test.
7. Focus Group Discussion.
8. Action package "Lakshya2019"

### **Statistical techniques used for the study**

Mean, standard deviation, percentage analysis and critical ratio are the statistical methods used for the present study.

### **Findings of the study**

- It was found that the pre- test score of Malayalam was relatively higher than that of Mathematics and Biology. It was also found that the score of Mathematics is less than that of other subjects.

- The changes took place among the students after implementing the Package is as follows:  
Need based class room, interest in recognizing the values, a desire to actively participate in activities, an interest or an effort in expanding my mind, to my home and community, and by means of comparing experiences creating a good relationship. In addition to these the other changes include: possibility to increase interaction, faith that he/she can do something in the classroom or at home and to the community while teaching- learning process takes place. Extra participation in group activities determines that he could grow better theory knowledge sharing. New knowledge related to language, possibility of creating new worthy ideas, the ability to communicate transparently, moral awareness etc. are changes found among children after implementation of activity package in Malayalam.
- Students attitude towards learning Mathematics have changed a lot after the implementation of the Mathematics Action Package. The outstanding students as well as students who are backward in studying could also understand the concepts of Mathematics. This was found to be a drastic change among students. Students have acquired the ability to find out the solution for the arithmetical problems in everyday life. Familiarizing about the measurement, accuracy and precision of the measurement could be assessed after the implementation of the package. But students experienced difficulty in completing activities on time.
- As a result of implementing Biology Study Package among the students, the students were made informative about the need of waste disposal from body and developed aware to keep the school premises waste free. They were able to create a sense of detoxification among family and community. The importance of organ donation was made clear among students. The need of health care and proper eating habits, scientific awareness etc. was created through observations and experiments. Importance of personal hygiene and awareness of the need for following healthy habits in life was other major finding.

- While examining the social and emotional state of the children, pre-test results indicate that there are children who find very different in controlling their emotional feelings. This could be understood by means of analyzing the following statements: 'I don't get upset in the class'; 'I don't destroy objects when I am angry', and 'I don't sit gloomy for long time'. From this, it can be understood that they give importance to emotions like love and compassion. The changes among students after the counseling sessions are also noticeable.
- In addition to the activities in the textbooks in all the three subjects, mentor training, correlated learning with activities and experiences connected to their social life situations and presenting them in an interesting way helped the students to attain goals in their education.
- An awareness programme conducted for parents, on the importance of proper care of liver and kidney helped them and their children to form a proper view on personal hygiene and environmental hygiene.

## **Suggestions**

- The Central and State governments should be prepared to implement various plans according to the timely changes occurring in the fisheries sector. A separate ministry is essential for fisheries at the Central Level.
- Political organisations should be able to formulate and implement necessary action plans in order to bring the fishermen community who are far behind to the mainstream of the society. We need a collective effort for that.
- Fishermen are prone to occupational diseases, professional stress, and life style diseases in various parts of the society. So the Government should take necessary steps to eradicate these challenges.
- Parents meetings, especially mother committees should be held regularly.
- Innate abilities of students in non-academic activities (arts, sports) should be made use of properly.
- Children's home visit should be made mandatory. Nutritious food should be provided in the morning and evenings.

- With the help of mentors, facilities for study should be provided in learning centers like libraries at evening.
- Opportunities should be provided to students to understand about the job opportunities by visiting state level / national level industrial enterprises, farm yards etc. The job they could do other than fishing should be familiarized.
- A special action package should be implemented for the uplift of the marginalized as part of the National Education Policy. They should be given reservation in various marine fisheries departments.
- Using the study time for employment in order to make money at a younger age and engaging in unethical practices (use of alcohol, drugs) should be prevented.
- Teachers should also intervene in children's activities and other things through online system.
- The students belonging to fisherman community who are always willing to help anyone selflessly should be tethered to the main stream society.

## **Development of STEAM Based Package for Promoting Vocational Skills of Secondary School Students**

The STEAM approach aims to enhance students' critical thinking and to identify and strengthen the combination of science, technology, engineering, arts and mathematics. This will help to resolve the content of the curriculum that integrates skill; make learning outcomes more successful and interesting for teachers and students, and present inspirational, creative and logical thoughts effectively into the teaching-learning process. STEAM Education provides opportunities for students - to think outside the framework, to express innovative and creative ideas, to involve in their studies, to gain ownership of their learning, to collaborate with others, and to learn the ways of science. Here, technology, engineering arts and Mathematics work together. STEAM education is also becoming a model in Indian education as new technologies emerge.

STEAM equips the students of the 21<sup>st</sup> century. It provides an extra benefit for developing critical thinking and problem-solving skills for transforming the next generation a novel one. The integration of STEAM encourages the learners to be curious about the world around them. Apart from this, it creates the impression that they have the power to change it for the better.

### **Objectives of the study**

1. To identify the vocational areas of the curriculum at the secondary school level.
2. To formulate a STEAM based package for the development of vocational skills of secondary school students.
3. To empower teachers to implement the STEAM based package
4. To determine the effectiveness of the STEAM based Package developed for secondary school children's vocational skill development.
5. To find support areas for steam-based education in schools.
6. To prepare a blueprint for setting up a centralized permanent LSGI system for the STEAM based education expansion in schools.



## **Methodology**

### **Method adopted for the study**

An experimental intervention method is used for the study. Single group pre-test post-test design has been used.

Qualitative and quantitative methods have been used for analysis.

### **Sample**

95 students of class 9 from two schools in two education districts of Kottayam district have been selected as study sample. Forty-four students of Ninth Standard in Chengalam Government HSS in Kottayam Education District and 51 students of SKV Government HSS in Pala Education District constitute the study sample. 50 Teachers and 75 Parents in secondary schools have also selected for study sample.

### **Tools and Techniques**

1. Job aspiration determination scale (Vocational Skill test)
2. Questionnaire for the Headmaster
3. Module for Teacher empowerment
4. STEAM based learning package for developing the vocational skills of secondary school students.
5. STEAM based Teaching Manual for Vocational Skills Development.
6. Observation schedule - Rating scale for classroom monitoring
7. Observation schedule - Lesson plan evaluation indicator

### **Statistical techniques used for the study**

Experimental Intervention method for qualitative analysis and statistical methods such as Mean, Standard Deviation and Critical Ratio were used for the study.

### **Findings of the study**

- The STEAM based package is effective in enhancing the performance of the secondary school students in Malayalam medium subjects such as Social Science, Chemistry, Information Technology, Work Art and Physical

Education. The STEAM based instruction package developed in English subjects is effective in enhancing the learning achievement of secondary school students. There was an eight-fold increase after the implementation of the package among the children who got more than 80 marks.

- The STEAM based instruction package developed is effective in enhancing the achievement of secondary school students in Physics. After the implementation of the package, there was a 79% increase in the number of students who scored marks between 41 and 60.
- The STEAM based instruction package developed is effective in enhancing the achievement of secondary school students in Biology. After the implementation of the package, there was a 2 fold increase in the number of students who scored marks between 41 and 60.
- The STEAM based instruction package developed is effective in enhancing the achievement of secondary school students in Mathematics. After the implementation of the package, there is a 150% increase in the number of students who scored marks between 61 and 80.
- STEAM based learning package can arise, sustain and nurture interest in learning among children.
- The STEAM based package has been instrumental in consolidating the pedagogy based on the social cognitive constructive theory that we continue to have and the cognitive construction that children need to have as part of it.
- The STEAM based package provides a platform for all the five-sensory experiences and ensures sustainable learning. Apart from this, it has become instrumental in the moral and creative development of children.
- The segregation of arts and science and curricular and co-curricular activities could be reduced to the maximum.
- Helps to connect academic learning with a variety of careers. Emphasis is placed on vocational learning through outdoor study and internship.
- Vocational knowledge and research interest are encouraged. It empowers the learner on how to achieve higher education along with all-round development of personality.

- Fosters creativity that leads to innovations and creations related to the lessons.
- The package helps to achieve social and occupational development, encourage diversity in various fields of employment, realize the glory of employment and develop skills related to the industrial and commercial sector.
- It Integrates learning skills of core subject with areas such as Arts, Health, Sports, Culture, History, Humanities, Tourism, Travel, Infrastructure development, Information Technology, Multimedia and Catering.
- The study emphasizes that the integrated curriculum is effective in developing emotional, social and thinking abilities. It also analyses the challenges, considers the inconveniences, and lays the foundation for the ability to foresee future problems.

## **Suggestions**

- When the STEAM Curriculum has been applied to secondary school students, more students were able to get higher scores than the old ones. But there is a need for special consideration to ensure the increase in scores in all children. Therefore special consideration should be given to reconstructing the curriculum by incorporating vocational skills in it.
- Incorporating activities related to daily life into the STEAM curriculum will make the students more interested.
- There is also a need to educate parents and teachers for the expansion of STEAM based education. Therefore, seminars, workshops, etc. should be conducted for them.
- It is the need of the hour to develop a STEAM integrated curriculum that enables each and every individual to combine the basic skills needed for life and throughout the workplace and to integrate technical skills and other competencies.
- Unemployment can be reduced to some extent by having skill activities associated with conceptualization in the classroom and finding local resources and providing the experience for vocational skill development.

