Certificate
of Participation

RKDF UNIVERSITY
ERUDIO GLORIFICATE
GENS
Education Glorifies Nation

Webinar on
SKILL OF RESEARCH PAPER WRITING

Prof.(Dr.) Diwakar Shukla

Dean, School of Mathematical and Physical Sciences (MPS) Professor & Head, Department of Computer Science & Application, Dr. Hari Singh Gour Central University, Sagar (MP)

This is to certify that Mr/Ms/Dr/Prof . Pinjari Chirakhoddin Vajiroddin

Participated in online webinar on above topic organized by RKDF University, Bhopal (M.P.) - India on 23rd June 2020.

Dr. Sharad Gangele
Convenor
Principal, Bhabha College of Engineering
RKDF University, Bhopal

Dr. B.N. Singh
Director Management
RKDF University
Bhopal

Dr. Sudesh Kumar Sohani
Vice Chancellor
RKDF University
Bhopal

CERTIFICATE OF PARTICIPATION

is awarded to

Pinjari Chirakhoddin Vajiroddin

for participating in "**Spit Free India Movement**"
during Jun. – Aug. 2020 to prevent the spread of COVID-19.

DR. PRAVIN MAHALE
Coordinator

DR. PANKAJKUMAR NANNAVARE
Director, NSS
KBCNM University, Jalgaon

ARVIND MATHUR
Trustee
Sambandh Health Foundation

DR. ATUL SALUNKE
SLO & OSD (NSS)
Government of Maharashtra

PLEDGE for LIFE
Tobacco Free Youth

NATIONAL SERVICE SCHEME

" Grade A"
Re-accredited By NAAC in 2014
with CGPA- 3.16

Interdisciplinary National Conference

on

Researches and Experiments in Constructivist Pedagogy

19th and 20th March 2016

Mental representations

discovery learning

Rorty

vico

constructivism

cognitive appreenticeship inquiry
personal experiences
dialogical process   scaffolding
Vygotsky
learning as experience
piaget
Dewey
prior knowledge

Bruner anchored instruction
zone of proximal development active contextualized
problem based learning
process

Organized By,
Department of Education,
Shivaji University, Kolhapur - 416004
Maharashtra

EDITOR
Pramod P. Tandale

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

" Grade A"
Re-accredited By NAAC in 2014
with CGPA- 3.16

Interdisciplinary National Conference

on

Researches and Experiments in Constructivist Pedagogy

Saturday, 19th and Sunday, 20th March 2016

Organized by the

Department of Education

Shivaji University, Kolhapur - 416004

Maharashtra

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- Department Of Education,Shivaji University,Kolhapur (Maharashtra) | ISSN 2349-638x Impact Factor 2.147 |

ORGANISING COMMITTEE OF THE CONFERENCE

Dr. (Ms.) Pratibha .S. Patankar

Conference Convenor

Professor and Head, Department of Education,

Shivaji University, Kolhapur (M.S.)

Mob. 9960192103

e-mail: pratibhapatankar@gmail.com

Dr. (Ms.) Geetanjali .S. Patil

Conference Director

Assistant Professor, Department of Education,

Shivaji University, Kolhapur (M.S.)416004

Mob. 9421286148

e-mail: gspatil_31@rediffmail.com

Dr. (Ms.) M.S. Padmini

Conference Co-Director

Professor, Department of Education,

Shivaji University, Kolhapur (M.S.)

Mob. 9890018130

Dr. (Ms.) Chetna . P. Sonkambale

Conference Co-Director

Associate Professor, Department of Education,

Shivaji University, Kolhapur (M.S.)

Mob. 9422203053

Dr. (Ms.) Neelima R. Sapre

Conference Co-Director

Assistant Professor, Department of Education,

Shivaji University, Kolhapur (M.S.)416004

Mob.9422242551

Dr. (Ms.) Supriya P. Patil

Conference Co-ordinator

UGC Post - Doctoral Fellow,

Department of Education,

Shivaji University, Kolhapur (M.S.)

