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EDITORIAL

Education plays a very important role in moulding the character of an individual. It is one of the supreme sources from which one gets information and knowledge. Education helps students to acquaint themselves with social, moral, and cultural values and teachers make them familiar with values and ideals through different activities. Education also makes them familiar with rules and regulations which govern the society and nations. As we find in NPE 1986, major objectives to produce a productive citizen is fulfilled by education.

Through education, individuals become aware of the importance of unity, love, fraternity, and other values which unify our nation, in spite of our various diversities. Education makes all people get awakened to become a part of society and also to learn how they can contribute to the world as a member of the society. But education needs research based findings in order to effect its function. Research helps teachers to understand what works and why, what the short and long term implications are, how to provide justification and rationale for decisions and actions, how to build a repertoire to deal with the unexpected, how to identify problems, inform improvement, and so forth. Through this journal our aim is to provide a medium for dissemination of educational research and for the exchange of experiences among those who are interested in educational research.

The present issue of the Avila Journal of Educational Research has 12 articles. The first article deals with the effectiveness of Polya's approach on problem solving and problem creating ability in mathematics of secondary school students. The second article is about the attitude of vocational higher secondary school teachers on vocationalisation of education at plus two level in Kerala. The next paper highlights pedagogics of the open and distance learning (ODL). In the next study multimedia package for enhancing eye hand co-ordination among primary school students with dysgraphia is discussed. The article focuses on voice chatting: a fascinating technique for teaching biology is given next. Health and hygiene awareness of adolescent girls in Aruna Nagar community in Delhi constitutes the next study. In the next study the researcher focuses on the metacognitive awareness of tertiary level teachers. The next paper studies the time utilization of secondary school students of Kerala. The study which follows, the effectiveness of think-pair-share technique on the achievement in mathematics of students at secondary level, throws light in the effectiveness of this technique. In the next paper, educational and psycho social problems of secondary school students belonging to Eravallan tribe of Palakkad district is discussed. The last paper in this issue focuses on the self concept and the level of aspiration of the students from coir workers' families in Alappuzha district.

Let me take this occasion to thank all those who have contributed immensely for the success of the fourth volume of Avila Journal of Educational Research. We are looking forward to the constant support, cooperation and feedback of our beloved readers.

Chief Editor

EFFECTIVENESS OF POLYA'S APPROACH ON PROBLEM SOLVING AND PROBLEM CREATING ABILITY IN MATHEMATICS OF SECONDARY SCHOOL STUDENTS

Celine Pereira and Elizabeth Thomas

Abstract

The study focusses on the effectiveness of Polya's approach on problem solving and problem creating ability in mathematics of secondary school students. The main purpose of this study was to develop a teaching strategy which may foster creative thinking abilities among children. Here the investigator selected survey cum experimental method to conduct the study. The design selected for the present study was pre test – post test non equivalent groups design. The tools used for the study were mathematical problem solving ability test and mathematical problem creating ability test. The sample included 200 students of standard IX. The findings of the study reveal the effectiveness of Polya's approach on problem solving and problem creating ability in mathematics.

Introduction

Teaching young people to read and understand mathematical material is a neglected aspect of secondary mathematics teaching. They must learn that because of the extensive symbolism, it is not like reading a novel and that it usually requires several readings before they can expect reasonable comprehension of the material. Because of this, mathematics requires slow reading. We are concerned with encouraging pupils to develop not only their powers of mathematical thinking, but also a positive attitude to the subject, and a capacity to take responsibility for their own progress. Skemp (1971) has suggested that activities which favour the growth of schemas give pleasure. Some would say that it is the knowledge of increased ability to do mathematics that is so satisfying. Satisfaction comes from successful problem solving and we believe that problem solving should be part of any learner's experience of mathematics. The phrase "problem solving" is used in different ways. If we are interested in situations in which the learner of mathematics has some objective but does not know how to achieve it. Bell et al. (1983) emphasize that, if knowledge is to be retained and applied in new situations, the more connections that can be made in the memory structure, the better. This can be done if learners understand the steps in a skill in terms of the concepts they have already formed. Skills learned with understanding are superior to those learned by rote methods.

The National Curriculum Framework for School Education (NCFSE-2000) reiterates the importance of mathematics education as visualized in NPE-1986. According to NCFSE, one of the basic aims of teaching mathematics in

schools is to inculcate the skills of quantification of experiences around the learners who in turn carry out experiments with numbers and forms of geometry and frame hypothesis, verify them, generalize the findings with proof and make decisions applying mathematics. Mathematics education develops precision, rational and analytical thinking, reasoning, and competence to solve problem, and develop positive attitudes and aesthetic sense. The emphasis for learning mathematics is that all students can learn and need to learn mathematics. Pedagogy and learning environment have to be made favourable for students to develop interest beyond their basic skills.

Most of the time, the classrooms of mathematics is pre-occupied with routine teaching and not much time is devoted to learning of mathematics. Hardly a student asks questions in a mathematics classroom implying that true learning rarely takes place in classrooms. It is always good if pupils think about or reflect upon what has been done or learned in mathematics. If pupils do not reflect upon mathematics used in problem solving, the chances are that forgetting will occur. Kumari (1994) found that students differ significantly in attitudes and creative thinking if taught by the reflective methods as compared to traditional methods of instruction. Hence the investigator decided to make an attempt to study the effectiveness of polya's approach on problem solving and problem creating ability in mathematics of secondary school students

Hypothesis of the Study

Problem solving ability of students in geometry, algebra, and arithmetic of the experimental group taught through Polya's approach will be higher than that of students taught through activity oriented method.

Objectives of the Study

To compare the problem solving ability of secondary school students taught through Polya's approach and that of students taught through activity oriented method in

- Geometry
- Algebra, and
- Arithmetic

Methodology in Brief

The investigator selected survey cum experimental method to conduct the study. A sample of 200 students was selected from Fatima Girls High School, Fort Kochi for administering the questionnaire. 100 students of standard IX were selected from St. Mary's A. I. G. H.S, Fort Kochi and 100 from St. John D Britto Higher Secondary School, Fort Kochi. 100 students were taken as sample for the experimental group and the remaining 100 as control group. The experimental

group was taught by Polya's approach and the control group by the prevailing activity oriented method. The tools used for the study were lesson transcripts based on Polya's approach, activity oriented method, questionnaire to students, mathematical problem solving ability test, mathematical problem creating ability test. ANCOVA was used for comparing the scores.

Results and Discussion

1. Comparison of mathematical problem solving ability of students taught through Polya's approach with that of students taught through activity oriented method in geometry

The pre-test and post-test scores in geometry of the experimental group and control group were subjected to analysis of covariance (ANCOVA) to determine the effectiveness of Polya's approach on the problem solving ability over the activity oriented method. The adjusted means of post-test scores (Y means) of pupils in the experimental group and control group were computed. The difference between the adjusted Y means was tested for significance. The details are presented in table 1.

Table 1. Data and result of the test of significance of the difference between adjusted means of post-test scores (geometry) in the experimental group and in the control group

Group	N	Mx	My	Myx (adj)	t value
Experimental	100	0.11	6.6	6.65	
Control	100	0.15	5.45	5.30	4.5
Total	200	0.13	5.98		($p < .01$)

The 't' value for the difference between the adjusted means of post test scores of the experimental and control groups was found to be significant at .01 level ($t = 4.56$, $p < .01$). This reflects that the adjusted mean of post test scores of Polya's approach in geometry differs significantly from the adjusted mean of the post test scores of geometry taught through activity oriented method. The adjusted mean of the post test scores of the experimental group is 6.65, which is significantly higher than that of the control group whose adjusted mean of the post test scores is 5.30. This confirms the supremacy of Polya's approach in the problem solving ability of students in geometry over activity oriented method of teaching.

2. Comparison of mathematical problem solving ability of students taught through Polya's approach with that of students taught through activity oriented method in algebra

The difference between the adjusted means of post-test scores in algebra (Y means) of pupils in the experimental group and control group were tested for significance. The data and result of the test of significance is shown in table 2.

Table 2

Data and result of the test of significance of the difference between adjusted means of post-test scores (algebra) in the experimental group and in the control group

Group	N	Mx	My	Myx (adj)	t value
Experimental	100	0.09	5.9	5.96	
Control	100	0.13	2.4	2.30	14.64
Total	200	0.11	4.13		(p < .01)

The 't' value for the adjusted means of post test scores of the experimental and control groups was found to be significant at .01 level ($t = 14.64$, $p < .01$). This reflects that the adjusted mean of post test scores of Polya's approach in algebra differs significantly from the adjusted mean of the post test scores of algebra taught through activity oriented method. The adjusted mean of the post test scores of the experimental group is 5.96, which is significantly higher than that of the control group whose adjusted mean of the post test scores is 2.30. This confirms the supremacy of Polya's approach in the problem solving ability of students in algebra over activity oriented method of teaching.

3. Comparison of mathematical problem solving ability of students taught through Polya's approach with that of students taught through activity oriented method in arithmetic

The difference between the adjusted means of post-test scores in arithmetic (Y means) of pupils in the experimental group and control group were tested for significance. The data and result of the test of significance is shown in table 3.

Table 3

Data and result of the test of significance of the difference between adjusted means of post-test scores (arithmetic) in the experimental group and in the control group

Group	N	Mx	My	Myx (adj)	t value
Experimental	100	0.01	4.1	4.14	
Control	100	0.04	1.6	1.53	10.04
Total	200	0.03	2.84		(p < .01)

The 't' value for the adjusted means of post test scores of the experimental and control groups was found to be significant at .01 level ($t = 10.04$, $p < .01$). This reflects that the adjusted mean of post test scores of Polya's approach in arithmetic differs significantly from the adjusted mean of the post test scores of arithmetic taught through activity oriented method. The adjusted mean of the post test scores of the experimental group is 4.14, which is significantly higher than that of the control group whose adjusted mean of the post test scores is 1.53. This confirms the supremacy of Polya's approach in the problem solving ability of students in arithmetic over activity oriented method of teaching.

Educational Implications

The findings of the study reveal that problem solving ability of students in geometry, algebra, and arithmetic can be enhanced through Polya's approach. Learning through Polya's approach helps the students to establish a routine for problem solving and helps them to become better problem solver. Teaching through Polya's heuristic approach develops the thinking power and it helps the student to understand the processes involved than the product. Learning through this approach helps in posing problems which in turn develops the creative ability of the student.

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ATTITUDE OF VOCATIONAL HIGHER SECONDARY SCHOOL TEACHERS TOWARDS VOCATIONALISATION OF EDUCATION IN KERALA

Benny Varghese

Abstract

The greatest challenge in Indian education system today is to provide skill based education to the youth. This is exacerbated by a mismatch in demand and supply for the skilled workforce. The penetration of vocational education and training remains poor not only in rural areas, but also in urban regions where there is a higher installed capacity to impart the same. The present study is an attempt to analyze the attitude of higher secondary school teachers towards the vocationalisation of education in Kerala. Normative survey method was adopted for the study. The analysis of data was carried out employing appropriate statistical techniques such as percentage, mean, standard deviation and 't' test (critical ratio). The results revealed that majority of the teachers possess a positive attitude towards vocationalisation of higher secondary education in Kerala.

Introduction

The present education system is critical on many grounds, one of which is that our school curriculum does not include vocational subjects which are necessary for training the students to participate in the economic development of the country. Realizing this situation, the Education Commission (1964-66) started another programme which can bring education into close relationship with productivity. It gives a strong vocational bias to secondary education and to increase the emphasis on agricultural and technological education at the university stage. This is of special significance in the Indian situation where the educational system has been providing training to young persons, mostly for government services and the so called white collar professions. The introduction of practical subjects in secondary schools to divert students into different walks of life was first recommended by the Hunter Commission, 1882. But little or no effective action was taken to implement the recommendations and even today the enrolment in the vocational courses at the secondary stage is only nine percent of the total enrolment, which is among the lowest in the world.

One of the drawbacks of our system of secondary education is that it is bookish and unrelated to life. It does not give recognition to the dignity of labour. In the modern age, there is a growing realization that the gulf between theory and practice should be bridged. The social gulf between the people on the basis of nature of work should be totally eliminated. To achieve this end, we should have a broad based and diversified curriculum, which includes new vocational and

practical subjects in addition to the traditional core-curriculum. It is the age of science and technology. Modernization and the rapid development are continuously taking place. As a result, a large number of employment opportunities in both wage as well as self-employment are created. But there is a dearth of suitably qualified person with appropriate skills, knowledge and competence to exploit these opportunities. Therefore, to meet the national need of trained manpower and also to divert a large section of students from university education to a variety of gainful vocations, vocational education was introduced at the higher secondary stage along with the academic streams.

Vocational Education and Training (VET) is an important element of the nation's education initiative. For Vocational Education to play its part effectively in the changing national context and for India to enjoy the fruits of the demographic dividend, there is an urgent need to redefine the critical elements of imparting vocational education and training to make them flexible, contemporary, relevant, inclusive and creative. The government is well aware of the important role of vocational education and has already taken a number of important initiatives in this area. The one and only job of teachers to instill factual knowledge into students is not feasible anymore and is questionable in the current society. The society has developed a variety of roles for teachers to function and practice in this technological era. Everyone's expectation toward teaching and learning shifted dramatically to emphasize the impact of social and technological network on education. The value of teachers is not through lecturing but through guiding and facilitating students to become self-directed learners. The role of teachers has transferred to a more broad and diverse definition to meet the needs of learning communities. In a diverse society, teachers should view each student as an individual and facilitate learning based on personal interests. It's the diversity and individualization that make the world unique and special. Hence it is necessary to study the attitude of teachers towards the vocationalisation of education in Kerala.