## **Preparation of Science learning package using the resources in Biodiversity Park and study of its effectiveness: Upper Primary level**

As part of science education at the upper primary level, a student needs to get an opportunity for knowing about one's environment and form scientific concepts. Only then, learning becomes a creative and enjoyable experience. That's why the curriculum has envisioned that the school premises shall be arranged to suit environment study and science learning.

Idukki DIET started arranging biodiversity parks in school premises under the assumption that it would help the students to understand nature in proximity and achieve learning objectives. This venture proved that it was possible to preserve about 150 plants, assert the opportunities to know about them closely through observation and experiments and develop the biodiversity parks alongside learning activities. The crux of this study is the enquiry into the role of biodiversity parks in transforming the school environment to a textbook and in taking forward the knowledge building process in a natural way. The research group has tried to prepare science package based on seventh standard and test its effectiveness to scientifically validate the efficacy of biodiversity parks in acquiring the objectives and aims of science education .

Green School is a unique model accepted and implemented by Kerala years ago. Hence, schools are places that ideally reflect tidiness, health and safety. When subjected to close scrutiny, we can find that these need to be mentioned at 5 levels. Those are listed below.

1. Healthy environment
2. Clean and tidy environment
3. Safe learning environment
4. An environment with good health habits
5. An environment that attaches majority of the children to nature.

The term green school would remind a commoner about the fifth element only. Kerala has succeeded in preparing a correct definition for it and in spreading unique models.

It has been two years since biodiversity parks were formed in schools as per the special interest of the State Government. The project had put forward nurturing in children inquisitiveness and observation, developing knowledge, giving opportunity to describe natural phenomenon, developing love for nature, establishing nature love and mutual love, arranging the wilderness and beauty of forest in the school premises and providing opportunity to return to nature as the academic aims [SSA 2016]. Hence things mentioned in textbooks including plants, waste recycling units, water conservation systems, conventional energy sources, natural ecosystem (ponds, thickets, groves), facilities for attracting and rearing birds, butterfly parks etc. were arranged in schools. Other than that ensuring student participation, giving importance to plants in the vicinity, arranging a natural environment, reducing expenditure, giving importance to plants that attract butterflies and providing habitat to other creatures and avoiding potentially harmful and foreign species were suggested as the aspects to be considered while setting a biodiversity park.

It is found that the effectiveness of implementing the biodiversity park project in the envisioned manner has not been evaluated.

This study aims at the close analysis of the academic possibilities of biodiversity park in science learning, expanding the findings to other subject areas and thereby making advancements in the state academic sphere.

### **Objectives of the study**

1. To prepare an activity package for science learning in the 7th standard using the resources in the biodiversity garden.
2. To evaluate the effectiveness of the learning package in the fields given below.
  - Upgrading the standard of science learning [ based on verification of Achievement scores]
  - Achieving the objectives of science learning [based on application capability analysis]

3. Codifying the opinions and suggestions of teachers and parents in the utilization of biodiversity garden resources for achieving the learning objectives.

## **Methodology**

### **Method adopted for the study**

Experimental and survey method (pre-test post- test non equivalent group design) have been adopted for the study.

### **Sample**

15 students each from a class of 2 government schools in the Thodupuzha sub district of Idukki district are selected as the experiment group and control group for the study .(Government UP school Nedumattom, Government UP school Thondikuzha)

### **Tools and techniques used for the study**

1. Learning package for science learning in the 7th standard
2. Achievement test (pre & post)
3. Evaluation indicators for Achievement test - class 7 basic science
4. Questionnaire for the science teachers of 7<sup>th</sup> standard
5. Interview schedule for parents

### **Data collection**

Achievement tests were conducted for the students of two classes in the schools selected for the study. In the experiment group, classes were conducted using the prepared package and in the control group it was conducted in the normal way. After the completion of classes, Achievement tests (including practical exams) were implemented in both the groups. Information was collected from parents and teachers using the questionnaire. The collected information and the scores were analysed.

### **Statistical methods adopted for the codification and analysis of data**

The findings of the study have been recorded by codifying scores and grades received through pretest and post test using the table and graphs and by comparing them.

## **Preparation of package using the resources in the biodiversity garden for science learning in the 7<sup>th</sup> standard**

### **Formation of ideas for activity package**

Approach paper was framed in the workshops conducted at SCERT at two different levels. DIET faculty members, upper primary school headmasters and experts who were involved in the study were participated in the workshop.

As part of draft guidelines, approach of science learning, objectives of science learning, learning areas in science education, the skills to be developed through science learning, methods of science learning, learning objectives etc were framed.

Follow up planning for the implementation of the study was done at the workshops organized by the Idukki DIET at Thodupuzha on the 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> of October 2019.

### **Activities held for this are given below**

1. Evaluation of the guidelines of science learning package to find out the possibilities in science learning by utilizing the biodiversity garden.
2. Evaluation of the aims of science learning
3. Formulation of learning objectives based on the science portions in the 7<sup>th</sup> standard.
4. Finding the classroom possibilities of biodiversity garden based on the learning objectives.
5. Arrangement of biodiversity park -Preparation of master plan
6. Biodiversity park- Preparation of the learning package

### **Reflection of the maximum possibilities of the resourcesIn the biodiversity garden in the prepared science learning package.**

It has been found from the analysis of the package that it was created based on the science learning approach, the learning objectives in science learning, science education- perspectives, aims of science learning; knowledge domain ,science process domain, application domain, creative domain and attitude domain, methodology of science learning and learning process and factors that enrich learning.

## **Analysis of the effectiveness of the package in enhancing the standard of science learning**

Effectiveness of the package in enhancing the standard of science learning can be understood from the comparison of the pre test and post test scores of the experiment group and the control group.

From the 15 students of Nedumattom UP school belonging to the experiment group, 13 students have D grade (87%). Only 2 students have (40-59) C grade score (13%). However, in the post test score 13 students (87%) scored A grade and only two students (13%) scored B grade (60-79). From the comparative study, post test scores are found to be more excellent than pretest scores. Besides that, the science learning package is very effective.

In the pre test conducted for 15 students in the control group of Government UP school, all the students (100%) got D score(0-39). However, in the post test, 12 students got C score (40-59) and only 3 students (80%) got D score. On comparing the tables, the study reveals that the science learning package is attractive and it enhances the learning standard of students to the maximum.

While analysing the post test scores of the experiment group according to the learning objectives of science learning, it has been found that the students were able to achieve the learning objectives in knowledge area, process domain, experiment domain, creative domain and attitude domain.

It has been proved that arranging learning activities based on biodiversity garden is effective in attaining all the learning objectives included in science learning. It is sufficient to materialize the effectiveness of the possibilities of biodiversity garden which is mentioned as the second objective of science learning.

## **Qualitative analysis of the opinions and suggestions of teachers in arranging and using biodiversity garden**

Codification of data indicates that the teachers in the district have good understanding of biodiversity garden and have taken up the present project. The analysis also makes



it clear that the teachers have found out the possibilities and have undertaken research activities for making the biodiversity garden a tool for transacting the curriculum. The teachers have understood the possibilities of catering students of various levels and their development in various fields. Teachers have been able to discover and use the possibilities for the betterment of biodiversity clubs.

Teachers have been able to put forward practical suggestions for improving the learning package. The study indicates that there will be more effort from the part of the teachers of Idukki district to retain a culture of making academic progress using biodiversity garden.

### **Opinions and suggestions of parents for the preparation of biodiversity garden**

The parents reported that they have good understanding of the activities conducted in the school in connection with biodiversity garden and their children are carrying out several activities at home under their guidance. Analysis of the data obtained from the parents indicates that there has been a qualitative change in the students after conducting such activities and the parents have played an excellent role in arranging a biodiversity garden at school. The parents able to given valuable opinions and suggestions for improvement in connection with the materialisation of biodiversity garden studies.

### **Findings of the study**

- The study indicates that the learning package prepared by the research group using the biodiversity garden resources is very effective.
- Analysis of the related resources has reflected the formulation of an ideological base for biodiversity garden. The study confirms that the science learning packages can be made effective by giving due consideration to science learning approach, objectives of science learning, science education -perspectives, the objectives of science learning such as knowledge domain, process domain, practical domain, creative domain and attitude domain, methodology of science learning, learning process and means for enhancing learning. Effort has been taken to include in the package all the objectives of a unit to be taken

in the class and methods of learning like observation, experimentation, field trip ,project, seminar, interview, discussion, etc . The learning package was prepared with the maximum inclusion of picture exhibition, video presentations, analysis of leaflets, references to pictures, preparation of notes, completion of worksheets, preparation of garden, preparation of vegetable garden,making of copies, preparation of science fantasy walls, club activities and possibilities of continuous evaluation in each methodology of study. Hence, it is clear that carefully prepared packages are immensely useful.