Mob. 9503810959

Mr. Rajendra L. Chavan

Conference Co-ordinator

UGC Senior Research Fellow,

Department of Education,

Shivaji University, Kolhapur (M.S.)

Ms. Sushama A. Konduskar

Conference Co-ordinator

UGC Junior Research Fellow,

Department of Education,

Shivaji University, Kolhapur. (M.S.)

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Editor Message

At the very outset we take this opportunity to put on record the valuable contributions in the form of articles and research papers made by all the delegates in **Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy** in the form of this special Issue No.7 of Aayushi International Interdisciplinary Research Journal.

This **special Issue No.7** has included enlightening articles and research papers based on Researches and Experiments in Constructivist Pedagogy and related sub themes of this conference.

We have received very good response from various district of the Maharashtra.We have received 29 research paper related to the main themes and sub-themes.This proceeding of conference will be helpful to the researches who wish to undertake research in the near future. So, I am very glad to publish this proceeding.

I am very thankful to Dr. (Ms.) Pratibha .S. Patankar,Professor and Head, Department of Education,Shivaji University, Kolhapur (M.S.) and Dr.(Ms.)Geetanjali.S.Patil,Conference Director, Department of Education,Shivaji University, Kolhapur (M.S.) for their help and constant support for publication, and to thanks member of organizing committee of conference.

Indeed it is matter of great privilege and honor to express our deep sense of gratitude to all those who offered their esteemed and selfless contribution in this event.

Editor

Pramod P.Tandale

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:- Department Of Education,Shivaji University,Kolhapur (Maharashtra)	ISSN 2349-638x Impact Factor 2.147

DEPARTMENT OF EDUCATION
SHIVAJI UNIVERSITY, KOLHAPUR-416 004.MAHARASHTRA
PHONE : EPABX-2609000

शिवाजी विद्यापीठ, कोल्हापूर - **416 004** महाराष्ट्र
दूरध्वनी : (ईपीएबीएक्स) **2609000**
फॅक्स : **0091&231&2691533 o 0091&231&2692333**
Registrar's Office Fax - 0091-231-2692333
C.O.E. Office Fax   - 0091-231-2690655

'A'

Re-accredited By NAAC (2014)

With CGPA-3.16

Message

The buzzword in the field of Education in 21st Century is ' Constructivism' which is revitalizing the whole education process. Teachers, Teacher -educators, Educationist all they have sound theoretical background about Constructivism and various training programmes, extension activities etc. are organized to implement it practically. Many researches and experiments have been and are being conducted to find out the effectiveness of constructivist pedagogy for teaching various subjects from different disciplines. Hence, Department of Education, Shivaji University, Kolhapur has given them all platform to know their efforts to everybody related to the field of Education by organizing Two days Interdisciplinary National conference on ' **Researches and Experiments in Constructivist Pedagogy on Saturday, 19th and Sunday, 20th March 2016.'**

This Special publication by the Journal **Aayushi International Interdisciplinary Research Journal** is collection of 29th Research as well as theoretical papers which were presented in the conference . They have covered wide range of all the subthemes of the conference.

The conference included keynote addresses by the Resource Persons, Professor Shefali Pandya (Mumbai) and Prof. S. S. Patil (Shimoga), Karnataka and Paper Presentation sessions. I gratefully acknowledge the contribution of the Resource persons.

I am sure that the deliberations during the course of the National Conference were fruitful and the Participants greatly beneficiated from it.

I congratulate all the Staff and Research Scholars of the Department of Education for their sincere efforts in the organization of the conference.