Objectives of the Study

1. To study the attitude of vocational higher secondary school teachers towards the vocationalisation of education in Kerala
2. To compare the attitude of vocational higher secondary school teachers towards vocationalisation of education based on gender
3. To compare the attitude of vocational higher secondary school teachers towards vocationalisation of education based on type of management

Methodology in Brief

The present study is an attempt to analyze the attitude of higher secondary school teachers towards the vocationalisation of education in Kerala. Normative survey method was adopted for the conduct of the study. The sample consisted of 300 vocational higher secondary school teachers from fourteen revenue districts of Kerala. The sample was selected using stratified random sampling technique. To collect the data required for the study a five point attitude scale (Likert type) prepared and standardized by the investigator was used. The analysis of data was carried out employing appropriate statistical techniques such as percentage, mean, standard deviation and 't' test (critical ratio).

Analysis and Interpretation

1. Attitude of vocational higher secondary school teachers towards the vocationalisation of education in Kerala

The responses of 300 vocational higher secondary school teachers were collected and subjected to statistical analysis. The details of the analysis are given in table 1.

Table 1

Number and percentage of vocational higher secondary school teachers' attitude towards vocationalisation of education

Level of Attitude	Number	Percentage
Favourable Attitude	196	65.33%
Unfavourable Attitude	83	27.66%
Neutral Attitude	21	7.00%

Among 300 teachers who responded to the attitude scale, 196 teachers scored greater than 90, the middle score. That is majority (65.33%) of the total sample showed a positive attitude. 83 (27.66%) teachers scored less than 90 showing unfavourable attitude towards vocationalisation of education. 21(7%) teachers showed a neutral attitude. Hence it is interpreted that the overall attitude of vocational higher secondary school teachers towards vocationalisation of education tends to be favourable.

2. Comparison of the attitude of teachers towards vocationalisation of education based on gender

To compare the attitude of vocational higher secondary school teachers towards vocationalisation of higher secondary education based on gender, the mean attitude score of 212 female teachers and that of 88 male teachers were subjected to t test. The details are given in table 2.

Table 2

Data and results of the test of significance of the difference between mean attitude scores of male and female vocational higher secondary school teachers towards vocationalisation of education

Gender	Number	Mean	Standard Deviation	Critical Ratio	Level of significance
Female	212	99.38	17.62	1.37	p > .05
Male	88	98.63	18.96		

Arithmetic mean and standard deviation of the attitude scores of male vocational higher secondary school teachers are 98.63 and 18.96 respectively and that of female teachers are 99.38 and 17.62. The critical ratio calculated (1.37) is less than 1.96, the value corresponding to .05 level of significance. It is interpreted that there is no significant difference in the attitude of vocational higher secondary school teachers towards vocationalisation of higher secondary education based on their gender.

3. Comparison of the attitude of teachers towards vocationalisation of education based on type of management

To compare the attitude of vocational higher secondary school teachers towards vocationalisation of higher secondary education based on gender, the mean attitude score of 160 government school teachers and that of 140 private/aided school teachers were subjected to t test. The details are given in table 3.

Table 3

Data and results of the test of significance of the difference between mean attitude scores of government and private vocational higher secondary school teachers towards vocationalisation of education

Type of management	Number	Mean	Standard Deviation	Critical Ratio	Level of significance
Government	160	98.87	18.54	1.62	p < .05
Private/Aided	140	98.07	17.72		

The arithmetic mean and standard deviation of the attitude scores of government vocational higher secondary school teachers are 98.87 and 18.54 respectively and that of private/aided school teachers are 98.07 and 17.72. The

critical ratio calculated 1.62 calculated is less than 1.96 the value corresponding to .05 level of significance. It is interpreted that there is no significant difference in the attitude of vocational higher secondary school teachers of different management towards vocationalisation of higher secondary education based on the total scores.

Conclusion

From the study it was found that majority of the teachers (65.33%) possesses a positive attitude towards vocationalisation of higher secondary education in Kerala. It was also noticed that there is no significant difference in the attitude of vocational higher secondary school teachers with regard to gender and type of management. The following suggestions were made based on the findings of the study.

1. The authorities should be aware of incorporating modifications in designing various vocational courses to face future challenges in a better way.
2. The gulf between the world of studies and the world of work should be broken so that the students who grow out of the education system may be productive members in the society.
3. The country is on the threshold of major technological changes. So training should be given to our students to become highly skilled technicians with right attitude and great competence.
4. The most threatening problem of the Kerala society faces today is unemployment. The records in employment exchanges revealed that unemployment is growing day by day. So every citizen should be equipped with necessary knowledge and skills to make him a productive worker.

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PEDAGOGUE OF THE OPEN AND DISTANCE LEARNING

Sibu G. Netto

Abstract

The article gives an overview of the Open and Distance Learning (ODL) system from the point of view of the students / learners and pedagogues / academic counsellors in the ODL system. The paper discusses the role of the academic counsellors in ODL system and the qualities and skills required by them for being effective in their works. The paper also focusses on the various stages of academic counselling and the ways of organising the counselling sessions.

Introduction

Open and Distance Learning has undergone many changes during the past few decades due to the developments in Information and Communication Technology. Academic counsellors have a dual role to play, providing general counselling as well as tutoring the learners assigned to them. Hence the present day academic counsellors have a greater role to play for the development of the system.

Distance Education

Distance Education is a process of teaching and learning, where the learner is 'quasi-permanently' separated from the teacher and peer group, and teaching is done usually through self-instructional materials (both print and non-print) and communication technology with an emphasis on supported self-study. Distance education is oriented towards a pedagogy that tries to infuse the teacher in the material. We have come a long way in defining and describing distance education – from the traditional 'correspondence education' and home-study' to the present 'flexible learning', 'distributed learning' and 'e-learning', through 'open learning' and what is called 'open university' education stand out as distinct provisions, especially in the developing world. The imperative today has been 'blended learning'. The focus is on the 'learner' and the mechanism is that of 'flexibility' (Panda, 2011).

Open Learning

Open learning is a system of education that does not operate through the traditional conventions which are essentially restrictive in admission, duration of course, and examination etc. It refers to a philosophy that brings in flexibility to the education system in terms of entry, eligibility criteria, choice of courses, adoption of suitable methods and media etc. Open learning is also known for the removal or minimisation of constraints to study in relation to access, entry, time, place, pace and method (Glasgow, 2011).

Open and Distance Learning (ODL)

The philosophy of Open and Distance Learning (ODL) allows the educational system to remain 'open' and the openness of the system leads to promotion of distance education. Open and distance learning can be conceptualised as a strategy of providing learning opportunities that are characterised by the separation of teacher and learner in time or place, or both time and place; learning that is certified in some ways by an institution or agency. The use of a variety of media, including print and electronic, two-way communications that allow learners and tutors to interact and the possibility of occasional face-to-face meeting (COL, 2000).

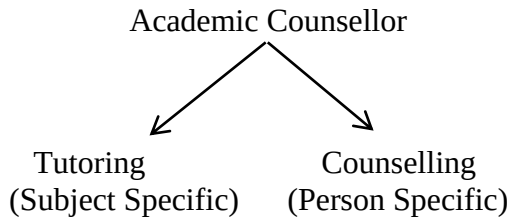
Distance Learners

A comparison of the learners of conventional systems and that of distance learning systems reveal that, the former learning is a full-time primary activity whereas for the latter learning becomes a part-time secondary activity. Majority of the conventional learners are part of a single institution of learning; whereas distance learners (adults with family and social responsibility) are part of many institutions that take precedence over the institution of learning. The conventional learners are frequently in contact with their institution and fellow learners whereas the distance learner hardly gets in touch with their institution and fellow learners; they mostly remain isolated. Moreover, the adult learners have returned to a role that s/he had been given up a long time ago. The gap between the present and the past experience of formal education can emerge as a hurdle for the adult learners.

Academic Counsellors

In ODL system teachers who write the courses remain at the head quarters of the Open and Distance Learning Institution (ODLI) and do not know the learners; the teachers who know the learners and assess their work do not write the courses; the latter groups of teachers spread across the Learner Support Centres (LSCs) of the ODLIs and are called the academic counsellors.

The persons who offer Academic Counselling are called 'Academic Counsellors'; they have a combined function of 'Tutoring' & 'Counselling'; as tutors they should be well versed in their subject of study and as counsellors they should possess positive human attributes such as warmth and ability to listen together with the skills of using these in a variety of Information Communication Technology (ICT) enabled and face-to-face modes of academic counselling. Academic counsellors are mediators between the learners and the ODL Institution and they are expected to offer support to the students through counselling and tutorial services. In addition, they evaluate the assignment responses of the learners and provide feedback through tutor comments.



Academic Counselling

The combination of general counselling and tutoring is known by the term 'Academic Counselling'. It encompasses all types of teacher-learner interaction that are aimed at facilitating learning. Such interaction may mainly be tutorial in nature featuring in between with various aspects of counselling. However, sometimes interaction may exclusively be in the nature of counselling. The term 'Academic Counselling' is used in a much broader sense of providing advice, academic and non-academic to the learners. It is basically learner-centered, unlike teaching which is mainly course centred; teaching emphasises mainly on cognitive components whereas counselling involves affective components.

Stages of Academic Counselling

The stages of academic counselling should not be seen compartmentalised; it has to be seen as a sequence of happenings wherein the learner can come in contact with the academic counsellor.

Pre – Entry / Pre – Enrolment: The learners who feel the need to bring in changes in life go to the academic counsellor. At this stage the prospective learner requires a mixture of information, advice and counselling on courses, entry requirements, application procedures, fees charged, fee reimbursement/ concessions, the teaching - learning process, recognition of the awards, employment prospects etc.

Entry / Induction: The pre-enrolment counselling helps the learner identify a line of action, change the set goals, carry out some preparatory works etc. The learner may require information on the number of courses in a programme, dates for submission of assignments, address of the nearest study centre etc. The counsellor at this stage needs to reassure the learner with ways for effective/ successful learning.

During the course: The counsellor at the initial stages of learning requires helping the learner overcome the anxiety of learning in the new system ODL. On progressing with the learning the learner requires counselling on academic difficulties that rise out of submissions of assignments and the feed-back and grades obtained for the assignments. At the middle of the course the counsellor

has to identify whether the learner is progressing, or is behind or has dropped out; The academic counsellor needs to provide constructive help to build confidence and motivation in the learner keeping in mind the background of the learner; the counsellor may also have to deal with certain personal and non-academic aspects of learners life to help him/her sustain with learning.

Examination: The learner at the final stage requires information about the time limits, initiation into any new activity such as a lab-course, a hands-on experience in a computer programme, preparation of a project-proposal, place of conduct of exam, feed-back, advice on exam techniques and revision, question types and answering strategies etc.

Post study: The learner at this stage has completed the course of study and might have decided to temporally give up learning or would have set new learning goals. The counsellors at this stage can advise on further course choice, can provide information regarding career advancement, job opportunities, future prospects etc. The counsellors can also extend help in communicating final results, grades awarded, convocation etc.

Qualities of an Academic Counsellor

Academic counselling is an important support service provided to the distance learners. A good academic counsellor thus needs to have certain qualities. Certain attributes expected of an academic counsellor are: Warmth, Acceptance, Genuineness and Empathy (WAGE) IGNOU (2008). Each of these components requires a close observation as these are critical elements for effective counselling.

Warmth: It is the ability of the counsellor to communicate personal warmth to make learners feel welcomed and valued as individuals. The learner should be made to feel at ease; a feeling of friendliness, interest and concern is to be communicated.

Acceptance: The relationship between the academic counsellor and the person who seeks counselling is based on the sincere interest and acceptance of the person as s/he is; it involves neither approval nor disapproval of the person who comes for counselling. The acceptance from the part of the academic counsellor should be unconditional and one as an academic counsellor has to overcome the weaknesses that arise out of authoritarian personalities, prejudice of various kinds and role identification for becoming successful in counselling.

Genuineness: This is the most basic element to a counselling relationship. This implies of one being naturally oneself; open, friendly and un-defensive. Admitting and sharing of feelings and anxieties, problems and setbacks that come across while counselling as a counsellor would make the learners think about the

ways to keep going with their tasks in hand. In other words it is better acknowledging the feelings of the learners and looking at ways this affects the relationship and response of the learner.

Empathy: This is the ability of a person to sense the feelings and experiences of another person and fully appreciate them as s/he does. It is putting oneself in other persons shoe and experiencing; it is nothing but feeling with the person. An empathetic response from the counsellor should ensure that the learner feels that the counsellor understands and appreciates his/ her feelings.

Skills of an Academic Counsellor

The real power of counselling stems from the creation of warm, sincere, dependable relationship and the main counselling skills makes such relationships a reality. The three basic skills required of an academic counsellor are - Selecting, Listening and Structuring (SLS) IGNOU (2008).

Selecting: This is a process of deciding what kind of response from Informing (communicating clear, accurate and appropriate information to queries; such information provided will be same to all learners), Advising the learner may raise a query having several responses. Advising him or her means giving information about the possible responses and suggesting an appropriate action, perhaps recommending and helping to choose out of several options available. Counselling would help the learners to understand their needs, feelings or motivation and would help them to make appropriate decisions regarding course selection and career. This is learner dependent rather than knowledge or institution based. This continuum is appropriate at a particular stage of interview/ meeting with the learner. The three activities that constitute academic counselling can be remembered by coining the term IAC.