- The science learning package prepared using biodiversity garden is adequate to enhance the learning standard. 87 percent of students and 13 percent of students in the experimental group reached A grade and B grade respectively. Nobody belongs to the lower grades of C and D.
- The progress in the learning standard through the learning package is a proof of the adequacy of the proper use of biodiversity garden.
- It has been found from the study that the science learning package prepared using biodiversity garden is adequate to attain the learning objectives pertaining to science learning.
- The study indicates that students have been able to achieve all the learning objectives pertaining to knowledge domain ,process domain, experiment domain, creativedomain and attitude domain.
- It has been found that the students have been able to attain process skills like observation,, classification, measurement, communication, analysis of data, formation of opinion, engaging in experiments, controlling the variables and 13 other process skills too. It is also observed that the study has been transformed to support the views and studies of Morar and Peterlicean (2012), Panula, Jeronen, Lemmetty and Paunna (2018), Sing (2019) who have mentioned about the qualitative changes in the growth and development of students in a school environment that provides a biologically diverse atmosphere.
- All the teachers and parents have clear idea and awareness regarding biodiversity garden.
- This awareness has brought significant changes in the fields pertaining to the preparation of biodiversity garden, maintenance of biodiversity garden, utilization for learning activities and in improving it.

- Parents are convinced about the benefits of biodiversity garden atmosphere in bringing significant changes in students.
- Teachers could realize many possibilities of club activities and research activities.
- The study testifies that biodiversity garden activities receive the support and involvement that all the other innovative activities implemented in the school receive.

## **Suggestions**

- All schools shall make efforts to arrange biodiversity garden considering the growth and development of students. Even in the presence of biodiversity garden, action shall be taken to ensure the arrangement of biodiversity garden in accordance with the classes and the learning objectives to be attained in all the classes.
- The arrangement of biodiversity garden in accordance with the curriculum transaction at the high school level and the higher secondary level shall be used to improve the academic standard and to nurture environment friendly attitude and values for sustaining the environment.
- Awareness shall be given to study the academic possibilities of biodiversity garden in all the classes and in all the subjects and to raise the teachers and those working in the academic field using such studies.
- The learning objectives of creative development and mental development in science learning shall be studied scientifically and deeply .SCERT shall adopt measures for that.
- As the studies for utilizing the biodiversity garden in the process of preparing different discourses in languages would be a new step, teachers and educational activists need to take timely precautions.
- In the light of the study, providing science portions in all the classes as packages that have utilized the possibilities of biodiversity garden would be helpful. Academic institutions like DIET and SCERT need to take initiatives in this task.
- The possibilities of biodiversity garden in all the subjects at the lower primary level shall be studied.
- The studies indicate that for differently abled students learning in the company of nature is mentally and emotionally healthy and useful. Hence, the efficacy of utilizing the biodiversity garden shall be analyzed.

- The effectiveness of the science of biodiversity garden in the academic progress of students with challenges like attention deficit hyperactivity disorder, autism and mentally challenged shall be studied.
- The DIETs in cooperation with SSKs shall supervise such studies undertaken by the resource teachers. Steps shall be taken for this.
- While preparing biodiversity science learning package, the subject area needs to be approached with knowledge excellence. Biodiversity, its importance, possibilities of biodiversity garden in classroom, arrangement of biodiversity garden and preparations to be made in connection with each chapter at the school level shall be analyzed in detail and mentioned in the package. In connection with this, the materials prepared by the General Education Department, SSA, NCERT and other researches need to be referred. The package prepared for the study reflects the perspectives put forward by SSA (2016), NCERT (2017), Morar and Peterlicean (2012), Panula, Jeronen, Lemmetty and Paunna, Siñg (2019), etc. The efficacy analysis and findings from the study shall be used effectively.

## **Samagra Portal : A Status Study**

General Education Protection Campaign is one among the four missions executed as part of the creation of Nava Kerala .A mission becomes successful through the integration of basic infrastructure development, manpower development and a proactive work atmosphere. Uplift of schools to hi-tech mode and creation of smart classrooms were the first steps in this. The most important advantage of inclusive education being the transaction of learning process in hi-tech classrooms became beneficial to all the students. Quality education is the right of every student. Identifying each student and ensuring learning support was made possible through diverse learning tricks conveyed by means of information and communication technology.

Samagra Portal came into existence as a part of improving the quality of general education. Samagra Portal which provides necessary learning resources for teachers and students was developed by SCERT and it@school. Model of learning activities for each period and of each unit from standard I to 12 are available in Samagra Portal. Curriculum transaction can be made more effective and efficient through this.

Teachers could use the necessary resources in the Portal, make changes in the resources and developed the resources by themselves. Through this, it can be inferred that teachers are able to make excellent lesson plans and could realise the attainment of learning outcomes.

### **Objectives of the study**

1. To find out how far the Samagra Portal is useful for classroom learning
2. To find out whether the teachers are capable enough in using the Samagra Portal effectively
3. To identify the challenges faced by teachers in using the Samagra Portal.
4. To collect opinion from students and parents regarding the usage of Samagra Portal.

5. To collect suggestions from teachers for improving Samagra Portal.

## **Methodology**

### **Method adopted for the study**

Survey method was used for the study.

### **Sample**

Sample was selected using stratified sampling method from the districts of Thiruvananthapuram, Ernakulam and Malappuram in Kerala state. Govt and Aided schools (18 districts each) from rural and urban areas were selected for the study (6 Govt schools and 6 Aided schools from each district). 12 teachers of 12 subjects from each school came under the preview of the study. Moreover, 360 students of 9<sup>th</sup> Standard from 3 districts, 360 parents and 36 Headmasters were also involved in the study.

### **Tools and Techniques used**

1. Questionnaire of teachers.
2. Interview of Headmasters.
3. Class observation schedule
4. Focus Group Discussion - students.
5. Focus Group Discussion – parents.

### **Statistical Technique used**

Percentage analysis was used for the present study.

## **Findings of the study**

### **Use of Samagra Portal in the learning process**

- Majority of the teachers (85%) opined that concepts related to content could be easily transacted to students by using Samagra Portal.
- All teachers (100%) opined that teaching-learning process is very effective in Samagra Portal.
- It was found that Samagra Portal is very useful for differently abled students.

- Resources are included in the Samagra Portal in a simple way.
- Samagra Portal is very helpful for teachers in preparing their teaching manual.
- Majority of Teachers pointed out that students express more interest in subjects like Biology (94%) and Physics (90%), through the usage of Samagra Portal.
- The study revealed that ICT was used in languages mainly for grammatical corrections and pronunciation.

### **Simple teaching methods**

- Majority of the teachers simplify the complex areas and adopt the method of transacting the content through appropriate activities. Teachers (70%) pointed out that ICT is very helpful in this regard.
- Samagra Portal is very helpful in teaching the concepts in a consolidated manner.
- Teachers opined that follow up activities can be used for transacting the complex concepts in the curriculum so that the transaction time can be minimised.
- Majority of the teachers give simple learning activities for students which can be completed using internet.

### **Transformation in students**

- Majority of teachers (91%)opined that Samagra is sufficient in ensuring learning outcomes in students.
- 33% of the Teachers were of the view that Samagra Portal enables the students to comprehend complex concepts in a simple way.
- Majority of the teachers (87%) opined that students had evident transformation through the use of Samagra.

### **Supporting factors**

- Majority of teachers (90%) use Samagra Portal for transaction with the help of their whatsapp group.

### **Advantage of Samagra Portal**

- Teachers opined that extra browsing is not needed as the Portal provides the resources required for learning.
- It is very helpful for teachers as the Samagra Portal functions in offline mode also.
- Samagra Portal is very helpful for conducting evaluation.

### **Usefulness**

- Helpful in sharing research outcomes.
- Lesson planning can be done fully.
- The study proves that Samagra Portal is mainly used for lesson planning (75%), translation (85%) and simplification of complex areas(70%).
- Usage of Portal brought out evident changes in children with special needs.
- Samagra Portal catalysed the usage of various web sites as well as learning softwares like MATHLAB, DISHA, SWAYAM , e-PATSALA etc for learning.
- The use of Portal is useful for parents also.

### **Efficiency of Teachers**

- Majority of teachers (91%) are using Samagra Portal though partially.
- More than half of the teachers are not using Samagra Portal for evaluation of curriculum as they have not received special training on Samgra Portal.
- A minority of teachers (10%) pointed out that special training should be provided for the learning process of differently abled children.
- 40% of teachers use Samagra Portal for evaluation only.
- The study proves that the use of ICT is very less in Mathematics.
- Teachers (30%) opined that special training is required for developing ICT resources.
- Around half of the teachers need training for uploading resources in Samagra Portal.



- Only 40% and 20% of the teachers can use Samagra for evaluation and re-inforcement respectively.
- The study points out that both sectors of the above mentioned teachers are not trying to prepare reflex notes.
- It was found that the skill in Malayalam typing is less among teachers.
- Teachers opined that there is lack of resources for handling English medium.