Date : 04/06/2016
Place : Kolhapur

Dr. Pratibha S. Patankar
Professor and Head,
Department of Education,
Shivaji University,Kolhapur

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:-	ISSN 2349-638x
Department Of Education,Shivaji University,Kolhapur (Maharashtra)	Impact Factor 2.147

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

CONSTRUCTIVIST STRATEGIES FOR MINIMIZATION OF SCIENCE MISCONCEPTIONS AMONG SCHOOL STUDENTS

Rajendra L. Chavan[a]

[a] Ph.D. Research Scholar,
UGC NET-Senior Research Fellow,
Department of Education,
Shivaji University, Kolhapur. India-416004.
rajendrachavan1@gmail.com
Mo. +91 9665318867

Prof. Dr. Pratibha S. Patankar[b]

[b] Professor & Head,
Department of Education,
Shivaji University, Kolhapur.
India- 416004
pratibhaspatankar@gmail.com
Mo. +91 9960192103

Abstract

Students enter in the class with prior ideas which are formed with their interaction with the world around them. Some of their ideas may be misconceptions. Misconceptions also called as preconceived notions, non scientific beliefs, conceptual misunderstanding, vernacular misconceptions, blind beliefs, or naïve concepts. Parents, folklore, teachers, multimedia's, textbooks, even learner themselves are responsible for cultivating and fostering misconceptions. Constructivism is a theory of how the learner constructs knowledge from experience, which is unique to each individual. Constructivism according to Piaget (1971) is a system of explanation of how learners as individuals adapt and refine knowledge. According to constructivist point of view, constructivist based teaching strategies are helpful for cognitive development of children and it may play a vital role to remediate the misconceptions

The paper is useful to know more about the some important constructivist strategies which are helpful to minimizing the science misconceptions among school students

Keywords: Constructivist Strategies, Science Misconceptions, Concept Map, Conceptual change text, School Students

Introduction

Students come to science classes with prior ideas, formed through their interaction with the world around them. These ideas may arise from their personal observations and interpretations of everyday natural and physical phenomena or be communicated to them through the media. While it is expected from students to have some knowledge about a science topic before learning it formally in school, some of their ideas may be misconceptions. These misconceptions (also referred to as alternative conceptions, children's science or 'naive theories') may stand in the way of learning the 'correct' formally accepted concepts.

Misconception is described as idea that provide an incorrect understanding of concept, objects or events that are constructed based on a personal experience (Martin et al., 2002) including such things as preconceived notions, nonscientific beliefs, naïve theories, mixed conceptions or conceptual misunderstandings (Hanuscin, 2005). Piaget suggest that children search for meaning as they interact with the world around them (Eggen and Kauchak, 2004), and use such experiences to test and modify existing schemas. There are many possible sources for the development of misconceptions.

Misconceptions themselves can be related to such things as misunderstanding factual information or being given conflicting information from credible sources such as parents and teachers. For example, when parents or other family members are confronted with questions from their children, rather than admitting to not knowing the answer, it is common for them to give an incorrect one (Hanuscin, 2005). Other sources of misconceptions include resource materials, the media and teachers.

Page1

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:- **Department Of Education,Shivaji University,Kolhapur (Maharashtra)**	**ISSN 2349-638x** **Impact Factor 2.147**

Constructivism

Constructivism is one of theory of the learning which well developed in the recent year and becomes most significant and dominant perspective in science education (Taber, 2006). According to Bodner (1986) constructivist model focus on constructing the knowledge in the learners' mind. Every student has different experiences; therefore teacher has to be aware that knowledge is constructed differently in the learners' mind. Students have their own preexisting knowledge based on their experiences that is constructed in their mind. Most studies show the advantages of using constructivist based teaching are helpful to recognize and remediate the students' alternative conceptions. Chavan, R. L. & Patankar, P. S. (2015) described some conceptual change strategies for minimizing the science misconceptions.

Effective Constructivist Strategies for Minimize the Science Misconceptions

According to review of researches on science misconceptions, there are many constructivist strategies which are used for minimize the science misconceptions among the students. These are as follows.