Listening: The skill of active intelligent listening is central to all academic counselling whether informing, advising or counselling. However, it is not simply listening passively to what the learner is saying. The crux of listening is in being active and intelligent; the counsellor should simultaneously listen to what has been called the third ear. Some useful but simple technique that helps one listen better are open-ended questions (the academic counsellors can encourage the person in need to think and develop by helping them answer open ended questions), Acknowledgements (little phrases that encourage talk and using positive body language, maintaining reasonable eye contact, sitting alert etc.), Reflection (it is simply recapping in a condensed summary what the person has experienced)and Silence (use of silence in a counselling procedure is a skilful process that helps learners think). These four practical skills of listening can easily be recalled by coining the word OARS.

Structuring: Listening to the learner raises the question as to when and how to interfere and solve the learner's problems and answer their queries. This would actually form the heart of academic counselling. This is the process of structuring the counselling session in order to move towards the best solution. Structuring consists of three stages: clarification (the basic of clarifying the issues or problems by dialogue with the learners), checking (going back to the learners to ensure that the problem or issues are completely solved or are at least clear as it could be at this stage) and consequence (agreeing with the learner as to what s/he or the academic counsellor would do as a result of interview like, informing, advising or counselling). The three stages of structuring can be remembered with the expression 3C's.

Academic Counselling Sessions

Generally the academic counselling sessions are held at the LSCS during weekends (Saturdays and Sundays) and long holidays. Within the general schedule of the programme, the coordinators at the LSC would decide on the conduct of these sessions and will also provide the counselling schedules. The counselling sessions will include clarifications required in the print material and audio / video programmes through active interaction with students. Counselling sessions are held for both theory courses and the course on dissertation.

Academic counselling sessions generally expect the counsellor to create/ provide facilities to learn together; it expects minimal lecturing from the part of the counsellor;. Implementing group learning techniques for doubt clarification such as discussions, debates, use of audio and video materials are welcomed. The counselling sessions can be carried on by variety of means such as: Face-to-face Counselling, Counselling through assignments, Counselling through handbooks, Counselling through audio and video Cassettes, Counselling through radio broadcasts, Counselling through tele-vision transmissions, Counselling through telephones, Counselling through tele-conferencing, Chat – text, audio, video, E-mail, Counselling through internet – Web based learning, Online discussion, Web conference, etc.

Conclusion

Open and Distance Learning system has evolved as a very powerful medium for supplementing the conventional system of education. This system provides access to higher education to a large segment of the society who wishes to learn while they earn for advancement in their career. In this context academic counsellors and the academic counselling sessions play a vital role in spearheading distance education.

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MULTIMEDIA PACKAGE FOR ENHANCING EYE- HAND CO-ORDINATION AMONG PRIMARY SCHOOL STUDENTS WITH DYSGRAPHIA

M. C. Anilakumari

Abstract

The problem we face today in each class room is that of the poor performance of healthy and intelligent children who are neither retarded nor mentally or physically handicapped. These children possess normal vision and hearing and yet for some reason they cannot function adequately in a school environment. Their 1nteligence Quotient (IQ) measures 130 or above and apparently is capable of high quality work. Dysgraphia may cause students emotional trauma often due to the fact that no one can read their writing, and they are aware that they are not performing to the same level as their peers. Most of these children have become so accustomed to failure that there is a need to convince them of the possibility of success. The study aims to find out the impact of specially designed intervention focused to enhance certain skills which are necessary for academic performance among primary school students with Dysgraphia. The study is survey cum experimental in nature. For this purpose one group pre –test post-test design was adopted. The sample comprised of primary school students with SL. The tools used are intervention, inventories. The intervention based on academic skills is effective in enhancing eye hand coordination*. The result revealed that there is significant difference in the performance of children at different phases of implementation of the intervention.*

Introduction

Learning disability is a condition giving rise to difficulties in acquiring knowledge and skills to the level expected of those of the same age, especially when not associated with a physical handicap. Such a disability may result in problems with listening, thinking, speaking, reading, writing, spelling, and doing mathematical calculations. Experts believe that children with learning disabilities have a problem in the way the brain handles information, which in turn hinders the normal learning process. The most common learning disability is the difficulty with the use of language. A recent study of National Institute of Health study showed that 67 % of young students identified as being at risk for reading difficulties were able to achieve average or above-average reading ability when they received help early.

All children learn in highly individual ways. Children with learning disabilities simply process information in different manner but they have average or above-average intelligence. If an individual does not benefit from a regular education programme and is not socially disadvantaged, intellectually limited, pedagogically deprived, and shows no evidence for hard sign neuro physiological dysfunction, that individual is characterized as learning disabled. If an individual has difficulty in communicating either expressively or receptively, and cannot read or do mathematics within the criterion range established by the school, that individual is similarly considered to be learning disabled. The lack of precision in evidence for this characterization of the learning disabled reflects the confusion found in clinical and educational settings. Concern over learning disabilities is widespread and has become a major field of interest in neurology, psychology, and education. This disability may be specific or general to all cognitive areas. It may be present with or without behavioural, social, or motor problems. In short, learning disabilities are dyslexia, dysgraphia and dyscalculia. Each case has its own symptoms. Major concerns for any professional are the appropriate diagnostic and remedial/compensatory programmes.

Most individuals who have significant motor or sensory-motor handwriting challenges have a form of the neurological disorder known as Dysgraphia — with "dys" meaning "difficulty" and "graphia" meaning "writing." Dysgraphia is a deficiency in the ability to write, regardless of the ability to read, not due to intellectual impairment. In childhood, the disorder generally emerges when children are first introduced to writing. Dysgraphia can occur after neurological trauma or it might be diagnosed in a person with physical impairments, Tourette syndrome, ADD/ADHD. It is also possible for a person to be dysgraphic without showing evidence of any other disabilities. These individuals often have a parent or other close family members who show signs of dysgraphia as well. The DSM IV identifies dysgraphia as a "disorder of written expression" as "writing skills (that) ...are substantially below those expected given the person's ...age, measured intelligence, and age-appropriate education."

Dysgraphia is a medical term for a brain condition that caused poor handwriting or problems performing the physical aspects of writing (such as an awkward pencil grip or bad handwriting) spelling, or putting thoughts on paper. The disorder causes a person's writing to be distorted or incorrect. In children, the disorder generally appears when they are first introduced to writing, as they make inappropriately sized and spaced letters, or write wrong or misspelled words. The term may also be used to categorize more general writing problems, although in many cases these issues may be more clearly attributable to a more pervasive learning problem such as specific reading disability. Children with the disorder may have other learning disabilities but they usually have no social or other academic problems. Causes of dysgraphia in adults generally occur after an injury

or trauma. In addition to poor handwriting, dysgraphia is characterized by wrong or odd spelling and production of words that are not correct (such as using 'boy' for 'child'). The cause of the disorder is unknown.

Importance in Education Field

The problem we face today in each class room is that of the poor performance of healthy and intelligent children who are neither retarded nor mentally or physically handicapped. These children possess normal vision and hearing and yet for some reason they cannot function in a school environment. Their 1nteligent Quotient (IQ) measure 130 or above and apparently capable of high quality work. The condition of these children is perplexing and most probably, a veritable constellation of difficulties may be involved. Some interpret that such children demonstrate signs of emotional disturbance because of their learning disability. Most of these children have become so accustomed to failure that there is a need to convince them of the possibility of succeeding. These children exhibit many other behavioural characteristics which may make them disruptive in the classroom and at home. As regards to children with LD, it is assumed that there is either a general delay in the progress of development as compared to age peers or that there has been an actual break down at some point. The obvious answer is that the course of development is through remedial or therapeutic methods (Kephart, 1967).

Besides the visually and auditory handicapped, the normal deviation, the physically handicapped, the speech defective and the emotionally disturbed, there exist another class of disadvantaged children who are physically unimpaired and intellectually normal but who fail to process the information to speak, read, spell or think adequately. As a result, for the analysis of the behaviour of these children, many disciplines such as psychology, neurology, remedial reading, speech therapy etc are associated. This new field is given various names such as children with minimal cerebral dysfunction, children with perceptual handicaps, and children with LD. The children with LD has become the most acceptable term since it emphasizes the educational character of such disorders. This study focusing on enhancing the Eye Hand Co-ordination among primary school students with dysgraphia.

Hypotheses

1. The multimedia package is highly effective in minimizing dysgraphia among primary school students (PSS) with specific learning disabilities (SLD).
2. There will be significant difference in minimizing dysgraphia among primary school students (PSS) with SLD before and after the intervention of multimedia package on subsamples based on gender and scheme of syllabus

Objectives

1. To identify primary school students (PSS) with dysgraphia.
2. To develop and implement multimedia package for enhancing eye hand co- ordination (EHC) among PSS with dysgraphia.
3. To find out effectiveness of multimedia package among primary school students (PSS) with dysgraphia.

Methodology

The investigator intends to identify the students with dysgraphia, to develop and implement the interventions based on multimedia package, and measure the effectiveness of the interventions among primary school students with dysgraphia. For the present study, the investigator selected survey cum experimental method to collect data from primary school students belonging to different scheme of study (State/ CBSE) where both learning disabled and non-disabled children were studying together. One group pre-test post-test design was selected for the study. Tools used for the study are interventions based on multimedia package, check list, inventory, learning disability test, and intelligence test. The sample comprised 39 students aged 8-10 years with dysgraphia. In this study investigator adopted random sampling procedure to select subjects in view of the specific nature of the study.

Analysis and Interpretation

The performance of PSS with SLD were compared on the basis of their DTLD scores of initial, middle and final stages of implementation of multimedia package regarding 'eye hand co-ordination' (EHC). To see whether the variations on LD in eye motor co-ordination, after the implementation of multimedia package at different stages – initial, middle and final, is significant or not, one-way repeated- measures ANOVA (Greenhouse – Geisser corrected values) was done and by taking the mean scores of DTLD at different intervals of time two (pair) at a time, the post hoc test (pair-wise multiple comparison with Bonferroni correction) was also done.

1. Effectiveness of multimedia package on LD in 'Eye Hand Co-ordination' for total sample

The Investigator tabulated and analyzed the variations in score under the aspect 'Eye Hand Co-ordination' of LD based on DTLD at different stages – initial, middle and final- of implementation of multimedia package among total sample.

Table 1
Summary of one-way repeated - measures ANOVA and Post hoc Test with Bonferroni correction on LD in EHC for the total sample

Category	Stages	Mean	SD	N	F#	Pair	Mean Diff.	LS $
Total	Initial	2.2	0.9	39	111.72 **	D1 & D2	1.6	S*
	Middle	3.8	1.0	39		D1 & D3	2.2	S*
	Final	4.4	0.9	39		D2 & D3	0.5	S*

*D1- Initial Stage, D2 –Middle Stage, D3- Final Stage, **: - Significant at .01 level *: - Significant at .05 level, #One-Way Repeated Measures ANOVA (Greenhouse-Geisser corrected values), df=N-1, $: Pair wise multiple comparison with Bonferroni correction*

The scores regarding 'eye hand co-ordination' at initial, middle and final stages of the implementation of multimedia package are respectively 2.2, 3.8 and 4.4. One- way repeated- measures ANOVA is used to find out whether the variations at different stages are significant or not. The F value (111.72) shows that the variations in scores at different intervals of time are significant at .01 level. Post hoc test was used to compare the mean scores at different time intervals taken two at a time (pair -wise) to find out whether any significant mean differences exists. The mean difference between initial and middle stage is 1.6, the pair -wise comparison with Bonferroni correction shows that the difference is significant at 0.05 level. A similar result can be observed for the difference between initial and final scores and difference between middle and final scores. So it can be interpreted that the increase in performance from the initial stage to middle stage, and from middle stage to final stage and overall increase are significant.

2. Effectiveness of multimedia package on LD in 'Eye Hand Co-ordination' for subsample- Gender

Tabulated and analyzed the variations in score under the aspect 'eye hand co-ordination' of LD based on DTLD at different stages – initial, middle and final- of implementation of multimedia package among subsample –boys/girls.

Table 2
Summary of one-way repeated - measures ANOVA and Post hoc Test with Bonferroni correction on LD in EHC for the subsamples-Boys / Girls

Category	Stages	Mean	SD	N	F#	Pair	Mean Diff.	LS $
Boys	Initial	2.2	0.9	2.2	52.00**	D1 & D2	1.5	S*
	Middle	3.8	1.0	3.8		D1 & D3	2.2	S*
	Final	4.5	0.9	4.5		D2 & D3	0.7	S.*
Girls	Initial	2.2	1.0	2.2	64.67**	D1 & D2	1.7	S*
	Middle	3.9	1.0	3.9		D1 & D3	2.1	S*
	Final	4.2	0.8	4.2		D2 & D3	0.3	NS

*D1- Initial Stage, D2- Middle Stage, D3- Final Stage, **: - Significant at .01 level *: - Significant at .05 level #One-Way Repeated Measures ANOVA (Greenhouse-Geisser corrected values), df=N-1, $: Pair wise multiple comparison with Bonferroni correction*

The means scores of boys regarding EHC at initial, middle and final stages of implementation of multimedia package are respectively 2.2, 3.8 and 4.5 respectively. The F value (52.00) shows that the variation in scores at different interval of time is significant at 0.01 level. Post hoc test was used to compare the mean scores at different time intervals taken two at a time to assess whether any significant mean difference exists. The mean differences in scores between initial - middle, middle-final and initial-final stages are 1.5, 2.2 and 0.7 respectively. The pair wise comparison with Bonferroni correction shows that the difference is significant at 0.05 levels. The mean difference between initial stage to middle, increase in performance from middle to final stage and overall increase are significant.

The mean scores of girls regarding EHC at initial, middle and final stages are 2.2, 3.9 and 4.2 respectively. The F value (64.67) shows that the variation in scores at different intervals of time is significant at .01 level. The Post hoc test was done. The mean differences between initial – middle, initial-final and middle-final scores are 1.7, 2.1 and 0.3 respectively. The pair wise comparison with Bonferroni Correction shows that the difference is significant at .05 level except the middle- final stage scores.