### **Challenges**

- Compared to other subjects, the scarcity of resources is more in languages. This was pointed out by teachers of English medium schools.
- There exists an opinion that the resources of some subjects in the Portal is not in tune with the content.
- Teachers of Social Science and English are experiencing difficulties as the resources in the Portal are insufficient.
- Lack of equipment and lack of knowledge creates crisis.
- Students are not able to do the ICT related follow up activities freely at home.
- Another challenge face by teachers is the lack of ICT resources in Mathematics.
- Around half of the teachers (45%) opined that writing and reading capacity of the students are gradually decreasing due to the over usage of computer and mobile phone.
- Both the teachers and parents are facing the greatest challenge of misusing internet by students under the pretext of learning.
- Though the teachers opined that all schools in Kerala have internet access and is being used for clarification of doubts of content as well as pedagogy, the access of internet has not yet reached the classrooms. Only 33 % class rooms under study had internet access. Though internet facility is there, it is not functionally operating at all. Almost all schools have laptops, but there is no facility for projecting the content on big screen. Only 21% schools under study have proper sound system.

- All teachers do plan their lessons fully though they do it at different time span. Generally teacher's Portal is the mode of planning. Majority of teachers use ICT for comprehensive teaching -learning process.
- Through ICT is being used extensively in pedagogic process, opportunity for discussion and doubt clarification are found to be less. Even though audios, videos and pictures are shown to students, it should be followed by discussions and question-answer sessions so that students will get clarity of concepts and motivated to have revision. Students get comparatively less opportunity for picture making, drawing and discussions using slides.
- Digital usage has confined to the dimension of presentation only. After presentation, it does not pave way for discussion. Hence the learning process remains incomplete. Activities ensuring student participation is found to be generally less.
- Only 58% of classes under study have done the follow up activities to make clarity of classroom activities. Hence there is an urgent need for follow up activities.
- The digital resources usually used in classrooms were meant for normal students. But resources for children with special needs are to be provided in Samagra Portal.

## **Suggestions**

- Based on the findings of the present study, the emerged suggestions for the effective and extensive usage of Samagra are given below.
- Measures should be taken urgently to enhance the effective utilisation of the Portal for differently abled students also. Continuous training and monitoring can be done in this regard as majority of teachers have started using Samagra Portal.
- Necessary training shall be given to teachers for adding resources in the Portal, for uploading the prepared micro plan and for preparing reflex notes.
- Teacher shall take due consideration for improving the resources in the Portal and shall upload the same with the certification of SCERT.

- SCERT may take measures to include more resources of languages including English.
- Portal shall be modified by adding useful resources for Mathematics teachers also.
- Majority of the teachers are of the opinion that the usage of ICT has limited the possibility of reading to a great extent. Hence Headmasters should take initiatives to conduct various programmes to improve the reading habit of students.
- Teachers are of the opinion that learning activities in presentation form can't be downloaded and used. In order to rectify this issue, orientation on various resource Portals including "DIKSHA" may be provided to teachers in a time bound manner.
- Links of e-resources related to school education, mobile applications, resources for differently able children, creative platforms, e-text books etc. shall be made a part of the Portal.
- Though there exists the necessity of planned learning process, it was found that majority of teachers are not making daily planning of lesson plans. Majority of the teachers make the lesson plans weekly only and less than 10% of the teachers do the same once in a month. Teachers should be equipped to make the planning on a daily basis before engaging the class sessions.
- Through better planning, the proper scientific usage of variety of resources are to be ensured.
- ICT resources may be planned and presented in such a way as to be utilised for other learning processes along with presentation of concepts.
- The usage of ICT resources may be enhanced for evaluation and re-inforcement.
- ICT resources along with the sources shall be made available for follow up activities.
- The attainment of proclaimed learning outcomes through the usage of digital resources by the students should be ensured.

- ICT resources shall be presented in the following order- skill of contemplating learning experiences, enrichment of concepts and generalisation. After presenting the resources, opportunities for discussion shall be provided to students through questions related to the concepts. Care shall be taken to use ICT resources in such a way to keep the discussions leading to concept enrichment.
- Samagra shall be updated periodically by adding measures to evaluate learning progress along with transaction.
- It should be ensured that the existing measures in Samagra Portal for monitoring and evaluation are being utilised effectively.
- Teachers shall be given opportunities for self-evaluation.
- Opportunities shall be ensured in Samagra to have self-evaluation as well as mutual-evaluation by teachers.
- Samagra Portal shall be modified in such a way as to mark the standard of learning of the student after each learning activity and to maintain a cordial relationship between the teachers and students.
- It should be ensured that the lesson plans (unit plan, micro plan) are prepared in a time bound manner. The efficiency and continuous usage of Samagra shall be ensured by including options to monitor and evaluate the various processes by higher authorities.
- Discussions and evaluation forms the basis of growth and development of any academic activity. Hence applications like ‘club house’ may be planned for discussion among teachers which will pave way for improving academic standards, better planning and pedagogic outcomes.
- Teachers shall be given training to generate question paper from the question pool provided in the Portal for all subjects from Standard I to Standard XII.
- Opportunities to try the mock tests and mock quizzes by students themselves as well as with the support of teachers/ parents shall be included in the Portal.
- More resources for languages and Social Science shall in included in the Portal.

- Difficulties in downloading the resources in presentation form shall be rectified in a time-bounded manner.
- Portal shall be made more resourceful by including more sample questions.
- Training should be given to teachers on the possibilities of using Samagra Portal for conducting evaluation.
- Training for teachers shall be provided by addressing the various needs of them so that Samagra Portal may be used effectively.
- Links of videos and pictures shall be provided in the soft copy of the handbook of teachers.
- Due to endless possibilities of internet, the opportunities for clearing doubts and making clarity of ideas have been limited. Hence training shall be given to expand it into other learning dimensions.
- Only limited number of students are using Samagra Portal for learning. Hence efforts should be taken to equip them to use the Portal fully.

## **Developing Library Reference Package and Assessing its Effectiveness on Improving the Academic Performance of Upper Primary Students**

The public education system in Kerala has garnered the attention of the whole world due to the great achievements in education sector and has become a 'model' for the educational system in India. The rate of enrolment of students is also high in Kerala when compared to other states.

Access, retention and quality are the three key areas of Education. The first generation issue of education -issue of access-has been resolved long before in Kerala. Results obtained from various Studies indicate that almost 99% of students in Kerala get enrolled in schools. It is also evident from these studies that Kerala is in the forefront in ensuring retention, the second generation problem, and has lowest dropout rates in India.

As per NitiAayog indices, Kerala has emerged first among other states in public education by ensuring access to schooling to all students and by taking steps to decrease the rate of drop outs. Ensuring quality education is the next key issue and it is the duty of every society to ensure quality education to its learners.

The General Education department of Kerala has undertaken various activities to enhance the academic standard of education. The various initiatives undertaken by the public education department like "**Hello English, Shradha, Malayalathilakkam**" have received great academic acclaim and has helped to enhance the quality of education significantly.

As an aftermath of the meeting held at SCERT on June 6<sup>th</sup> 2019, the DIETS in Kerala were asked to chart out strategies to improve the quality of education in schools. As a result, the DIET Thrissur has come up with the topic 'Library Referencing and Education', from the list of areas of research suggested by SCERT.

Almost all schools in Kerala have libraries and as per records every library has enough number of books in stock. But it is doubted that whether the school libraries have the needed books to improve the academic quality of students.. It was found as per the timely curricular reform, the school libraries do not ensure a satisfactory stock of reference books that could assist the easy transaction of text books in classrooms. There were many reasons behind the inadequate stocking of reference books like the lack of funding. Excluding libraries from the real classroom teaching learning process was also found to be another main reason for this inadequacy.

Most schools limit their library empowerment activities to Readers day programs. It is sad to point out that our schools fail to accept the fact that library books foster extra reading habits and they should be made as an essential aspect of teaching- learning process. Hence the DIET Thrissur has come up with an idea of the present project Library Referencing activities which foster the academic performance of students in upper primary classes.

The project aims to remove the prejudice that library is a place for leisure reading from the mind of teachers, learners and parents. The school libraries have a rich collection of books under different categories like children literature, novel, short stories, science fiction and historic novels. Yet, these treasure houses of knowledge are not being made an integral part of the actual class room activities. It is important to identify and ensure the availability of books that could help learners to carry out textual works, their follow up activities and creative writings. It is equally important to convince the academic circles about the impact of library referencing in improving the quality of learning in learners. This would in turn help to include library referencing as a continuous compulsory process in curricular activities and it will help to open the doors of creative reading and writing before students. Moreover, library referencing skill will certainly help to attain the goal “Learner constructing knowledge”.

When the classroom activities give importance to reading and library referencing activities, learners will get more opportunities to enrich their critical thinking skills and creative writing. Library referencing can eventually provide a learner with great

possibilities to attain the qualities of a global citizen. Hence it is highly significant to include reading and referencing as a daily routine in class rooms activities. To construct a creative atmosphere in schools, teachers and learners should realize the importance of referencing skills and utilize its benefits in their daily teaching -learning process. The study intends to identify the possibilities offered by school and class libraries in making learning a creative experience and also suggest ways to use library referencing as a strategy for ensuring academic improvement in upper primary schools.