Table No.1 Usefulness of the Constructivist Strategies for minimization of Science Misconceptions

Sr. No.	Constructivist Strategies	Suggested by the researchers	Usefulness of the strategy for minimization Misconceptions
1	Concept Maps	Novak & Gowin (1984), Mehmet BAHAR (2003) Misconceptions In Biology Education And Conceptual Change Strategies, Adiyiah Michael (2011) Using Concept Mapping To Enhance The Learning Of Cell Theory By First Year (Senior High School) Students At Osei Kyeretwie Senior High School	- It can give an insight into ideas lodged in a student's cognitive structure. - illustrate the links between main concepts and sub concepts.
2	Word Association	(Bahar, Kempa & Nicholls, 1983; Johnstone & Moynihan,). Analysis of Secondary School Students' Perceptions Shavelson, R. J. (1974). Methods for examining representations of a subject-matter structure in a student's memory.	- Spontaneous responses of students for investigation of cognitive structure
3	Concept Cartoons	Christine Chin (2008) Title Eliciting Students' Ideas and Understanding In Science: Diagnostic Assessment Strategies for Teachers.	-to represent in pictorial scene where cartoon characters express different views about an illustrated situation. Pupils then decide which character is correct or offer their own explanation
4	Pupils drawing	Sacit Köse (2008) Diagnosing Student Misconceptions: Using Drawings as a Research Method	-students conceptions framework reflects in their drawing paper and teachers can correct these conceptions.
5	Card Sorts	Julia I. Smith & etal. (2013) Development of the Biology Card Sorting Task to Measure Conceptual Expertise in Biology Bell, B. (1993). Taking into account students' thinking.	- it will helping to remediate the students misconception in oral presentation in classroom according to their cards
6	The Clinical Interview	Posner, G.J., Gertzog, W.A.(1983) The clinical interview and the measurement of conceptual change.	-in-depth inquiry and possibility of elaboration to obtain detailed descriptions of a

			student's cognitive structures
7	**Mind Maps**	TESS(2009)Using mind maps as a teaching, learning and assessment tool: water and the water cycle	- Mind map is helping to clarify students schemas about the concept
8	**Conceptual change text**	Haluk Ozmen (2007), Gulbin & Gamze (2015) used the Effectiveness of Conceptual Change Texts in Remediating High School Students' (tekkaya, 2003). Ibrahim Tastan, Musa Dikmenli, Osman Cardak (Jun., 2008) Effectiveness of the conceptual change texts accompanied by concept maps about students' understanding of the molecules carrying genetical information ,	- Conceptual change texts specify students' misconceptions, clarify their reasons, and explain why they are incorrect by using concrete examples
9	**Role Playing**	Susan E. Riechert, Rachel N. Leander, Suzanne M. Lenhart (2011). A Role-Playing Exercise that Demonstrates the Process of Evolution by Natural Selection	-previous misconceptions of the students would be rectify by allowing him/her role playing by hand puppets in class
10	**Models/ Scientific Apparatus**	NRC. (1997) Science teaching reconsidered: A handbook. Washington, DC: National Academies Press.	helpful in eliciting some misconceptions about scientific phenomenon and also leads to active participation

1) Concept Maps

Concept maps are helpful to elicit misconceptions and revision exercise to assess understanding after the delivery of a topic. Concept maps are the schematic drawing which are used for the showing relationship among the concepts in a proposition form. Concept maps, diagrams and other graphic organizers are useful tools to illustrate the links between main concepts and sub concepts. The concept map is helps students to relate their previous knowledge to the new knowledge. Concept map that was developed as an outgrowth of Ausubel's theory of learning concentrates mainly on the importance of prior knowledge and meaningful learning. It can serve as a vehicle for obtaining a graphic representation of information held in memory. It can therefore give an insight into ideas lodged in a student's cognitive structure.

2) Word Association

Word association is one of the most common and the oldest methods in the investigation of cognitive structure and has been used by several researchers. In this technique, a small number of, typically about ten, key (stimulus) words from the topic are selected and subjects are asked to write as many related terms as possible in a minute (or in 30 seconds) for each stimulus word (taken one at a time). The underlying assumption in this technique is that the order of the response retrieval from long-term memory reflects at least a significant part of the structure within and between concepts (Shavelson, 1972). Researchers have revealed learners misconceptions by describing a context and then asking the student to say loud the first immediately comes to mind. An example would be; the earth in space at summertime' followed by a child response. The earth is very near to the sun'. Spontaneous responses are taught to be linked with what a person strongly believes as with Freudian slips of the tongue, being governed by unconscious processes the person is unaware of and have no control over.