3. Effectiveness of multimedia package on LD in 'Eye Hand Co-ordination' for subsample- Scheme of study

Tabulated and analyzed the variations in score under the aspect 'eye hand co-ordination' of LD based on DTLD at different stages – initial, middle and final- of implementation of multimedia package among subsample-state/ CBSE scheme.

Table 3
Summary of one-way repeated - measures ANOVA and Post hoc Test with Bonferroni correction on LD in EHC for the subsamples- State / CBSE schemes

Category	Stages	Mean	SD	N	F#	Pair	Mean Diff.	LS $
State	Initial	2.1	0.8	2.1	124.17**	D1 & D2	2.0	S*
	Middle	4.1	0.8	4.1		D1 & D3	2.4	S*
	Final	4.4	0.8	4.4		D2 & D3	0.4	NS
CBSE	Initial	2.4	1.0	2.4	34.28**	D1 & D2	1.3	S*
	Middle	3.6	1.0	3.6		D1 & D3	2.0	S*
	Final	4.3	1.0	4.3		D2 & D3	0.7	S*

*D1- Initial Stage, D2- Middle Stage, D3- Final Stage, **: - Significant at .01 level *: - Significant at .05 level, #One-Way Repeated Measures ANOVA (Greenhouse-Geisser corrected values), df=N-1, $: Pair wise multiple comparison with Bonferroni correction*

The mean scores of PSS with SLD belong to Scheme of study- State regarding 'Eye Hand Co-ordination' at initial, middle and final stages of multimedia package are 2.1, 4.1, and 4.4 respectively. The F value 124.17 shows that the variation in scores at different intervals of time is significant at .01 levels. Post hoc test was done. The mean differences between initial middle, initial-final and middle-final stages are 2.0. 2.4 and 0.4. The pair -wise comparison with Bonferroni correction shows that all the differences are significant at .05 level except the middle -final stage.

The mean scores of students from scheme of study -CBSE at initial, middle and final stages of multimedia package are 2.4, 3.6 and 4.3 respectively. The F value (34.28) shows that the variation in scores at different interval of time is significant at .01level. Post hoc test was used to compare the mean scores at different time intervals taken two at a time to assess whether a significant mean difference exist. The mean difference between initial-middle, initial-final and middle -final stage scores are 1.3, 2.0, and 0.7 respectively. The pair-wise comparison with Bonferroni correction shows that the difference is significant at .05 level. This shows that the overall increase in performance is significant.

The graphical representation of the performance of PSS with SLD with respect to SLD in EHC at different stage of implementation of Intervention for total and subsamples is given in the figure 1.

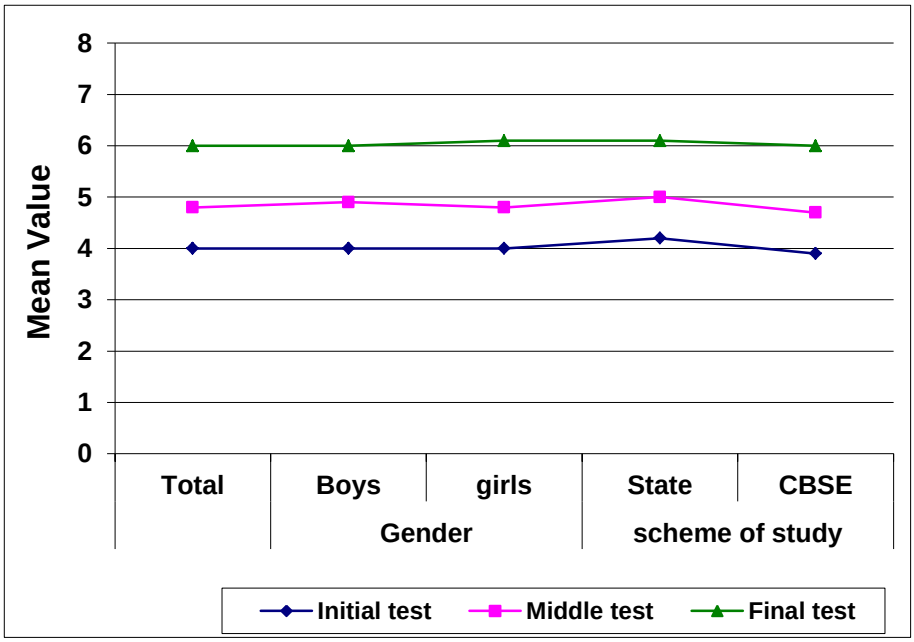

Figure 1
Performance of PSS with SLD with respect to SLD in EHC

Findings

Intervention is effective in significantly enhancing the EHC among PSS with SLD

There is significant difference in the degree of effectiveness among total and subsamples of study group taught through intervention multimedia package.

- There is significant difference in the degree of effectiveness in enhancing EHC among boys / girls of study group taught through intervention multimedia package.
- There is significant difference in the degree of effectiveness in enhancing EHC among different scheme of study group taught through package.
- There is significant difference on the in enhancing EHC performance of students at initial, middle and final phases of implementation of the intervention package.

The Intervention is effective in enhancing EHC and significantly minimizing dysgraphia characteristics' among the PSS with dysgraphia. The multisensory approach used in the intervention created intrinsic motivation and

this motivation level will stay high in the student, as he / she has the learning preferences. The intervention helped the students to learn at his/her own pace. It helped them to work independently and in a group. The intervention is equally effective in benefiting boys and girls, and State/ CBSE students in enhancing EHC and performance in various aspects of learning among students.

Implications of the Study

The findings of the study showed that intervention is effective in minimizing EHC difficulty in students with dysgraphia. This finding has much importance in the individual learning of students with special educational needs, and it will help to reduce the number of underachievers. Findings of the study imply that the multisensory approach is effective for learners irrespective of their individual abilities. The intervention offers students enough freedom to choose varied activities and materials and help in planning learning activities according to the needs and interest of students.

Conclusion

To develop interest in learning, for developing study habits and enhancing self confidence in students, the usage of classroom intervention is essential. A single model of education programme for children with learning difficulties is not suitable for all children. Any model that provides right intervention through right strategies with right material and technology in the right time and in the right place, makes the education of the children with learning difficulties as gainful as that of children had high scores. It will fulfill the 'zero rejection 'policy so that no child is left out of the education system.

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VOICE CHATTING: A FASCINATING TECHNIQUE FOR TEACHING BIOLOGY

Mary Sindhu

Abstract

Voice chatting technique can convert the traditional classroom situations to electronic and smart classrooms. Present study examines the significance of voice chatting technique in enhancing secondary school students' achievement in science. A quasi-experimental method with non-equivalent group pretest-posttest design was adopted for the study. The experiment was conducted among higher secondary school students. The results revealed that voice chatting is more effective than the activity oriented method for teaching at higher secondary level.

Introduction

The world has been undergoing a transformation with the arrival of internet and teleconferencing since 1990s. This information technology has been able to transform the traditional classroom situation to electronic and virtual classrooms. Educators talk about the enormous potential of electronic based education and training. Advances in telecommunication technologies have changed student demographics and the need for ongoing professional development. This resulted in the proliferation of e-learning opportunities which is now introduced into the educational field. E-learning is one of the forms of learning which uses a network for delivery, interaction or facilitation. Through e-learning an online interaction is possible. The term 'e- learning' in general refers to learning facilitated and supported through the use of information and communication technology. It covers a spectrum of activities from supported learning to blended learning and the learning that is entirely online. As an integral part of e-learning, environments must be carefully designed and sequenced to promote key interactions that occur spontaneously in traditional classroom. Certain methods of E-learning such as email, voice chat, World Wide Web (www), voice mail, video mail and virtual classroom are used for online communication with the students.

Recently, in every school, computer has been introduced with well equipped computer lab. The methods like email, voice chat and World Wide Web can be used for online teaching. By using online, the students get much detail about the topic from the expert teachers other than their class teachers. One of the most interesting and powerful dynamics in online communication is "many to many communication" quality that facilitates group learning. Any member can communicate with all other members in the given group network or conference. Each member in turn can reply not only to the sender but to everyone else in the

network. Thus internet connects the pupil from various parts of the world and provides rich resource of information. Voice chatting helps the students to interact with the teacher and even clear their doubts. The researcher assumes that voice chatting technique could be more useful for the solution of many problems faced by our ordinary classroom, since it involves student-teacher interaction, on the spot doubt clearance and interacting with subject experts. In this context, the investigator considered as necessary to develop, voice chatting technique which can convert the traditional classroom situations to electronic and smart classrooms.

Steps involved in the development of voice chatting technique

a. Creation of e-mail ID for Voice chatting technique: An e-mail ID for voice chatting technique was created using the same procedure as in e-mail learning. The created e-mail IDs of the students were added in the investigator's Yahoo messenger list. Vice versa, the investigator's Yahoo e-mail was added in all students Yahoo messenger list. Online interaction topic, date and time are announced to the students in advance, so that at the specified time the students can be online.

b. Preparation of lesson transcript for voice chatting technique: In voice chatting technique, the teacher delivers the lesson through online, and the students listen to it using their individual headset which has ear phone and microphone. Provision is also there for the students to clear their doubts. The particular point to be noted here is that teacher delivers the lesson from a distant place through online i.e. sitting in her home and not in the real classroom.

Hypothesis

Voice chatting technique is more effective for teaching biology of the students at higher secondary level.

Objectives

1. To find out the effect of voice chatting technique on the achievement in biology of the students at higher secondary level
2. To find out the effect of activity oriented method on the achievement in biology of the students at the higher secondary level
3. To compare the effect of voice chatting technique over the activity oriented method on the achievement in biology of the students at higher secondary level

Methodology in Brief

For the present study pre test post test non-equivalent group design of experimental method was employed. The sample for the study consisted of two science batches of two schools selected from two districts of Kerala. One batch

was taken as the control group and the other as the experimental group in which the experimenter manipulated the independent variable. For finding out the effect of voice chatting technique an achievement test has been prepared, standardized and administered by the investigator for both the groups as pre-test and post-test. Then the investigator taught the experimental group using voice chatting technique and the control group by using activity oriented method. After teaching both the control and experimental groups the investigator administered the achievement test as the post-test. The answer paper was scored and the scores were subjected to statistical analysis.

Analysis and Interpretation

Comparison of voice chatting technique over the activity oriented method on the achievement in biology of the pupils at the higher secondary level

To find out the effect of Voice chatting technique over the activity oriented method in the teaching of biology, the total sum of squares, mean square variance and f ratio for the pre-test and post-test scores were computed. The data are presented in the table 1.

Table 1

Summary of analysis of variance of the pre-test and post-test scores of pupils in the experimental and control groups with respect to voice chatting technique

Source of variation	df	SS_x	SS_y	$Ms_x(V_X)$	$Ms_y(v_y)$
Among Mean	1	36	42.3	36.00	42.25
Within Means	62	604.44	302.2	9.75	4.87
Total	63	640.44	344.4		
F_x	3.69				
F_y	8.67				

The calculated F_x value 3.69 is less than the table value (7.08). Hence there is no significant difference among the two groups in the pre-test at .01 level. The calculated F_y value 8.67 is greater than the tabled value (7.08) at .01 level. So it can be tentatively concluded that there is significant difference between the post-test means of two groups.

The analysis of co-variance of scores of the pre-test and post-test of the experimental and control groups when taught through Voice chatting technique were computed. The details are presented in the table 2.

Table 2
Summary of analysis of co-variance of the pre-test and the post-test scores of pupils in the experimental and control groups with respect to voice chatting technique

Source of variation	df	SS_x	SS_y	SS_{xy}	SS_{yx}	MS_{yx}	SDyx
Among Means	1	36.00	42.3	39.00	69.95	69.95	1.93
Within Means	61	604.44	302.2	212.44	227.52	3.73	
Total	62	640.44	344.4	173.44	297.47		
F_{yx}	18.75						

Since the obtained F_{yx} value is greater than the table value, the difference between the scores of the two groups is significant at.01 level. The obtained F_{yx} value is 18.75 and the table value at .01 level is 7.08. The significant ratio for the adjusted post-test scores shows that the two mean scores have significant difference after they have been adjusted for the initial difference in the pre-test.

Comparison of adjusted 'y' means

The adjusted means for the post-test scores of students in the experimental and control groups were computed. The data are given in the table 3.

Table 3
Adjusted means of scores with respect to voice chatting technique in the experimental and control groups

Groups	N	M_x	M_y	M_{xy}
Experimental	32	6.91	22.5	22.73
Control	32	8.41	20.8	20.58
Total	64	7.66	21.66	
SEm	0.48			
t	4.46			

The adjusted mean of experimental group is 22.73, which is greater than the adjusted mean of the control group 20.58. It means that the experimental group is superior to control group in their achievement when taught through voice chatting technique. The adjusted means for the post-test scores were tested for significance. The 't' value obtained was 4.46 which is greater than the table value 2.26 at .01 level. This indicates that there is significant difference between the experimental and control group when taught through voice chatting technique.

From this it can be inferred that the students taught through chatting technique performed better than the students taught through the activity oriented method.

Educational Implications

In voice chatting the resource person can sit at any place and give the lessons to many students who sit in different parts of the world at the same time. From the findings of the study it is seen that voice chatting is more effective than the activity oriented method for teaching biology at higher secondary level. Based on the findings, the following suggestions are made in order to improve the implementation of voice chatting technique.