### **Objectives of the study**

1. To identify the present status of school libraries
2. To find out how far school libraries are used by teachers and students
3. To develop a Library Referencing Package for improving academic quality of upper primary school students.
4. To assess the effectiveness of Library Referencing Package
5. To empower the libraries of the selected schools
6. To identify the difficulties faced by teachers in implementing Library Reference Package
7. To disseminate Library Reference Package to other schools in the district
8. To share with the public the academic benefits attained by learners through library referencing skills
9. To collect suggestions with regard to the empowerment of school libraries for academic improvement.

### **Methodology**

#### **Method used for the study**

The study adopted survey cum experimental method.

#### **Sample for the study**

The fifth grade students of five randomly selected government schools of Thrissur district constituted the sample of the study. The headmasters, teachers, teacher in



charge of the library and parents of the selected schools were also included under the sample.

### **Tools and Technique used**

The main tools used for collecting responses with regard to the present status of school libraries were given below:

1. Questionnaire for teachers
2. Interview schedule for headmasters
3. Focus group discussions for parents
4. Group discussion for students

The following tools and techniques were used to assess the effectiveness of the strategy adopted.

- Interview schedule for Headmasters
- Interview- schedule for Teacher in charge of library
- Questionnaire- for Teachers
- Focus group discussions for Parents
- Group discussions for Students
- Questionnaire for teachers participated in the Twinning programme
- Achievement test for students

### **Statistical Techniques used for the study**

Qualitative and Quantitative methods were used for the study. Percentage analysis was used for analyzing quantitative data.

### **Findings of the study**

- All the children commented that though majority of teachers encouraged the students for promoting reading habits, the parent's involvement in this matter was minimal.
- Two of the five schools surveyed found that they did not have enough library books.

- Teachers and students commented that the use of library book in classroom transaction was very less.
- As part of the library referencing various extracurricular activities like quiz competitions, poetry / story/ essay writing were conducted on different textual topics. This helped the learners to search and use reference books from the library. The headmasters participated in the study also opined that the teachers and students actively participated in these activities.
- As part of library reference activities teachers started to spent more time in libraries after their regular working hours.
- The reference section of schools libraries had inadequate reference books and this was compensated by adding New books.
- Students had started to identify the close connection between the textual topics and the extra reference/reading materials they read from the library.
- Students of the fifth grade had scored better than the students of higher classes in various competitions conducted like quiz, essay/creative writing etc. conducted in schools. This indicated the effectiveness of library referencing strategy
- Teachers participated in the study had remarked that due to this initiative there was a considerable increase in the number of books in the library and school libraries were improved much. PTA, MPTA, various clubs, alumni associations extended great support for re-equipping libraries with new books. Lots of library books were received in the school library as part of the birthday present of the children.
- The teachers in charge of library had reported that they had started to catalogue books as per class and subject category.
- All the teachers in charge of library and the headmasters remarked that the library usage of teachers had increased immensely after the implementation library referencing project. The reading habits of teachers had also increased greatly due to this initiative.
- All the teachers participated in the study reported that students had started to use library seriously. Even the students who used library for casual reading

had learnt to select reference books related to textual topics and began to use them for extra reading purpose. Moreover, teachers had found that students had started to prepare notes based on the book they referred.

- A great majority 90% of teachers opined that after the use of referencing package remarkable changes had occurred in students in their performances and the product made by them. This finding revealed that the effectiveness of Library Referencing Package.
- It was also found that the reading interest of students had increased considerably and more clarity in writing and communication was noticed with less mistakes in writing.
- Parents extended amazing support in retaining the reading interest of their children. They bought them new books, read the notes prepared by learners as part of library referencing activity and some parents even took library membership for their children as a supportive gesture.
- Before the implementation of this project only 20% of learners attempted note making. As a result of this project almost all the students had started to prepare notes of the books they read. This indicated the effectiveness of the project.
- As a result of library referencing package 60% of students took membership in their respective neighborhood libraries.
- The effectiveness of the package was reflected in the better performance exhibited by learners in various co-curricular and extracurricular activities like story writing, recitation, essay writing etc.. They were also able to read and frame complicated sentences without mistakes.
- Non-availability of adequate library books, non-cooperation of parents etc were the main difficulties faced by the teachers while implementing the package at school level.
- Through 'Arivultsavam' programme conducted in school, the representatives of people, parents, LSG's and educational officers recognized and witnessed the academic achievement of children.
- It was also found that the learners participated in the study exhibited better academic performance in various subjects like Malayalam, Basic sciences and

Social sciences. This finding proved the effectiveness of the Library Referencing Project in improving the academic performance of learners.

## **Suggestions**

- Library Referencing should be made an integral part of Teacher empowerment programs.
- Since more books available than before the libraries in schools should function in more spacious rooms.
- As library referencing is found to be an effective strategy to improve the academic performance of learners, the project should be extended to other schools in the state.
- The process of cataloguing books on the basis of subjects can be done to improve class room transaction.
- The teachers' in charge of library should be given more training for the effective functioning of the libraries. For this the service of SCERT Librarian, State Librarian could be utilized.
- In addition to stocking books that promote creativity and reading, school libraries should also have a good collection of textual reference books.
- Learners should be made aware of the importance of the concept home library and should be encouraged to own a home library in tune with "My home – My Library" concept.
- Parents and teachers should encourage learners to spend their pocket money (personal money) to buy books and to have a personal book collection than spending it on buying gifts on their birthdays and other celebrations.
- Teachers should encourage and provide opportunity to learners to prepare and present an abstract of books they read.
- Visiting the best school libraries, State libraries and District libraries should be provided to learners as part of their field trip programs.

## **Effectiveness of an Activity Package in enhancing Science Process Skills among Upper Primary School Students.**

Science is a collection of ideas that man has accumulated through his life experiences and constant inquiry. New inquiries in problem solving make science dynamic. A person who lives in harmony with nature and the environment relies on science to solve the problems of his daily life. Man engages in problem solving using the method of science, acquires knowledge through life experiences and constant inquiry, also achieves life skills and develops a scientific attitude. Science is a combination of process and product. Therefore, scientific study is completed through the accumulation of knowledge, but also by the formation of ideas and the application of them through processes. Although science is advancing and knowledge is increasing, unscientific interventions by society often lead to socio-environmental problems.

Practising scientific process skills, help a person to acquire new knowledge in life. The science curriculum focuses on this goal and gives importance to science process skills. Observation ,classification, comparison, experimentation, communication, Analysis and interpretation of data,Evaluation,Modeling,Measuring are the main process skills focusing in primary level.Science is a combination of process and product. The three dimensions attaining knowledge, Science Process skills and forming a scientific attitude are equally important. Ability to solve problems in daily life, ability to ask questions be curious, and the ability to form conclusions only on the basis of evidence are essential for the formulation of scientific attitude. This can be attained only by attaining Science Process skills at the Primary Level itself.

This study is conducted in GHSS, Mezhatthur in Palakkad district, which is a part of Thrithala Sub District of Ottappalam Educational District, The School is situated in rural area and 1258 students are studying from first to twelfth. The DIET team conducted aFGD with teachers and a pre test to 7 th std students to analyse the situation.

Most of the children are financially backward. They do not receive adequate academic support from home. Although the physical conditions of the school are quite adequate,

the science learning facility (science, lab, Science library) is found to be inadequate. With the combined effort of the teachers, school achieved 100% Success for the last SSLC examination. However, the support of various agencies such as SCERT, DIET and SSK is to be ensured for qualitative progress of the Students.

### **Objectives of the study**

1. To find out the level of science process skills of 7<sup>th</sup> Std students.
2. To develop an activity package for enhancing science process skills among 7<sup>th</sup> STD students.
3. To find out the effectiveness of the activity package.
4. To compile suggestions for enhancing Science process skills in students.

### **Methodology**

#### **Method adopted for the study**

Quasi experimental method was adopted for the study.

#### **Sample**

30 students of STD VII of GHSS, Mezhatthur were selected for the study.

#### **Tools and Techniques**

1. Science Process skills test (Pre- test)
2. Activity Package for Science Process skills.
3. Science Process skill test (Post test)
4. Observation Schedule.
5. Focus Group Discussion.

#### **Statistical Techniques**

1. Percentage analysis
2. Mean
3. Paired T-test
4. Coefficient of Correlation

### **Findings of the study**

- It was found that there is significant progress in Science process skills among students through the intervention.

- There was significant increase in the level of achievement of students through the intervention.
- By comparing pre- test and post – test scores of science process skills; it was found that the observation skill is improved through the intervention package.
- The communication skill of students has improved through the activities of the intervention package.
- The skill to form operational definition has improved in students through the package.
- Students have developed experimenting skill through the intervention package.
- It was found that children are very capable in the scientific skill of modelling through this package.