3) Concept Cartoons

Concept cartoons in science education, scientific ideas are represented in pictorial scene where cartoon characters express different views about an illustrated situation. Pupils then decide which

Page3

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

character is correct or offer their own explanation, so eliciting any misconceptions.

Concept cartoons make use of cartoon characters engaged in dialogue. They integrate text in dialogue form with a visual stimulus, represent scientific ideas in familiar, everyday contexts, and provide a stimulus for focused discussion. They present the scientifically acceptable viewpoint as well as several alternatives that are common misconceptions held by students. An example of a concept cartoon is given in Keogh and Naylor (1999, p. 436).

4) Pupils drawing

Children to draw a picture, for instances of different animals can give the teacher an indication of any restrictive sets of any incorrect categorization. In this case if a child has drawn only furry four –legged animals you could ask them why they have not drawn animals such as a fish or an earthworm. Reading a story can be used as a orientation towards a science concept that the teacher would like to elicit, with learners being asked to draw pictures afterwards that offer personal visualization of a certain events in the story, a familiar example being Eric Carle's ' the very hungry caterpillar(1969) being used to elicit misconceptions related to life cycles. Researchers have used pupils own diagrams as a basis for asking questions in order to explore their ideas in intricate details. Sacit Köse (2008) used the drawing as a tool for elicit the Biology misconceptions in high school students,

5) Card Sorts

With younger classes where children have difficulty expressing their ideas in writing. More kinesthetic tasks are preferred, for instance asking them to categorize a number of cards. A traditional method is to have pupil's first sort their cards into the groups that they think are correct and then swipe seats with other pupils so that different arrangements can be examined. The teacher can walk around the room and reading see any misconceptions held by individuals or the class as a whole.

6) The Clinical Interview

Among various methods of diagnosing misconceptions, interviews have the crucial role because of their in-depth inquiry and possibility of elaboration to obtain detailed descriptions of a student's cognitive structures. In fact, interviews have been found to be one of the best (Franklin, 1992; Osborne & Gilbert, 1980b), and the most common (Wandersee et al., 1994) approach used in uncovering students' views and possible misconceptions. Several interviewing techniques have been used in the literature such as Piagetian Clinical Interviews (PCI) (Piaget, 1969; Ross & Munby, 1991), Interview-About-Instances (IAI) (Osborne & Gilbert, 1979), and Interviews-About-Events (IAE) (Bau-Jaoude, 1991; Osborne & Freyberg, 1987; Osborne & Gilbert, 1980a). The interview as a method of eliciting children's conceptions of natural phenomena and learning in science has won wide acceptance in science education research. While the use of systematic questioning in teaching (such as the Socratic method) has a long history, the interview, as a "professional conversation" (Posner & Gertzog, 1982) was initially developed for use by psychiatrists. Only within the last century has the interview (or clinical examination) become viewed as a tool of diagnosis and therapy. It was this clinical diagnostic technique, as adapted by Jean Piaget, Deshmukh, N. D. & Deshmukh, V. M. (2007) used the interviews technique for rectify students misconceptions

7) Mind Maps

Mind mapping is a visual technique that enable students to express their ideas and share their knowledge freely, by means of key components and codes on the subject and making use of pictures and figures, this techniques gets both lobes of the brain active presenting the ideas that come t students

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

mind on a schema related to a specific structure of knowledge makes it easier for students to correlate them with the other structure of knowledge and see all the dimensions of the knowledge concerned as a whole

8) Conceptual change text

Haluk Özmen (2007), Gulbin & Gamze (2015) used the Effectiveness of Conceptual Change Texts in Remediating High School Students' Alternative Conceptions Concerning Chemical Equilibrium & force. Firstly students are given the misconception related to the subject and then they are scientifically explained why those misconceptions are wrong (tekkaya, 2003). In conceptual change texts students are asked a question in order to activate their misconceptions on the subject then students are shown their misconceptions and explained why their comprehension of the concepts is wrong. Students are given examples with scientific explanations of the subject and concepts so that the conceptual change could occur.