- In-service training should be given to the teachers so that the teachers would be aware of the use of internet.
- Teachers should be able to prepare lesson transcripts in website and to encourage the students to move on their own pace.
- Students are given the opportunity to ask their doubts

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HEALTH AND HYGIENE AWARENESS OF ADOLESCENT GIRLS: A STUDY ON ARUNA NAGAR COMMUNITY IN DELHI

Praseetha Unnikrishnan

Abstract

Health and Hygiene is an important aspect for the overall well-being of adolescents. Both adolescent boys and girls are more vulnerable to health and hygiene implications due to their nature of experimenting and exposure to limited information regarding issues affecting their health and development. Aruna Nagar is a resettlement colony in "Majnu Ka Tilla" Community. People from various communities are staying together. Cleanliness is found missing in the community due to overcrowding and due to which the community is always prone to various diseases. Hence the investigator decided to conduct a study on health and hygiene awareness of adolescent girls of Aruna Nagar community in Delhi. Survey method was used for the present study. The sample for the study constituted 50 adolescent girls of Aruna Nagar community of Delhi. Snow ball sampling technique was used. The data was analyzed quantitatively using SPSS.

Introduction

Adolescence is an age of transition where the individual changes physically and psychologically from a child to an adult. According to Columbia Encyclopaedia (2004), the exact period of adolescence varies from person to person and falls approximately between the ages 12 and 20 and encompasses both physiological and psychological changes. The process of physical changes is known as puberty and it generally takes place in girls between the ages of 8 and 14 and boys between the ages of 9 and 16. Adolescence in India can be traced to the ancient text of Dharmashastra which had recognized the crucial nature of adolescence and prescribed specific codes of conduct for the phase. These codes are deeply rooted in the Indian psyche and continue to influence cultural practices towards adolescents in a powerful manner (Verma & Saraswathi, 2002). The onset of puberty is acknowledged by the family and new code of conduct is prescribed both for boys and girls. Adolescence in the Indian context with respect to gender has very different perspectives. Their conduct is influenced by the cultural differences and is based on traditional stereotypic adult roles. Growing as a female in India carries with it the connotation of inferior status, and less privileges as compared to a male child. It cuts across all social classes of the society and through entire lifespan. For a girl, the onset of puberty implies more restrictions on her. Boys begin to exercise greater freedom to move about, are

expected to seek educational and vocational pursuits as a priority and to take adult roles.

Besides all the traditional distinctions, there are many variations in the current metaphors of adolescents in India. It arises from factors such as urban, rural and tribal residence, ethnicity and socio economic levels of the family. Lifestyle of urban adolescents from upper socio-economic status is quite different from that of middle-class and lower-class adolescents. Former have access to private, good quality education and are influenced by western ways of life style through travel and exposure, their preferences for music, clothes and interaction with opposite sex are very close to the western counter parts. Apparently there does not appear any gender discrimination in the families of these adolescents but covertly they do exist. Pursuing educational endeavours is encouraged both in upper and middle urban class. Urban adolescents from lower class have to struggle for survival and grow in impoverished disadvantaged environment making them vulnerable to several risks. Malnutrition, risk of poor health, victims of antisocial activities, brewing and sale of illicit liquor, sex exploitation, prostitution and drug peddling were reported to be the threats for adolescents from slums according to multi indicator survey conducted by Khosla, 1997.

The picture of rural adolescents in India is quite different; the disparity between boys and girls is even greater amongst them. Lack of formal education makes boys and girls participate in adult activities at home and outside at an early age. The traditionalism and familalism are deep tooted in various facets of family life, both in rural and urban settings (Bhende, 1994).

Demographic Profile of Adolescents in India

The World health Organization defines ‘young people’ as those between the ages of 10 and 24. This age group is composed of two overlapping subgroups, namely adolescents (aged 10-19)’ and youth (aged 15-24)’. Lack of uniformity in the age parameter for defining the group of adolescents is a major constraint. As per the census of India, 2001, there are 225 million adolescents comprising nearly one-fifth of the total population. The gender wise breakdown of the adolescent population does not show any significant disparity between the sexes, with female adolescents accounting for 46.9 percent and male adolescents 53.1 percent of the total population as per census, 2001.

Further as per the NSSO report (2001), 25 percent of the 15-19 years age group in rural areas and 10 percent in urban areas were illiterate. The male-female differences grow with each level of education. Rural girls were the most disadvantaged. Though enrolment figures in schools have improved, gender disparities persist wherein the challenge is to keep students in schools. Hence it is

pertinent to mention that the situations of adolescent girls need more introspection.

Health and Hygiene of Adolescents

Health and hygiene of adolescents is an important parameter as far as overall wellbeing of adolescents is concerned. Both adolescent boys and girls are more vulnerable to health and hygiene implications due to their nature of experimenting and exposure to limited information regarding issues affecting their health and development. Problems at this age are related to their physical and emotional development, search for identity and risk taking behaviour.

The WHO defined health in its broader sense in 1946 as a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. Although this definition has been subject to controversy, in particular as lacking operational value and because of the problem created by use of the word 'complete,' it remains the most enduring.

During adolescence there are various physical changes in the body which give rise to various health and hygiene issues. Hygiene is a set of practices performed for the preservation of health. It also refers to the set of practices perceived by a community to be associated with the preservation of health and healthy living. In modern medical science there are a set of standards of hygiene recommended for different situations, what is considered hygienic or not can vary between different cultures, genders and groups. Studies conducted by Toteja et al. (2006), Chaturvedi (1995), Ornelas et al. (2007) and Khanna et al. (2005) highlight the importance of health and hygiene amongst adolescent girls.

Objectives of the Study

1. To study the demographic profile of the adolescent girls of Aruna Nagar community, Delhi
2. To find out the health and hygiene awareness level of adolescent girls of Aruna Nagar community of Delhi
3. To suggest a social work intervention strategy to improve upon the health and hygiene of adolescent girls in the community

Methodology

Survey method was used for the present study. The sample for the study constituted 50 adolescent girls of Aruna Nagar community of Delhi. Since it was difficult for the researcher to find out the actual number of adolescent girls in the community, the snow ball sampling technique was used. Data were collected from both type of sources i.e. primary source (field data) and secondary source (documentary sources). The researcher made use of quantitative method of

research while collecting data from primary source. An interview schedule and observation were employed as the instruments for data collection. The data was analyzed quantitatively using SPSS.

Results and Discussion

1. Demographic Profile of Respondents

Aruna Nagar is a resettlement colony in "Majnu Ka Tilla" Community. Based on the history of the community it is said that at the time of partition, people came to India and settled in various states like Punjab, Rajasthan, U.P., Bihar, etc. From these places people migrated to Delhi and started living around Delhi University. It was during the tenure of the then Prime Minister Pt. Jawaharlal Nehru that the people acquired the land of Aruna Nagar as a settlement. People from various communities are staying together here. Presently various agencies and NGOs are working in the community for the welfare of children, women and adolescents. The community appeared to be congested on retrospection. During leisure time people sit in groups under the shades of trees and play cards, children play cricket in the by-lanes and in a bustling market on the roads. Cleanliness was found missing in the community due to overcrowding and due to this the community was always prone to various diseases.

As far as religion is concerned, the majority of the respondents (78%) were Hindus while only a miniscule percentage were Muslims (14%), Christian (6%) and others (2%). The others included Sikhs and Jains. With respect to age, most of the respondents (40%) belonged to the 13-15 age groups. This was followed by 38 percent in the age group of 16 years and above and a lesser percentage (22%) was in the age group of 10-12 years. Most of the adolescent girls (38%) were studying between 10th -12th Standard. 32 percent of the girls were studying between 7th -8th Standard. Only 2 percent of the respondents studied in college while a good number of adolescent girls (28%) had dropped their studies. The reason for dropping out of studies is mainly due to financial constraints, household responsibilities, etc. Further, majority of the adolescent girls had a family income between Rs. 9000-12000. As far as family income was concerned a good number of adolescent girls (36%) had a family income between 6000-9000. Only a miniscule percentage of adolescent girls (8%) had a family income greater than Rs. 12000. This shows that majority of the adolescent girls of the Aruna Nagar community belonged to the lower socio-economic strata of the society.

2. Health and Hygiene awareness of Adolescent Girls

As far as health and hygiene awareness of adolescent girls is concerned, the study showed that majority of the adolescent girls (76%) has high levels of health and hygiene awareness. A comparatively less percentage i.e. 22 percent

has 'medium' level of awareness while a miniscule 2 percent of the adolescent girls have 'low' level of awareness. This infact shows that the efforts of the agencies/NGOs working in the Aruna Nagar Community have played a significant role in improving upon the awareness level of adolescent girls. Hence it can be said that though these adolescent girls belong to the lower socio-economic strata of the society, they had good awareness about health and hygiene and this could be attributed to school education, parental guidance and better awareness in community as many Welfare agencies/NGOs are operational in this area.

3. Social work intervention model for improving the health and hygiene of adolescents

In India, with respect to adolescence, gender plays a crucial role. As adolescent children go through varied experiences during the growing years as the cultural differences are large and their conduct is based on the traditional adult roles stereotypes. As stated earlier growing as a female in India carries with it the connotation of inferior status, and lesser privileges – as compared to a male child. For a girl, the onset of puberty implies more restrictions on her movement, fewer interactions with boys and men, and more active participation in household chores.

During this crucial phase of life, health and hygiene awareness becomes very important especially for adolescent girls who are more vulnerable to the social customs and taboos. This study has revealed that majority of the adolescent girls of the Aruna Nagar community have a high level of awareness of health and hygiene; this can be further improved with an effective social work intervention model which is presented in table 1.

Table 1
Social work intervention model for improving health and hygiene awareness among adolescent girls

Social Work Intervention Model	
Level	**Mode**
Individual level	• Counselling sessions • Imparting sex education • Imparting health education • Inculcating good eating habits • Regular health check-ups • Meditation and relaxation techniques
Family level	• Counselling sessions • Family therapy • Sensitizing them towards adolescents needs

School level	• Sex education • Training teachers in understanding adolescents • Health and hygiene sessions with adolescents
Peer Group	• Initiating peer group activities/knowledge on health and hygiene
Community level	• Networking of parents of adolescent girls • Awareness programmes on health and hygiene of adolescent girls • Initiating gender sensitization programmes • School awareness programmes • Initiating workshops for health and hygiene of adolescent girls • Health check-up camps • Proper implementation of health and hygiene related schemes/policies for the adolescents

The social work intervention model given as per table 1 gives an idea about the type of intervention the social worker needs to make for adolescent girls to improve their health and hygiene awareness. The tasks involved for intervention have also been identified separately at the individual, family, peer group, school and community level wherein the social worker needs to work in tandem with the various stakeholders for the improvement in health and hygiene of adolescent girls. Conclusively, it can be emphasized that though the study has shown that there is good awareness about health and hygiene amongst adolescent girls of Aruna Nagar community in Delhi, there is still a long way to go and this can only be done if all the professionals and stakeholders including social workers work in tandem to achieve the broader objectives like the overall development of adolescents.

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METACOGNITIVE AWARENESS OF TERTIARY LEVEL TEACHERS: AN INVESTIGATION

Priya Dominic

Abstract

The paper presents a precise picture of metacognition and the role metacognitive awareness can play in harnessing the abilities and skills of teachers. Moreover, this paper reports an empirical study on the metacognitive awareness of tertiary level teachers.

Introduction

The concept of metacognition was put forward by John Flavell in 1976. Metacognition refers to the ability to reflect upon, understand, and control one's learning (Schraw & Dennison, 1994). Researchers have stated that metacognition has two major components (Brown, 1987; Flavell, 1987; Jacobs & Paris, 1987) such as knowledge of cognition and regulation of cognition. Metacognition is defined most simply as 'thinking about thinking.' Metacognition consists of two components: knowledge and regulation. Metacognitive knowledge includes knowledge about oneself as a learner and the factors that might impact performance, knowledge about strategies and knowledge about when and why to use strategies. Metacognitive regulation is the monitoring of one's cognition and includes planning, activities, awareness of comprehension and task performance, and evaluation of the efficacy of monitoring processes and strategies.

Although related, cognition and metacognition differ: Cognitive skills are those needed to perform a task whereas metacognitive skills are necessary to understand how it was performed. Promoting metacognition begins with building an awareness among learners that metacognition exists, differs from cognition, and increases academic success. Metacognition refers to our knowledge and awareness of our own cognitive processes and our ability to monitor and regulate them. Research studies have revealed that if students are more metacognitively aware; they become more strategic and perform better than students who are less aware (Garner & Alexander, 1989; Pressley & Ghatala, 1990). Metacognition is the ability that helps one to control own thoughts.

Need and significance of the study

The shortest definition of metacognition is awareness of one's own thinking processes and being able to control these processes. Metacognitive knowledge, also referred to as metacognitive awareness, helps individuals properly manage their cognitive skills and capacities; it helps one determine one's

own strengths and weaknesses and thereby tactfully overcome one's weaknesses with the strengths. Metacognitive awareness helps individuals become more and more successful in their endeavours in various walks of life. Metacognitive skills include taking conscious control of learning, planning and selecting strategies, monitoring the progress of learning, correcting the errors, analysing the effectiveness of learning strategies and changing learning behaviours and strategies when necessary (Ridley, Schutz, Glanz &Weinstein, 1992). Kuhn (2000) characterizes development of metacognition as the very gradual (and not always unidirectional) movement to acquire better cognitive strategies to replace inefficient ones.

The study intended to find out the metacognitive awareness of teachers at the tertiary level. In the midst of the new generation students, teachers feel challenged and are forced to search for new ways that would keep students active in the classrooms. The findings of the study would reveal the metacognitive awareness of teachers and the results would point towards the goals to be set by teachers in equipping themselves to improve upon and / or to transact their skills and competencies for the betterment of their students.