### **Suggestions**

- Various Science intervention package based on text book need to be developed to strengthen the process skills of students.
- In order to nurture research curiosity among students, process oriented strategies should be given importance.
- Learning packages help to encourage questioning and attitude of inquiry should be developed.
- Teachers should provide opportunities in the classroom to record students findings and share them with others.
- Developing process skills packages in mathematics and Geography will also help to improve the quality of learning in those subjects.
- Science Club activities should be rearranged to improve science process skills among students.
- D.El.Ed, B.Ed curriculum should to be adequate to develop science process skill among student teachers.
- Teacher training programs should be organized by SCERT, DIET & SSK in order to cultivate science process skills among children

## **Creative Drama: An Effective Tool to Strengthen Social Awareness among Primary School Students**

Creative Drama: An Effective Tool to Strengthen Social Awareness among Upper Primary School Students.

Teachers should give emphasize to redefine learning activities in the primary stage by revamping teaching process utilizing innovative ideas about pedagogy and implementing them in such a way that their sufficient to nurture children's innate talents. Learning subjects such as Social Science, Science and different languages give children the opportunity to critically evaluate the problems of the community they belong to and take a stand and engage in response activities. Learning these subjects help children to nurture ideas, attitudes, values and skills that are necessary for the developments of proper awareness about the society and environment. The curriculum envisages qualitative changes in the socio-emotional environment of children. These are as of development are as follows:

1. CommunicationSkill
2. InterpersonalSkill
3. Empathy
4. Cope withemotions
5. Cope withstress.
6. Problem solvingSkills
7. DecisionMaking
8. CriticalThinking
9. Creativity
10. Self-Awareness.

The curriculum focuses on the development of these skills.



Contemporary events and studies reveals that the students are not moulded as per the kind of social consciousness envisioned in the curriculum. Today's society focuses on personal gain rather than social welfare. The social world of children is their home, school, neighborhood and the environment in which they live. But as the child grows, their social world becomes more wide and complex. Only if they have the necessary social skills and social discipline to embrace these complexities and broadness they will be possible to maintain healthy personal relationships and lead an active and successful social life.

Many studies indicate that the development of social consciousness is an area that the educational process should emphasize. We need to think deeply about designing innovative collaborative activities to provide experience needed to develop process skills to be acquired based on the study of social science and science. In this context, the educational thought of John Dewey is worth mentioning. Education has individual and social aims. In order to achieve these aims, the different methods and techniques of theatre can be utilized. Theatre is an effective medium to create social change and social sense and also to discuss social problems. Creative Drama is a powerful medium that teachers can use to strengthen social awareness in children in the classroom, especially at the primary level, and to enable them to interact with the community. Creative drama serves as a stimulus to accelerate students' learning and development, as well as nurturing their instincts and acting as a cornerstone of their character formation. Creative drama helps to develop the communication skills of students, their cooperative attitude, social awareness, critical thinking and thereby enabling them to become useful individuals for themselves and society.

Creative Drama Center is based on children's theatrical performances. During the performance, the child takes many roles. The child takes the role of many objects such as different humans, animals and machines which he has observed in his life. Thus the child becomes fully immersed in the drama. Creative drama is an individualized activity as well as a sincere collaborative activity. Creative drama sets stage where one can perform freely with instant Role Play. Instead of a stage, a classroom is enough and more. The whole stage is used for the presentation of drama.

Each child gets opportunity to express his ideas, plan the play and become the characters. The aim of creative drama performed in a classroom is not just the staging of a play, but it is about giving each person a chance to express themselves in relation to the activities of the whole group. Therefore, creative drama is an excellent tool to inculcate values in children and also to develop their personality. Although curricula are designed to be very effective, failures are found in the process of conveying their essence to children. Adequate learning and teaching activities need to be formulated to impart the ideas inherent in the books and other learning aids in children. Curriculum and teaching methods need to be modified to adapt to changes in social conditions. It is essential to ensure the effectiveness of the curriculum, which focuses on the development of social consciousness at all levels of society. Rather than imparting social awareness, it is something that needs to be formed and strengthened in children on their own. Children interact with people from different backgrounds and thereby improve their social skills.

The content and ideology of Primary curricula are adequate to develop and strengthen social awareness in children. But the lack of a teaching method that includes children and gives them opportunities makes it impossible to achieve the goals envisioned in the curriculum. A medium that provides possibilities for imparting lessons to children without losing its essence is essential in this situation. The word creative refers to the ability of an individual to use ideas in a textbook to implement ideas at his own risk.

### **Objectives of the study**

1. To find out the level of social awareness of students of Std VII.
2. To develop a learning package using creative drama to enhance the social awareness of students of Std VII.
3. To test the effectiveness of the package in promoting social awareness of children of stdVII.

### **Methodology**

#### **Method adopted for the study**

Survey cum Intervention Method was used for the study.

## **Sample**

30 students each of standard VII from GUPS Mananchira and GUPS Thurayoor in Kozhikode district, and 190 primary teachers from Kozhikode district were selected as the sample for the study.

## **Tools and Techniques**

1. Teachers perception Questionnaire
2. Semi Structured interview schedule for teachers
3. Social-consciousness test.
4. Creative Drama Package.

## **Findings of the study**

- Creative drama experiences enhanced the social consciousness of Upper primary school students.
- Creative drama experiences improved the social aptitude of Upper primary school students.
- Creative drama experiences enhanced the empathy of primary school students.
- Creative drama experiences enhanced the leadership qualities of primary school students.
- Creative drama experiences mitigated the stress of upper primary school students.
- Creative drama experiences enhanced the interrelationships of upper primary school students.
- Creative drama experiences enhanced the mutual cooperation among upper primary school students.
- Creative drama experiences enhanced the team spirit to upper primary school students.
- Creative drama experiences enhanced the social knowledge of Upper primary school students.
- Creative drama experiences enhanced the communicative skills of Upper primary school students.

## **Suggestions**

- Creative drama is an effective learning tool. Teachers should try to make use of the strategy, which provides an opportunity for children to enjoy learning.
- Creative drama can be exploited in relation to all subjects. SCERT should provide opportunity to shape the creative drama possibilities at primary and secondary levels.
- The possibilities of Creative drama can also be used as a training strategy in teacher empowerment programmes. SCERT can experiment this especially in teacher empowerment programmes of languages and social sciences.
- SCERT should develop the transactional strategies using the possibilities of creative drama to transact ideas related to social consciousness in various subjects. This strategy should be made available to the teachers too by SCERT. Districts can also carry out such activities.
- Children should be motivated to present ideas related to social consciousness in the form of creative drama. Such presentations should be included compulsorily in the school annual day programmes.
- Schools that do not have a creative drama corner should make necessary arrangements for the same and adequate materials needed for the corner should also be arranged. The Director of Public Instruction may give instructions to schools in this regard.
- Creative drama models should be developed and made available to the community in the form of Creative drama.
- Schools can equip children to organize and present creative plays that are socially relevant and address local issues. The three tier panchayats can give their full support to the work in this regard.
- SCERT should instruct the teachers to give due importance to creative drama at the curriculum transaction at the time of text book formulation itself.

## **Effectiveness of Multiintervention Package in Enhancing Learning among 'Paniya Gotra' in Wayanad District**

Wayanad, the land of natural beauty has the highest concentration of Tribal Population in Kerala. Out of 8.5 lakhs of population, 28% consists of Adiya, Paniya, Kurichiyar, Kuruma, Nayikka, Kattunayikka, Pathiya, Mullankkuruma tribal people. Even today, people of Paniya and Kattunayikkar tribal groups are far behind in housing, food, shelter, education and employment. Nayika group of tribal people likes to live within the forest. They are indulged in collecting forest resources like gooseberries, wild honey, fungus, mushrooms, wild potatoes and herbal medicines. Paniya tribes are people who make a living by working in the fields and farmyards or at ginger fields and vegetable gardens of other states. It was inevitable to find a solution on education and economical sector for this marginalized group who are alienated in the forest and the countryside.

The indigenous tribal students could not attain learning achievement, along with the other students, due to their social backwardness. The indisposition to mingle with others, cultural diversity, geographical barriers, lack of transportation facilities, threat from wild animals, are some of the reasons for their lack of attachment towards the schools. Apart from this the impoverished state of parents, drunkenness, and lack of material facilities in hamlets, some beliefs and customs in tribal sections augment this backwardness. Despite the fruitful intervention done till date for the enhancing learning of the indigenous tribal students, studies show that we have miles to go forward in this field.

Hygiene, proper diet, adequate sleep and proper studies of tribal students need to be made more scientific. Comprehensive interactions are needed from the local community for the progress of tribal students' education, especially for the Paniya group need to be more scientific. Children's Language problems are not only barrier to learning. Multiple interactions (multidisciplinary intervention) aimed the holistic development of such students across all areas of disabilities.

## **Objectives of the study**

1. To develop an intervention package (multiple intervention programme) for enhancing the learning of Paniya group of tribal students.
2. To evaluate the effectiveness of the intervention package for enhancing the learning of Paniya group of tribal students.
3. To empower the teachers, parents and students of selected schools to implement the multi -intervention package.

## **Methodology**

### **Method adopted for the study**

Survey and experimental methods were used for this study. Pre- test – post- test experimental design was used.

### **Sample**

Purposive sampling technique was used for this study. Four schools were selected for the study, out of which, two schools were identified as control sample and the remaining 2 schools were categorized as experimental sample group in order to study the effectiveness of package.

### **Tools and techniques**

1. Multi- intervention Package
2. Oral Test for Students
3. Observation Schedule
4. Interview
5. Questionnaire for Parents
6. Questionnaire for Teachers
7. Focus Group Discussion for Stake holders
8. Document analysis

### **Analysis of data**

Percentage Analysis, Descriptive Statistics, inferential statistics like ‘t’ test were used for data analysis.

## **Findings of the study**

- Students who were undergone through the package ensured significant progress in their academics and this may be due to the effectiveness of the various activities given in the package.
- Through the implementation of the intervention package, students' affection towards teachers increased and their communication improved a lot.
- In connection with the implementation of the package, teachers visited the homes of children and encouraged them to read books with the help of parents.
- The attitude of teachers towards students became positive and progressive, after the implementation of intervention package and the teachers were more empowered in providing activities for students.
- The children's health care habits can be greatly improved through the programmes in the intervention package such as hand washing training and introduction of drink bell games
- The lessons conveyed by linking the tribal Language as part of the package implementation could enhance the learning process and pave the way for mastering the ideas and reading the lessons further.
- The vast majority of students who have undergone through the intervention package could increase their interest to go to school and their level of learning has improved a lot.
- The participation of parents in their children's learning activities and their motivation for studies have improved a lot after intervention.
- As part of the various counseling sessions and activities of the intervention package, the parents were able to reduce their alcohol consumption and usage of drugs.
- After the implementation of package, a small percentage of parents took initiative to admit their children to pre-primary schools (anganwadis) before admitting to primary schools.
- The activities done as part of the implementation of the intervention package such as enhancing students' literary aptitudes, encouragement and interventions

to reach children to school on time, adequate focus on studies, reducing child labour etc were very effective.

- Study tour and study camps organised for students could improve self- esteem and leadership quality within them.
- Teachers could make communication more effective when different ideas were communicated using the tribal language.
- Local, as well as native folk games and entertainment involved in learning activities could result in great learning progress of students.
- The percentage in attendance of students showed a remarkable increment after the implementation intervention package.

### **Suggestions**

- As the intervention package had been implemented and proven to be effective, and based on the discussion and data analysis by teachers, parents, students and subject experts of tribal Language and culture, the following suggestions were made for further discussion and consideration:
- Connecting the culture and heritage of tribal people when transacting the lessons could help in ensuring children's learning quality and participation.
- The attendance of tribal students could be increased by providing tribal language- friendly training, entertaining through local folk performances of the tribal children.
- Organizing reasonably integrated language training exercises between tribal language and textual language (Malayalam) could help in further strengthening the learning activities and ideas.
- Ensuring the services of the respective tribal mentor, teachers in all schools would be helpful for the children in eliminating their learning difficulties.
- Mentoring can be expanded by incorporating children's family in addition to the priority given for learning.
- Health hygiene corps focusing on schools and hamlets to promote and ensure the hygiene practices of children can be formed.



- It is also necessary to organize student empowerment programmes to inspire and build a sense of identity, like students led camps, workshops and study tours.
- Organise work experience camps for children to develop skills ( Eg: doll making, sewing, clay modeling, sea food making).
- Child friendly farm clubs, clinics organised by health workers and environmentalists should also be started.
- The service of a counsellor, psychologist, social worker and legal experts should be ensured for the physical and mental health of children.
- To promote healthy eating habits, take necessary steps to find out unique local food dishes and that are to be provided by schools.
- Local PTA meetings, Mother's PTA, 'PadanaVeedu' (village education center) should be organized including all the houses in the hamlet.
- Tribal community fests should be organized and training should be given under the guidance of teachers and tribal artists.
- Continuous awareness campaigns should be carried out in the family and at hamlets to eradicate drugs and alcohol as that are weeds to the education of children of next generation.
- Parental support cells can be set up in schools to raise awareness of the benefits and opportunities that parents are entitled to get.
- Awareness should be made among parents about their responsibility on the growth, education and employment of their children.
- Arts and sports, talents should also be encouraged and they should be made as part of their academics.
- Parents should be provided with adequate awareness to ensure parental monitoring of their child's development and not to be subjected to exploitation.
- Introduce the programmes such as drink bell water programme, hand washing programme to improve the personal hygiene of children in all schools.

## **Academic Enrichment of Children of Migrant Labours in Kannur District: An Intervention**

India is a land of cultural pluralism and the hallmark of Indians is unity amidst diversity. Every state in India preserves its own cultural and linguistic identity. Kerala is a role model for the nation for its general standards of living. The expansion of general education and the excellence in public health sector are the main reasons for this achievement. Despite the state's success in bringing children belonging to all sections of the society to schools, providing quality education to all remains a big challenge. The rapid development in all fields including technology enabled cultural integration. Many people from other states are migrating to Kerala for employment and other needs and are enrolling their children to Government schools. Children of labourers from the northern states of India such as Assam, Bengal, Bihar, Orissa and Rajasthan have got admission in the Government schools of Kerala.

The majority of children of migrant workers from other states, who gain admission in the schools of Kerala, suffer severe economic and social backwardness. These children who live in joint families do not get their own study room, study materials, study time and help from elders. They depend completely on the opportunities available at school. The language spoken by the teachers and classmates at school is unfamiliar to them. In this circumstance, retaining such students in schools and achieving academic excellence are possible only by fostering an emotional intimacy with both school and learning. Some adaptations in the present activities are required to keep these students to classroom activities with confidence.

The worst affected in multilingual classrooms are the students of first standard. When these students who speak different languages fail to respond to learning activities and in turn, the teachers lose their confidence. Teachers need to be convinced that when a student passes through learning activities in his mother tongue and cultural background, it brings his creativity and makes learning a life related experience.

Teachers shall be empowered for this by providing them with necessary support and learning materials.

### **Objectives of the study**

1. To find out the academic problems faced by children of migrant labourers in Kannur district
2. To find out the support provide in schools for children of migrant laboureres
3. To identify the parental support rendered for the education of children of migrant labourers
4. To find out the effectiveness of the academic enrichment package developed for children of migrant labourers

### **Sample for the study**

There are 742 children of migrant workers in various sub districts of Kannur district who are studying in various schools. A sample of 67 students from 3 schools in the Kannur Corporation limits, where more number of children of migrant workers are studying , is selected for the study.

### **Findings of the study**

- 31% of the learners have attained a better quality in Malayalam. However, 69 % of the teachers have responded that they need learning support.
- As compared to languages, the level of learning is better in Mathematics (75%) and Environmental Science (63%).
- 75 % of the teachers have responded that these students are backward in English language.
- 62 % of the teachers are of the opinion that most of the children lack confidence and tend to withdraw while engaging in learning activities.
- 69 % of the teachers have the opinion that language is a barrier for students to engage in learning activities.

- 75% of the teachers use the response page of the teaching manual for recording the learning standard of students from other state. However, 14 % of the teachers use a separate book for recording the same.
- 82 % of the students show interest in games and cultural programmes.
- Sharing of experiences with classmates and teachers about their home state, home affairs and individual details is much less.
- Only a few teachers responded that special programmes are conducted for such students in assembly
- All teachers opined that neither classmates nor teachers visit the home of migrant students.
- Most of the students from other states do not receive support in learning from their parents or from their family background.
- Students do not have facilities like table, chair, study corner, etc for their studies at home.
- Parents are either illiterate or have only elementary education.
- Students have to remain starved at home when their parents are away from home or reach home late owing to job requirements.
- Parents do not interfere in the learning of their children either due of lack of interest or due to their busy work schedule. However, those who interested cannot interfere due to constraints of language.
- While comparing the pre-test and post-test scores of students at above average level in Malayalam reading and essay writing, it is found that the number of students at above average level has increased.
- After the implementation of the learning package when the pre-test and post-test scores on Mathematical operations like addition, subtraction and numerical interpretation were compared, the numbers of students in the above average level in these competencies has increased.
- While comparing the skills of students in picture reading and essay writing in English before and after the implementation of the package were compared, the

study reflected that the number of students in the above average level has increased.

## **Suggestions**

- In multilingual classrooms, students face difficulties related to learning. It is necessary to adopt suitable learning methods and novel teaching models to solve them. Therefore, the different methods adopted in multilingual classrooms as part of this study need to be discussed at the state and national level.
- This learning model can be expanded to the multilingual classrooms in all the schools over Kerala.
- Separate textbooks shall be prepared and made available to students.
- Teachers may be given training to facilitate the learning of these students at different levels in a classroom.
- Different projects need to be planned in order to hold the parents close to the school.
- Beyond mere classroom transaction, schools shall be made more attractive through a variety of interesting activities for students from Standard 1 to 4.
- Excellent and interesting basic facilities shall be provided in these schools.
- Fixed income livelihood for parents shall be found out and provided through the intervention of social activities.
- Considering the circumstances of each school, package for students shall be provided comprising activities to make the parent, a learner as well.
- The participation of maximum number of parents in PTA meetings and their cooperation shall be ensured by considering their convenient time, following a language comprehensible to them and through social interventions.
- Theatre like techniques shall be used to solve the language constraints in learning.
- Projects like 'Roshni', envisioned to solve the language issues related to students from other states, shall be implemented to solve the language

problems of these students belonging to different states speaking different languages.