Objectives of the study

1. To find out the awareness of metacognition among teachers at tertiary level
2. To compare the metacognitive awareness of male and female teachers at tertiary level

Methodology in Brief

The present investigation is meant to assess the metacognitive awareness of college teachers. Normative survey method was adopted for the study. The sample was selected using non-probability sampling technique of convenient sampling. Forty six teachers from various colleges and universities in Kerala attending the orientation/ refresher/ summer special school programmes at the UGC – Academic Staff College, Thiruvananthapuram were selected to be the sample for the study. To collect the data required for the study Metacognitive Awareness Inventory for Teachers (MAIT) developed by Balcikanli (2011) was used. The analysis of data was carried out employing appropriate statistical techniques such as percentage mean, standard deviation and critical ratio.

Results and Discussion

I. Metacognitive awareness of teachers at tertiary level

To identify the metacognitive awareness of tertiary level teachers the total scores of metacognitive awareness inventory was calculated and the mean and standard deviation were found out and the same is narrated in table 1.

Table 1
Statistical indices related to the metacognitive awareness of tertiary level teachers

Variable	Statistical Indices		
	Max / Min Score	Mean	Standard Deviation
Metacognitive Awareness	120 / 24	94.41	6.21

The maximum and the minimum scores of the inventory employed was 120 and 24 respectively. The mean value of the total score obtained for the inventory was found to be 94.41 and the value of standard deviation was found to be 6.21. In the light of these scores it can be inferred that university/ college teachers have fairly good metacognitive awareness.

2. Comparison of metacognitive awareness of tertiary level teachers with regard to their gender

To identify the metacognitive awareness of tertiary level teachers with regard to their gender, the total scores of metacognitive awareness inventory of both male and female teachers was determined separately and the mean, standard deviation and critical ration were found out and the same is reported in table 2.

Table 2
Data and result of test of significance of difference between the mean scores on metacognitive awareness of male and female teachers at tertiary level

Gender	Statistical Indices			Critical Ratio	Level of Significance
	Sample Size	Mean	Standard Deviation		
Male	11	94.00	3.73	0.45	P > .05
Female	23	94.61	4.11		

From table 2 it is clear that the male and female sample in the study were 11 and 23. The mean scores of male and female teachers were 94.00 and 94.61 and the differences in the mean scores were negligibly small. The standard deviations of the scores were 3.73 and 4.11 respectively, from these scores it can be inferred that the values of standard deviations of female group in the sample varied from their mean values little bit more than their male counter parts but the variation were small. The critical ratio obtained was 0.45, the table value for the same at .01 level of significance and .05 level of significance are 2.68 and 2.01

respectively. The obtained value of critical ratio (CR = 0.45, p>.05) is not significant at .05 level of significance. It means that there exists no significant difference between male and female teachers regarding their metacognitive awareness.

Conclusion based on findings

The major conclusions arrived on the basis of the statistical analysis of data are comprehended as given below:

1. Teachers at tertiary level have fairly good metacognitive awareness
2. Male and female teachers do not differ in metacognitive awareness

Suggestions for improving metacognitive awareness of teachers

1. Encourage formation of internal quality assurance mechanism in institutions of higher learning.
2. Encourage technology mediated periodic critical examination of one's teaching learning process.
3. Curriculum for pre-service and in-service training programmes must be developed with embedded strategies that would help in inculcating metacognitive awareness among trainees.

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TIME UTILISATION OF SECONDARY SCHOOL STUDENTS IN KERALA

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Abstract

Time management is necessary for a student's academic success. It ensures that students are well prepared, organized and focused to manage their daily lives and complete academic assignments on time. It is a skill that students have to learn and practice. Through this study the investigator would like to motivate the students in utilizing their time properly so that they may be able to plan their activities systematically. The present study intends to identify or find out the amount of time spend on various activities by different groups of secondary school students in Kerala. Through this study a general awareness can be created about the need to utilise time fruitfully. The students and grownups can be taught the value of prioritising their activities on the basis of effective management of time, which is a prime requirement for their academic achievement as well.

Introduction

Time management is a very important skill that is needed for academic success. Students in general have very busy and stressful lives because they are attending classes, completing assignments and studying for examinations. Besides, they have their own daily routines and life styles which need a balance between academic and extracurricular activities. However, finding time to do everything in a specified time can be challenging and overwhelming. This is a skill that students need to learn. They must take the necessary approaches and apply these strategies in order to be effective and more productive. These skills give students the ability to plan ahead and prioritize the upcoming assignments and events. This is an important factor in keeping students organized and avoiding procrastination, which ultimately leads to academic success.

Time management for students is crucial because it determines how responsible and successful a student is in achieving good grades, selecting courses and successfully completing it. There are many students who do not manage their time well, because they get so distracted and focused on things that are less important such as having fun and hanging out with friends and spending time for trivial issues. The investigator has the view that effective utilization of time will result in proper discipline of the mind and body of children. This will further enhance their ability in the academic achievement. A careful study and analysis of time utilization of secondary school students will surely give an idea

to the investigator regarding their time management on various activities. Through this study the investigator would like to motivate the students to utilize their time properly so that they may be able to plan their activities systematically. This will surely help them to be good persons who are dependable, hardworking and disciplined in their life with a good academic achievement.

School days are considered to be one of the busiest moments in our lives. Assignments, projects, and examinations are the things that make students feel exhausted. Besides, there are other commitments and social events that they would like to attend. All of these competing demands influence time management. If the student does not have any idea about budgeting time and keeping a schedule he/she can easily spin out of control, get stressed out and fall into bad practices such as cramming or doing 'all nighters.' Hence time management is important for students. The present study intends to identify or find out the amount of time spent on various activities by different groups of secondary school students in Kerala.

Hypotheses of the Study

1. There is a significant difference in the utilization of time on different activities between rural and urban secondary school students.
2. There is a significant difference in the utilization of time on different activities between male and female secondary school students.

Objectives of the Study

1. To analyse the utilization of time for different activities by secondary school students in the total sample.
2. To examine whether there is any significant difference in the utilization of time for different activities between rural and urban secondary school students.
3. To examine whether there is any significant difference in the utilization of time for different activities between male and female secondary school students.

Methodology in Brief

The problem under study is to identify the amount of time spent on different activities by the secondary school students. The investigator selected 10 important activities, where the students spent their time in a day. In this study, survey method was used for the collection of data. A total sample of 500 secondary school students were chosen from 12 schools in Ernakulam, Kasargod and Alapuzha districts. A questionnaire was administered to collect information regarding the amount of time on different important daily activities of students. Statistical techniques like mean, standard deviation, and critical ratio were used to analyse the data.

Results and Discussion

1. Utilization of time for different activities among secondary school students in the total sample

To analyse the data based on the objective 1, the investigator considered the responses of the whole sample of 500 students for the questionnaire which contains 10 items related to the amount of time spent on different activities. The mean and standard deviation of scores regarding time spent on 10 activities by the secondary school students in the total sample is given in table 1.

Table 1
Mean and standard deviation of time spent on different activities among secondary school students in the total sample

Activity	Arithmetic Mean	Standard Deviation
Studies at home	2.65 hrs/day	1.11
Tuition	1.12 hrs/day	1.09
Reading newspaper	0.26 hrs/day	0.23
General reading other than news paper	0.66 hrs/day	0.59
Watching news on television	0.37 hrs/day	0.29
Watching entertainment programmes/sports	1.46 hrs/day	1.11
Using mobile/land phones	0.30 hrs/day	0.41
Using computer for studies	0.45 hrs/day	0.65
Playing	0.97 hrs/day	0.93
Sleeping	7.42 hrs/day	1.02

From the table 1 it is clear that the mean time spent on studies at home by the total sample is 2.65 hours per day. For tuition it is 1.12; for watching entertainment programmes/sports it is 1.46. Students utilise time for playing is 0.97 and for sleeping the mean time is 7.42 hrs per day.

2. Comparison of the utilization of time for different activities among rural and urban secondary school students

To analyse the data based on the objective 2, the investigator considered the responses of the rural and urban students separately. The critical ratios were found out to test the significance of the differences between the mean times spent by the two groups for different activities. The details are presented in the table 2.

Table 2
Comparison of time utilization on different activities by secondary school students on the basis of locality

Activity	Time spent on different activities in hours				Critical ratio
	Rural (N=250)		Urban (N=250)		
	Mean	S D	Mean	S D	
Studies at home	2.58	1.06	2.73	1.15	1.58
Tuition	0.99	1.08	1.26	1.09	2.82**
Reading newspaper	0.24	0.22	0.27	0.24	1.57
General reading other than news paper	0.62	0.60	0.69	0.57	1.30
Watching news on television	0.33	0.28	0.42	0.29	3.28**
Watching entertainment programmes/sports	1.46	0.99	1.46	1.21	0.03
Using mobile/land phones	0.24	0.26	0.36	0.51	3.35**
Using computer for studies	0.39	0.68	0.50	0.63	1.78
Playing	1.02	0.86	0.91	0.99	1.34
Sleeping	7.57	0.98	7.27	1.04	3.37**

**$p < .01$

From table 2 it is seen that there is a significant difference in time spent on activities like tuition (t value = 2.82; $p < .01$), watching news on television (t value = 3.28; $p < .01$), using mobile/land phones (t value = 3.35; $p < .01$), and sleeping (t value = 3.37; $p < .01$), by secondary school students in the rural and urban areas.

3. Comparison of the utilization of time for different activities among male and female secondary school students

To analyse the data based on the objective 3, the investigator considered the responses of the male and female students separately. The critical ratios were found out to test the significance of the differences between the mean times spent by the two groups for different activities. The details are presented in the table 3.

Table 3
Comparison of time utilization on different activities by secondary school students on the basis of gender

Activity	Time spent on different activities in hours				Critical ratio
	Male (N=250)		Female (N=250)		
	Mean	S D	Mean	S D	
Studies at home	2.36	0.99	2.94	1.14	6.08**
Tuition	1.16	1.08	1.09	1.10	0.74
Reading news paper	0.23	0.21	0.28	0.24	2.46*
General reading other than news paper	0.61	0.56	0.70	0.61	1.72
Watching news in television	0.37	0.29	0.37	0.29	0.04
Watching entertainment programmes/sports	1.62	1.18	1.30	1.00	3.17**
Using mobile/land phones	0.37	0.50	0.23	0.28	3.75**
Using computer for studies	0.50	0.77	0.39	0.50	1.78
Playing	1.40	0.99	0.53	0.62	11.67**
Sleeping	7.51	1.00	7.32	1.03	2.11*

*$p < .05$; **$p < .01$

From table 3 it is clear that there is significant difference between male and female secondary school students with regard to their time utilization on activities like studies at home (t value = 6.08; $p < .01$), reading news paper (t value = 2.46; $p < .01$), watching entertainment programmes/sports (t value = 3.17; $p < .01$), using mobile/land phones (t value = 3.75; $p < .01$), playing (t value = 11.67; $p < .01$), and sleeping (t value = 2.11; $p < .05$).

Conclusion

1. The utilisation of time on various activities by the secondary school students in the total sample is average. Most of the students in the total sample spent their time for studies at home. Generally students prefer to read academic materials than non- academic materials. Students are not interested to increase their general awareness about the society. Majority of students in the total sample are reluctant to see news in television whereas, they spent so much time to watch entertainment programmes on television.
2. Students in both rural and urban area spent approximately equal amount of time on activities like reading newspaper, general reading other than newspaper, watching news and entertainment programmes/sports on television. Major difference exists in the case of tuition. Most of the students in rural area do not go for it. In rural area, students spent more

time on playing and sleeping compared to urban area because the life of students in rural area is not so busy when compared to urban area. Students in urban area get more facilities and opportunities to spent time on studies at home and activities like using mobile/land phones and using computer for studies as compared to rural area.

3. As compared to male, female students give more importance to curricular activities. They spent more time on studies at home, reading newspaper and general reading other than newspaper. But both types students spent approximately equal amount of time on watching news on television. There are some activities in which the mean scores of time spent by male students were greater than female students. Activities include tuition, watching entertainment programmes/sports, using mobile/ land phones, using computer for studies, playing and sleeping.

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EFFECTIVENESS OF THINK-PAIR-SHARE TECHNIQUE ON THE ACHIEVEMENT IN MATHEMATICS OF STUDENTS AT SECONDARY LEVEL

Josen George and Sony Thomas

Abstract

Traditionally learning of mathematics was largely based on rote memorization. However, the development of constructivist theories led to new conceptions of learning process and consequently various methods of learning mathematics came into existence. Present study examines the significance of think-pair-share technique, which works on constructivist paradigm, in enhancing secondary school students' achievement in mathematics. A quasi-experimental method with non-equivalent groups pretest-posttest design was adopted for the study. The experiment was conducted among eighth standard students. The results reveal the superiority of the experimental treatment in enhancing achievement in mathematics.

Introduction

Like any other subject, mathematics also is a living and flourishing branch of our culture. It is both a discipline in its own right and a service subject used in all facets of human life. Mathematics has been a faithful companion right from human existence on the earth. The knowledge of this subject was born out of felt needs of human beings. It pervades in all our day to day life. It provides opportunity for the intellectual gymnastic of the man's inherent powers. Mathematics as a science emerged from the early experiences of ancient human beings. Now the scope of mathematics is so broad that one cannot live in the modern world without the knowledge of this subject. Famous sociologist Auguste Comte asserted: "Education that is based on any other method is faulty, inexact, and unreliable. It is only through mathematics that we can understand sciences." For Comte, mathematics is the basis of all sciences (cited in Rao, 2012).

The science of mathematics education is still in its infancy. In any curriculum, content and presentation of content are the two most important and inseparable components. Traditionally mathematics learning was largely based on rote memorization. For majority of the learners mathematics is a difficult subject and it is common among them to develop a 'mathematics anxiety.' However, the development of constructivist theories led to new conceptions of learning process and consequently various methods for teaching mathematics and other subjects came into existence.

Think-Pair-Share Technique

Think-Pair-Share technique was first developed by Professor Frank Lyman at the University of Maryland in 1981 and adopted by many writers in the field of co-operative learning. It introduces into the peer interaction element of co-operative learning the idea of 'wait or think' time, which has been demonstrated to be a powerful factor in improving student responses to questions. It is a simple strategy, effective from early childhood through all subsequent phases of education. It is a very versatile structure, which has been adapted and used, in an endless number of ways. This is one of the foundation stones for the development of the 'co-operative classroom.' Sahlberg and Berry (2002) concluded that working in pairs is a particularly effective form of learning mathematics and that small groups are beneficial for developing mathematical problem-solving skills.

Significance of the Study

Today a large number of students fail to perform well in mathematics. Mathematics is considered as one of the difficult subjects in the school curriculum. Majority of students are afraid of mathematics and develop a phobia for mathematics. Our broad result of past few years tells us the true story. Failures in mathematics are increasing day by day. In spite of its great importance students avoid mathematics. At present, mathematics is taught like a mechanical subject with no creativity and imagination. Students are trained to develop mathematical skill of calculation. They are not encouraged to develop mathematical thinking. Another difficulty in mathematics education is the lack of interest and hence inattention from the part of students. Even though there are some stumbling blocks in the process of teaching and learning for both teachers and students, "how to teach" is a real problem for the teacher. The think-pair-share strategy is designed to differentiate instruction by providing students time and structure for thinking on a given topic, enabling them to formulate individual ideas and share these ideas with a peer. This learning strategy promotes classroom participation by encouraging a high degree of pupil response, rather than using a basic recitation method in which a teacher poses a question and one student offers a response. Additionally, this strategy provides an opportunity for all students to share their thinking with at least one other student which, in turn, increases their sense of involvement in classroom learning. Think-pair-share technique can also be used as in information assessment tool; as students discuss their ideas, the teacher can circulate and listen to the conversations taking place and respond accordingly.

In this strategy, a problem is posed, students have time to think about it individually, and then they work in pairs to solve the problem and share their ideas with the class. Think-pair-share is easy to use within a planned lesson, but is also an easy strategy to use for spur-of-the-moment discussions. This strategy can be used for a wide variety of daily classroom activities such as concept reviews, discussion of questions, partner reading, brainstorming, quiz reviews and topic development, etc. Think-pair-share helps students develop conceptual understanding of a topic, develop the ability to filter information draw conclusions, and develop the ability to consider other points of view.

The above discussion clearly depicts the picture of the contemptible practices of mathematics instruction as well as the importance of think-pair-share technique in mathematics education. From a cautious review of literature conducted by the investigator it could be revealed that not much work has been done about think-pair-share as a technique for mathematics teaching at secondary school level. Hence the investigator decided to make an attempt to explore the effectiveness of think-pair-share technique in the achievement in mathematics of students at secondary level.

Hypotheses of the Study

1. The mathematics achievement of secondary school students taught through think-pair-share technique is significantly higher than that of students taught through the activity oriented method.
2. The mathematics achievement of secondary school students taught through think-pair-share technique is significantly higher than that of students taught through the activity oriented method under the objective knowledge.
3. The mathematics achievement of secondary school students taught through think-pair-share technique is significantly higher than that of students taught through the activity oriented method under the objective understanding.
4. The mathematics achievement of secondary school students taught through think-pair-share technique is significantly higher than that of students taught through the activity oriented method under the objective application.

Objectives of the Study

1. To compare the achievement of secondary school students in mathematics taught through think-pair-share technique with that of students taught through the activity oriented method
2. To compare the achievement of secondary school students in mathematics taught through think-pair-share technique with that of students taught

through the activity oriented method under the objectives knowledge, understanding, and application

Methodology in Brief

For the present study pre test post test non-equivalent group design of experimental method was employed. Two divisions of eighth standards of Christ Raj High school, Valiyathovala, Idukki were taken for the experiment. One division was taught through activity oriented method which was treated as control group and the other through think-pair-share technique which was the experimental group. Same lessons were taught to the two groups. Before conducting the classes a pre test to know the level of achievement regarding the selected lessons was administered to the experimental group and control group. After treatment of the experimental group with think-pair-share technique, and control group with activity oriented method of teaching the same test was given as post test to both the groups. The difference in achievements of the two groups before and after treatment was subjected to statistical procedures to verify the hypotheses.

Results and Discussion

1. Effectiveness of think-pair-share technique in comparison with the activity oriented method on the achievement in mathematics at secondary level

The pre-test and post-test scores (total) of the experimental group and control group were subjected to analysis of covariance (ANCOVA) to determine the effectiveness of Think-pair-share technique on the achievement in mathematics over the present activity oriented method. The adjusted means of post-test scores (Y means) of pupils in the experimental group and control group were computed. The difference between the adjusted Y means was tested for significance. The details are given in table 1.

Table 1

Data and result of the test of significance of the difference between adjusted means of post-test scores in the experimental group and in the control group

Group	N	M_x	M_y	M_{yx} (adjusted)	*t* value
Control	35	3.26	11.54	11.84	10.82 ($p < .01$)
Experimental	35	3.57	19.57	19.27	
General means		3.42	15.55		

The obtained value of *t*, 10.82, is much greater than the table value, 2.65 (*df* = 67), at .01 level and the adjusted mean of experimental group is greater than that of control group. Hence it can be interpreted that learning through Think-pair-share technique is more effective than the activity oriented method for increasing achievement in mathematics at secondary level.

2. Effectiveness of think-pair-share technique in comparison with the activity oriented method on the achievement in mathematics at secondary level based on the objective knowledge

The pre-test and post-test scores (under the objective knowledge) of the experimental group and control group were subjected to ANCOVA to determine the effectiveness of the experimental strategy. The difference between the adjusted Y means was tested for significance. The details are given in table 2.

Table 2

Data and result of the test of significance of the difference between adjusted means of post-test scores (under the objective knowledge) in the experimental group and in the control group

Group	N	M_x	M_y	M_{yx} (adjusted)	*t* value
Control	35	1.97	4.51	4.55	4.46 ($p < .01$)
Experimental	35	2.11	5.49	5.46	
General means		2.04	5.00		

The obtained value of *t*, 4.46, exceeds the table value, 2.65 (*df* = 67), at .01 level and the adjusted mean of experimental group is greater than that of control group. Hence it can be interpreted that learning through think-pair-share technique is more effective than the activity oriented method for increasing achievement in mathematics at secondary level with regard to the objective knowledge.

3. Effectiveness of think-pair-share technique in comparison with the activity oriented method on the achievement in mathematics at secondary level based on the objective understanding

The pre-test and post-test scores (under the objective understanding) of the experimental group and control group were subjected to ANCOVA to determine the effectiveness of the experimental strategy. The difference between the adjusted Y means was tested for significance. The details are given in table 3.

Table 3

Data and result of the test of significance of the difference between adjusted means of post-test scores (under the objective understanding) in the experimental group and in the control group

Group	N	M_x	M_y	M_{yx} (adjusted)	*t* value
Control	35	1.14	4.43	4.57	8.81 (p< .01)
Experimental	35	1.34	8.49	8.36	
General means		1.24	6.46		

The obtained value of *t*, 8.81, exceeds the table value, 2.65 (*df* = 67), at .01 level and the adjusted mean of experimental group is greater than that of control group. Hence it can be interpreted that learning through think-pair-share technique is more effective than the activity oriented method for increasing achievement in mathematics at secondary level with regard to the objective understanding.

4. Effectiveness of think-pair-share technique in comparison with the activity oriented method on the achievement in mathematics at secondary level based on the objective application

The pre-test and post-test scores (under the objective application) of the experimental group and control group were subjected to ANCOVA to determine the effectiveness of the think-pair-share technique. The difference between the adjusted Y means was tested for significance. The details are given in table 4.

Table 4

Data and result of the test of significance of the difference between adjusted means of post-test scores (under the objective application) in the experimental group and in the control group

Group	N	M_x	M_y	M_{yx} (adjusted)	*t* value
Control	35	0.143	2.6	2.59	6.80 (p< .01)
Experimental	35	0.114	5.6	5.61	
General means		0.129	4.1		

The obtained value of *t*, 6.80, exceeds the table value, 2.65 (*df* = 67), at .01 level. The adjusted mean of experimental group is greater than that of control group. Hence it can be interpreted that learning through think-pair-share

technique is more effective than the activity oriented method for increasing achievement in mathematics at secondary level with regard to the objective application.

In the present study the think-pair-share technique was found to be more effective than the existing method in increasing the total achievement in mathematics as well as achievement under various dimensions such as knowledge, understanding, and application among secondary school students. The findings of the present research are in close agreement with that reported in Carss and Diane (2007), Kaul (2010) Ifamuyiwa and Onakoya (2012), Glomo-Narzoles (2012), Makanong (2013), and Trent (2013).

Conclusion

Learning of mathematics is a difficult task to a large number of students due to various reasons. Mathematics anxiety is a serious problem that is not amenable to easy solutions. Because of the avoidance strategies that develop from the fear and anxiety associated with mathematics, students learn and memorize it without understanding. Think-pair-share technique is a solution for this problem faced by the students. The findings of the present study show that cooperative learning using think-pair-share technique is more effective than the existing method in increasing students' achievement in mathematics. Therefore it may be recommended that think-pair-share technique should be encouraged among schools and colleges since it has proved itself to be a more effective method. Appropriate training for the teachers should also be provided to adopt think-pair-share technique in the classroom.

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EDUCATIONAL AND PSYCHOSOCIAL PROBLEMS OF SECONDARY SCHOOL STUDENTS BELONGING TO ERAVALLAN TRIBE OF PALAKKAD DISTRICT

Sreeja S. and Deepa A.

Abstract

Kerala is an abode of Eravallan tribe communities. The Eravallan tribes are the poorest among the tribal groups in Kerala. Regarding the educational status of Eravallan tribes, they are mostly far from others. Almost all the Eravallan tribes are illiterate. The realization of the need to mainstream Eravallan tribes, we are mainly focused on their education, psychological and social development. Present study examines the significance of educational and psychosocial problems of students belonging to Eravallan tribe in Palakkad district. Normative survey method was adopted for the study. The analysis of data was carried out employing appropriate statistical techniques such as percentage and Karl Pearson's Product Moment Coefficient Correlation. The results revealed that the educational and psycho social problems of students belonging to Eravallan tribe have a positive significant relationship.

Background of the Study

Eravallan tribes are found mainly at the Chittur Taluk of the Palakkad district. They are also found in the neighbouring Coimbatore district of Tamil Nadu. This tribe was originally known as VilluVedan (hunters using bows and arrows). The present name may be the corruption of an early name Eravallan (beggar), because some of them subsisted by begging. Eravallan claim that they are the offsprings of incarnated gods, but have nothing definite to narrate regarding those gods. Their language is a mixture of Tamil, Kannada and Malayalam and they speak any of them depending upon the social situation. This affects their communication and mainstreaming which is the main gateway for their educational and psychosocial development.

Most of the tribes of Kerala state belong to the famous family group of Dravidians. They have got similar traits and body structure. But Eravallan tribe of Kerala has got dark complexion and quite short in height. These tribes of Kerala grow their hair long and also tie the hair locks. The facts about Eravallan tribes are not known to people. Some tribes in Kerala have come to the mainstream while some of them including the Eravallan tribes are far from development and education. The Eravallan tribes are the poorest among the tribal groups in Kerala. They are preserving their own distinct dress, art, values, beliefs, customs and conduct. This is one of the main reasons of their isolation from the society.

Regarding educational status of Eravallan tribes, they are mostly far from others. Almost all the Eravallan tribes are illiterate. Most of the Eravallan tribes do not even know Malayalam or Tamil. They have their own unique language. So schooling is very difficult for students belonging to Eravallan tribes. The biggest challenge is the enrolment of the tribal students and enhances their aspiration to learn by giving proper guidance. If an innovative and flexible curriculum should be developed in their own language and the students are taught through proper methods, which will definitely increase their confidence and motivation. Thus the tribal school dropouts can be reduced and they can lead a successful and independent life. At present, tribes have been exploring alternative methods of education, beyond their situations. Even social reformers are not trying to preserve the traditional art, culture, language and also their knowledge regarding medicine (Beck & Mishra, 2010).

The unproductive and traditional type of education system for the tribes was the cause of indifferent attitude of tribal parents towards their children's education. Lack of necessary facilities and equipments for education are the main causes of decreased motivation towards education among the tribes and their educational aspirations. The economic development of Eravallan tribes are nearly linked with their educational advancement because the changing pattern of education plays a significant role in handling everyday life apart from equipping a person with necessary skills. Education can bring changes and development gradually for the next generation. Therefore, quality education can avoid general educational problems like lack of infrastructural facilities, lack of qualified teachers, their training, status of curriculum and the teaching learning materials, use of tribal language in the classroom transaction, status of school enrolment and school dropout with special reference to factors affecting enrolment and dropout, difficulties on community participation and the problems of Eravallan Tribal students in and outside the family etc. (Gautum, 2003).