- It is better to organize time bound training for teachers in other languages and appoint special language teachers.
- Teachers and indigenous students shall make home visits so as to develop confidence in the children of migrant workers.
- Parents shall be made aware that they need to plan their visit to home town during school holidays only so as to avoid being away from learning process for a long time.

## **Effectiveness of a Language Learning Package for enhancing Academic Achievement of Children with Mother Tongue Tulu in Kasargod District**

Kerala is the only state in India where Malayalam is the mother tongue. The Constitution guarantees that the people of any part of India have the right to preserve their unique language and script if they have it. Kasargod - the 'Saptabhasha Sangamabhoomi' follows the nationally recognized languages such as Tulu, Marathi, Kongini, Hindustani and other dialects such as Bari, Havyaka, Kudava and Arakannada for communication. However, the official schools in the district are Malayalam and Kannada medium schools. Tulu is part of the unique culture of Kasargod and is the second most spoken language (2.81%) after Malayalam. Children whose mother tongue other than Kannada and Malayalam doesn't have adequate facilities to learn in their mother tongue. The current situation denies the children's right to learn in their mothertongue along with their right to ensure a high standard of learning and qualification. It is a great flaw that children with mothertongue Tulu are not able to get primary education in their spoken language in most of the areas in the Kasargod district. This alienation in children causes learning difficulties, which in turn leads to dropouts. It can also lead to problems such as reluctance to go to school, lagging behind in classroom activities, not responding properly to teacher's suggestions and questions, and lagging behind in assessment and other processes. Therefore, ensuring the learning of such children through their mothertongue is relevant and obligatory in the educational process. At present there are no facilities in the field of formal education to facilitate communication in Tulu mother tongue. Hence, it is essential to nurture the Tulu language and culture and also to create learning contexts in Tulu mother tongue during the classroom activities. Till this date, no comprehensive study on the academic problems of children who speak Tulu are addressed and no serious interventions are made. Hence the present study is relevant and significant.

## **Objectives of the study**

1. To find out the academic problems faced by the primary school students with mother tongue Tulu in Kasaragod district.
2. To find out the language learning status of primary students with mother tongue Tulu studying in Kannada / Malayalam medium.
3. To develop a learning packages in Tulu language.
4. To test the effectiveness of the study package.

## **Methodology**

### **Method used for the study**

- The method used for this study were survey and experimental.

### **Sample**

- 10 schools from Kasaragod educational district (Kasaragod, Kumbala, Manjeshwaram sub districts) having the highest number of students with mother tongue Tulu were selected as sample for the study. 126 students were taken as sample for survey method. Purposive sampling was adopted for the selection of samples.

### **Tools and Techniques**

1. Rating scale ( Teachers)
2. Interview Schedule ( Educational Officers)
3. Focus Group Discussion ( Parents)
4. Observation Schedule ( Headmaster, Teachers, Students )
5. Achievement Test
6. Learning package for children in mother tongue - Tulu.

### **Statistical methods**

- Percentage Analysis and t- test are the statistical methods adopted for the study.



## **Findings of the study**

- 40% each of teachers found very difficult and sometimes difficult to translate learning experiences into Tulu language whereas 20% of teachers found it extremely difficult.
- While 40% of the teachers fully agreed with the need for a handbook in Tulu, 50% of the teachers agreed on an average level and 10% of the teachers disagreed.
- Only 20% of teachers pay attention to find the Tulu words that are equivalent to new words whereas 70% of teachers pay attention from time to time in this regard.
- 40% of teachers reported that children with Tulu mother tongue find it very difficult to do homework, 50% of teachers reported that they have occasional difficulty and 10% of teachers reported that it was not at all difficult.
- It was found that the ability of children to hold leadership positions on various committees in the school and the ability to participate in sports and work experience activities were average.
- It was found that oral and written forms in Tulu were rarely used as part of classroom activities.
- 10% of teachers reported that children speaking in Tulu did not fully understand normal learning activities, 70% of teachers reported that they had only limited understanding, and 20% reported that the children had no difficulty in understanding the normal learning activities.
- The study revealed that while 30% of teachers always communicated with the parents of children who speak Tulu language only 40% communicated occasionally and 30% communicated rarely.
- It was found from 40% of teachers that Tulu children do not get much opportunity to communicate in their mother tongue in the classroom, whereas 40% of teachers reported it as occasional and 20% of teachers reported that children always got opportunity to communicate in mother tongue.

- Since teachers plan and execute activities in the classroom in the official language, it was difficult for different groups of children to communicate adequately.
- Problems of Tulu language children were not discussed on the basis of an agenda in regular academic meetings.
- Problems of the children who speak tulu language were not addressed in the class monitoring of the education officers and the monitoring of the head teachers.
- Although there are relatively few Tulu language teachers in the Kannada medium, they did not get the expected support. The lack of Tulu language teachers in the Malayalam medium is noteworthy.
- It was found that suitable modules or local texts were not developed or utilised to help children who speak Tulu language.
- There were no local support systems or learning centres in the areas where Tulu children lived.
- Children who speak Tulu did not receive adequate treatment from the Department of Public Education.
- The study revealed that no school owned a well-equipped library for the enhancement of Tulu language education whereas 20% of schools had average level and 80% of schools had inadequate library facilities.
- There are currently no schools that have good relations with various social institutions for the promotion of Tulu language. However, 40% of schools keep good relations on an average level and 60% of schools below average.
- The study revealed that 70% of the teachers who implement the Tulu learning package prepare the syllabus in an excellent manner and 30% in an average level.
- It was found that learning materials for learning Tulu language were used at an average level in 20% of schools where as they were rarely used in 80% of schools.

- The study found that while 50% of teachers prepared, collecting the resources for learning Tulu language at an average level, the remaining 50% of teachers prepared and used it only to a very limited extent.
- It was found that only 20% of schools use the self made learning packages for children who speak Tulu at an average level. It was surprising to note that 80% of schools neither prepared the self made learning packages nor utilised them.
- In the study it was revealed that 40% of the teachers were well versed in Tulu language, 40% had an average level of understanding and 20% had very little understanding.
- Study showed that in selected schools where Tulu students study, children's notebooks and manuscripts were used effectively in 70% of schools whereas 30% of schools used in an average manner.
- Analysis of the post test conducted after the implementation of the learning package showed that 90% of the students in a school got A grade in the activity related to creative writing.
- When A and B grades were combined it was found that a total of six schools ie.,3 schools which secured above 80% and 3 schools which secured 50% achieved high standards. There were 4 schools where not a single child had D grade.
- In the pretest post test analysis, 54.8% of the students got A grade in the pre-test for the discourse oriented writing activity after the picture reading. But in the post test it became 86.5%. The score level has increased quantitatively by 32% in the pre-test-post-test gap. Proportionately, it dropped from 15.9% C grade in the pretest to 3.2% in the post test.
- When the A and B grades were added, 40.5% in the pre-test changed to 64.3% in the post test.
- In the picture based story telling activity, 18.3% of students scored A in pretest and in post- test it became 33% .The B grade changes from 33.33% to 34.1% in the post test. When A and B grades were added, it increased from 51.6% in the pre-test to 67.1% in the post test.

- In the above activity, the percentage of students in D and E and Grades has decreased from 28.5% in the pre-test to 11.9% in the post-test D grade. There were no children who got E grade.
- In the activity of conversation after picture reading, 40.5% of students got A&B grades in the pre-test and 64.3% in the post test. The pre-test-post-test gap increased by 23.8%. None of the children got E grade in the post-test.
- There were 31.7% students in D and E grades in pre-test and only 11.1% in D grade in post test.
- It is a testament for the fact that though it was a creative writing activity about 23.8% increase was found in the number of students achieving higher A and B grades. So the study revealed that children have embraced the Tulu language package with interest.
- When Pre-Test and Post-Test Grade were subjected to t- test, the P value obtained was below 0.05. Hence it was found that the Tulu learning package was effective.

## **Suggestions**

- Teachers should be provided with opportunities to familiarise lectures, literature and reports in Tulu language to enhance their communication skills in Tulu.
- A special learning package and manual should be prepared to plan learning activities for children with mother tongue Tulu.
- Children with mother tongue Tulu should be provided with worksheets, charts, learning materials, etc. to help them in learning.
- A special document should be prepared and kept to assess the learning progress of children with mother tongue Tulu.
- Camps and trainings should be specially planned to enhance the communication skills of children with mother tongue Tulu. District level planning is needed for this.
- Parents need to be empowered at the school level to assist their children in their learning activities and to encourage them to do homework.

- More creative interventions should be pursued in shaping and utilizing children's creative work.
- In SRG meetings and school daily planning emphasis should be given in the development of working strategies which can solve the learning problem of children with mother tongue Tulu.
- Schools with children whose mother tongue is Tulu should have special school calendar and study materials.