Among the various important factors that influence the tribal mainstreaming, lack of education and psychosocial problems are most important. Eravallan tribe students have distinct background from their non tribal school mates and even the teachers who are outside from their culture do not understand their language, culture and psychosocial aspects. To the teacher, tribal students appear untidy that reinforces their bias against tribes. Their biases are expressed in various forms of discriminations. The native Eravallan language is a combination of Kannada, Tamil and Malayalam. But it is only a spoken language with no alphabets. The realization of the need to mainstream Eravallan tribes, we are mainly focused on their education, psychological and social development. The biggest challenge is not only the development of child friendly curriculum but also to understand the educational and psycho-social problems of Eravallan tribe students. Hence the investigator decided to conduct a study on the

educational and psychosocial problems of students belonging to Eravallan tribe in Palakkad district.

Hypotheses of the Study

1. There will be significant relationship between educational and psychosocial problems of secondary school students belonging to Eravallan tribe.

Objectives of the Study

1. To find out the extent of educational problems of secondary school students belonging to Eravallan tribe of Palakkad district
2. To find out the extent of psychosocial problems of secondary school students belonging to Eravallan tribe of Palakkad district
3. To find out whether there exist any significant relationship between educational and psychosocial problems of students belonging to Eravallan tribe

Methodology in Brief

The present investigation is meant to assess the educational and psychosocial problems of students belonging to Eravallan tribe. Normative survey method was adopted for the study. The sample consisted of 420 students belonging to Eravallan tribe of Palakkad district. The sample was selected using random sampling technique. To collect the data required for the study a questionnaire was used. The analysis of data was carried out employing appropriate statistical techniques such as percentage, Karl Pearson's Product Moment Coefficient Correlation and t-test (test of significance between r's).

Results and Discussion

I. Extent of educational problems of secondary school students belonging to Eravallan tribe of Palakkad district

Table 1

Mean standard deviation and percentage score of educational problems of secondary school students belonging to Eravallan tribe

Group	N	Variable	Mean	SD	Percentage
Tribal students	420	Educational Problems	105.45	14.01	34.28%

From table 1, it is seen that the Mean and SD scores obtained for educational problems of tribal students in Palakkad districts is 105.45 and 14.01 respectively. Eventhough government takes a lot of measures to improve the educational status of the tribal students, 34.28% still faces educational problems.

For finding the Eravallan tribe students belonging to high, moderate and low educational problem, the investigator computed $M \pm 1\sigma$. The score obtained above the value $M+1\sigma$ is taken as high educational problem group, the scores

obtained below the value M-1σ is taken as low educational problem group and those scores obtained in between the value $M \pm 1\sigma$ and $M \pm 1\sigma$ is taken as moderate educational problem group.

Number and percentage of high, moderate and low groups of Eravallan tribe students facing Educational problems is given in table 2.

Table 2
Number and percentage of high, moderate and low groups of Eravallan tribe secondary school students facing Educational problems

Category	Group	N	Percentage scores
Eravallan tribe students	High	76	18.1%
	Moderate	246	58.6%
	Low	98	23.3%
Total		420	100%

From table 2, it can be found that 18.1% tribal students come under the group of high educational problems 58.6% tribal students come under the group of moderate educational problems and 23.3% tribal students is having low educational problems.

II. Extent of psychosocial problems of secondary school students belonging to Eravallan tribe of Palakkad district

To study the extent of psychosocial problems of students belonging to Eravallan tribe, the investigator administered a questionnaire to the sample of 420 tribal students randomly selected from tribal schools in Palakkad district. The questionnaire consisted of 80 items. The maximum score given to one item is 2 and the minimum score is 1.

The filled up questionnaire were collected and scored. The Arithmetic Mean and Standard Deviation of the scores are presented in table 3.

Table 3
Mean and Standard Deviation and Percentage Score of psychosocial problems of Eravallan tribe students

Group	N	Variable	Mean	Standard deviation	Percentage scores
Tribal students	420	Psycho social Problems	123.04	14.04	37.62%

From the table 3, it is seen that the Mean and Standard deviation scores obtained for psycho social problems of tribal students in Palakkad districts is 123.04 and 14.03 respectively and the psychosocial problems of students belonging to Eravallan tribe are 37.62%. Thus it can be interpreted that Eravallan

tribe students at secondary level have psycho social problems which affects their social adjustment.

For finding the Eravallan tribe students belonging to high, moderate and low psycho social problem groups, the investigator computed M±1σ. The score obtained above the value M+1σ is taken as high psycho social problem group, the scores obtained below the value M-1σ is taken as low psycho social problem group and those scores obtained in between the value M±1σ and M±1σ is taken as moderate psycho social problem group. Number and percentage of high, moderate and low groups of Eravallan tribe students facing psychosocial problems is given in table 4.

Table 4

Number and percentage of high, moderate and low groups of Eravallan tribe secondary school students facing psychosocial problems

Category	Group	No.	Percentage
Eravallan tribe students	High	78	18.6%
	Moderate	226	53.8%
	Low	116	27.6%
Total		420	100%

From table 4, it can be found that 18.6% tribal students come under the group of high psychosocial problems, 53.8% tribal students come under the group of moderate psycho social problems and 27.6% tribal students is having low psycho social problems.

III. Relationship between educational and psychosocial problems of secondary school students belonging to Eravallan tribe of Palakkad District

To find out the relationship between educational problems and psychosocial problems of students belonging to Eravallan tribe, the educational problems scores and psycho social problems scores of 420 respondents were subjected to Karl Pearson's product moment correlation test.

Table 5

Relationship between educational and psychosocial problems of students belonging to Eravallan tribe

Variables Correlated	N	r
Educational problems and Psycho social problems	420	0.72

The correlation coefficient (0.72) indicates high positive correlation between educational and psychosocial problems among secondary school students belonging to Eravallan tribe. Thus it can be interpreted that the

educational and psycho social problems of students belonging to Eravallan tribe has a positive significant relationship.

Suggestions for Improving Educational Practice

1. School authorities should give special care and attention to the students belonging to the Eravallan tribe communities.
2. Special training for non-tribal teachers to work in tribal areas, including knowledge of tribal dialect.
3. Encourage conducive social and family environment that would help the students to develop appropriate self-concept and achievement motivation.
4. Proper guidance has to be provided to the students about the need of education in the modern technological world.
5. The attitude of the tribal parents towards education should be changed through proper counselling and guidance.

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SELF CONCEPT AND LEVEL OF ASPIRATION OF THE STUDENTS FROM COIR WORKERS' FAMILIES IN ALAPPUZHA DISTRICT

Alphonse Augustine

Abstract

Growth of any nation can be determined by the education provided to all the individuals especially to the weakest among the weaker section. Present world impose pressure on individual since it demands more output. Students also suffer such pressures. In this context, the self concept and level of aspiration have much significance today, as there are so many problems that one faces in day-to-day life. The investigator is interested to find out whether there is any difference in the self concept and level of aspiration of the students in coir workers' families from general category in Alappuzha district. In the present investigation, normative survey method was employed to find out self concept and level of aspiration of the students from general and coir workers' families in Alappuzha district. Kerala Self Concept Scale – (Standardized tool by A. Sukumkaran Nair) and a questionnaire for assessing level of aspiration were used to collect data. The study revealed that the students belonging to coir workers' families are inferior to the general category students with regard to their self concept and level of aspiration. It was also observed that there exists significant relationship between these two variables.

Background of the Study

Today's children are tomorrow's citizens. To make them responsible citizens, we should instruct them in the right manner and pass on a variety of knowledge. The personality of an individual depends on his behaviour which he has shaped through his education. Thus education has a significant role in moulding the character and personality of an individual. Education means both acquisition of knowledge and the all-round development of an individual which help him to lead a full and worthwhile life. It is the duty of each and every individual to identify the needs and interest of students coming from different situations. Education is one of the major factors which lead to human resource development. This development is the base of all kinds of developments, social, political, economical etc. It also helps to develop basic learning skills like reading, writing and arithmetic that are necessary for children to survive and improve their quality of life in future. The indisputable aim of education is to fit a person for his work in life by using his hidden potentialities. Education should take upon the development of personality as far more significant as the accumulation of intellectual tools and academic knowledge. Educational aspiration is one of the crucial determinants of a person's success in life. It is influenced by a number of

factors - intrinsic as well as extrinsic. The lifestyle of human beings changes rapidly owing to the scientific inventions and consequent advances in technology. So self concept and level of aspiration have much significance today, as there is so many problems that one faces in day-to-day life. Self is the concept developed by a person by which his success or failure can be measured by himself.

Coir is a unique natural fiber used for diverse applications. Coir industry which has a long tradition is an important sector as far as economy of Kerala state is concerned. Most of the coir workers are coming from socially and economically backward classes. The industry provides direct employment to more than 3.5 lakh workers, majority of them are females. It is mainly concentrated in coastal districts of the state. The major constituents in the coir sector are co-operatives, private, public, government undertakings and unorganized manufacturing units. But, over a period of time, the coir sector has not grown appreciably and has remained almost stagnant. The employees are discouraged and younger generations are hesitant to take up jobs in this sector because of low income and absence of a modern factory set up. The level of income is much below compared to that of other sectors. The shortages of fiber, environmental degradation, inadequate mechanization programme, etc. are other key factors for the backwardness of coir families.

The present technology and use of improved production methods in the industry in an organized way started in the early nineties with the introduction of mechanization of spinning and weaving. Majority of the coir workers families belong to Alappuzha district. The students coming from coir workers families struggle a lot to earn higher education because of their low economic status. As it is a small scale or cottage industry, the coir workers are doing their work with low profit and they have very low socio economic status. Their earning is meager when compared with other wage workers. Even though the whole family works together, their earnings are not enough to lead a comfortable life. The investigator feels that their socio-economic conditions drag them backward in the society.

The level of aspiration and self concept can be different for different students coming from different backgrounds. In Alappuzha district, there are a number of coir factories and many people are earning their living through coir works for generations. The investigator is interested to find out whether there is any difference in the self concept and level of aspiration of the students in coir workers' families from general category in Alappuzha district.

Objectives of the Study

1. To compare the self concept of the students from general and coir workers' families in Alappuzha district
2. To compare the level of aspiration of the students from general and coir workers' families in Alappuzha district

3. To find out the relationship between self concept and level of aspiration among the students from coir workers' families

Methodology in Brief

In the present investigation, normative survey method is employed to find self concept and level of aspiration of the students from general and coir workers' families in Alappuzha district. A sample of 494 secondary students is selected from the district. Out of this 239 respondents were from general and 255 from coir workers' families. Kerala Self Concept Scale – (Standardized tool by A. Sukumkaran Nair) and a questionnaire for assessing level of aspiration were used to collect data. Arithmetic mean, standard deviation, and critical ratio were used for analyzing the data.

Results and Discussion

1. Comparison of self concept among students from general category and students from coir workers' families

The sample for the present study consists of 494 students, out of this 239 are from general category and 255 are from coir workers' families. The scores for self concept were collected and arithmetic means, standard deviations, and critical ratio were calculated. The details are presented in table 1.

Table 1
Data and result of the test of significance of the difference between mean self concept scores of students from general and coir workers' families

Sl. No.	Category	No	Mean	Standard Deviation	Critical Ratio
1.	General students	239	66.39	15.34	6.23 ($p < .01$)
2.	Students from coir workers' families	255	57.48	16.33	

The mean and standard deviation self concept of general students are 66.39 and 15.34 and that of students from coir workers' families are 57.48 and 16.33 respectively. The critical ratio calculated is 6.23 and it is greater than 2.58 (significant at .01 level). This shows that there is significant difference between the self concept of general and students from coir workers' families. Since the mean of self concept of students from coir workers' families is lower than general students, it is implied that self concept of the students from coir workers' families is less than that of students from general category.

2. Comparison level of aspiration among students from general category and students from coir workers' families

The scores for level of aspiration among students from general category and students from coir workers' families were collected and arithmetic means, standard deviations, and critical ratio were calculated. The data and result of the test of significance of the difference between mean scores are presented in table 2.

Table 2
Data and result of the test of significance of the difference between mean scores of level of aspiration of students from general and coir workers' families

Sl. No.	Category	No	Mean	Standard Deviation	Critical Ratio
1.	General students	239	28.48	5.28	8.19 ($p < .01$)
2.	Students from coir workers' families	255	24.86	4.49	

The mean and standard deviation of level of aspiration questionnaire of general students are 28.48 and 5.28 and that of students from coir workers' families are 24.86 and 4.49 respectively. The critical ratio calculated is 8.19 and it is greater than 2.58 (significant at .01 level). This shows that there is significant difference between the level of aspiration of general and students from coir workers' families. Since the mean score of the level of aspiration of students from general category is greater than student from coir workers' families, it is implied that level of aspiration of students from general category is higher than that of students from coir workers' families.

3. Relationship between self concept and level of aspiration among the students from coir workers' families in Alappuzha district

In order to find out the correlation between self concept and level of aspiration among the students from coir workers' families the scores obtained for these two variables were subjected to Karl Pearson's product moment correlation. The details are shown in table 3.

Table 3
Data showing the correlation between self concept and level of aspiration of students from coir workers' families

Variable	N	r
Self concept	255	.625
Level of aspiration		

The value of coefficient correlation 'r' obtained (.625) indicates that there exists a significant high positive relationship between self concept and level of aspiration of the students from coir workers' families.

Educational implications

In the present study, self concept and level of aspiration among students from general and coir workers' families in Alappuzha district are assessed. The results show that the students from general category are better than students from coir workers' families with respect to selected psychological variables. One of the benefits of a strong self concept is the capacity to control the various areas of our emotional world in a way that it provides consistency and balance to our life. Teachers and parents have a key role in helping the secondary school students to overcome the hindrances in the development of these variables. Proper guidance and counselling should be rendered to them whenever needed. Schools should organize various programmers to help the students to develop their self concept and level of aspiration.

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