9) Role Playing

It is sometimes easier for children to express their true thoughts and free feelings when they are pretending to be someone else. Research into self expression by pupils through hand puppets has suggested that this could be a useful way forward, with the teacher asking the puppet (and not the pupil) direct questions relating to scientific concepts within and imaginary setting.

Ross, Pauline M.; Tronson, (2008) studied that Role-play is an effective method for elicit the misconceptions of conceptual understanding of glycolysis and the Krebs cycle. Susan E. Riechert, Rachel N. Leander, Suzanne M. Lenhart (2011) Showed that role playing is effective strategy for alternative concepts in Natural Selection.

10) Models/ Scientific Apparatus

Models are especially important in science because many real object systems, processes or mental phenomena that scientists deal with cannot be observed and manipulated directly (Rotbain, Savy, 2006). Watching Students how deal with scientific apparatus may be helpful in eliciting some misconceptions about scientific phenomenon. In 1989, the Biological Science Curriculum Study (Binghamton University, New York) group developed the 5E Model of instruction. The 5E cycle focuses on major misconceptions & begins with an 'engage' phase that requires active participation by students,

Conclusion

Now day's students come into the class with lot of prior knowledge as they are exposed to the world through media. Constructing clear concepts in students mind is quite hard task as students have so many alternative or misconceptions with them. This paper suggest concept maps, word association, concept cartoons, pupils drawing, card sorts, clinical interviews, mind maps, conceptual change text, role playing & model/ scientific apparatus constructivist based strategies for elimination of misconceptions.

Concept maps, word association, concept cartoons, pupils drawing, card sorts, clinical interviews, mind maps, strategies are especially useful for identification of misconceptions & conceptual change text, role playing & model/ scientific apparatus, concept cartoons, pupils drawing, etc strategies are useful for remediation of students misconceptions.

Page5

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Acknowledgement:

References in APA style

Ahlberg, Mauri (1993). Concept Maps, Vee Diagrams and Rhetorical Argumentation Analysis (RAA) : Three Educational Theory-based Tools to Facilitate Meaningful Learning. Retrieved 1 March, 2016 from http://www.mlrg.org/proc3pdfs/Ahlberg_MeaningfulLearning.pdf

Allen, M, (2014). Misconceptions in Primary Science, Berkshire: Open University Press McGraw- Hill Edcation.

Ameyaw Y. & Sarpong L. (2011).The Application Of Some Conceptual Approaches In Rectifying Teachers' Misconceptions On Some Science Topics In The Ga South District In The Greater-Accra Region Of Ghana, Journal of Education Vol.1, Issue-I, pp.16-24 Retrieved 2 March, 2016 from http://www.bioinfo.in/contents.php?id=58

Barrass, R. (1984). Some Misconceptions and Misunderstandings Perpetuated by Teachers and Textbooks of Biology. Journal Of Biology Education Vol-18 pp.201-205.

Bell, B. (1993). Taking into account students' thinking. Waikato, New Zealand: Centre for Science and Mathematics Education Research, University of Waikato.

Chavan, R. L. & Patankar, P. S.(2015). Conceptual Change Strategies for Minimizing the Science Misconceptions, National Conference Research Paper Journal, Special Issue, pp.127-130

Chin, C. (2008) Title Eliciting Students' Ideas and Understanding In Science: Diagnostic Assessment Strategies for Teachers. Teaching and Learning, 21(2), 72-85 Retrieved 2 March, 2016 from https://repository.nie.edu.sg/bitstream/10497/352/1/TL-21-2-72.pdf

Deshmukh, N. D. & Deshmukh, V. M. (2007). A Study Of Students' Misconceptions In Biology At The Secondary School Level, episteme-2 conference e-proceedings, Mumbai: Homi Bhabha Centre for Science Education, TIFR, Mumbai, India

Elif Ozata Yucel & Ozkan, Muhlis . (2015). Determination of secondary school students' cognitive structure, and misconception in ecological concepts through word association test Vol.10(5), pp.660-674 , DOI: 10.5897/ERR2014.2022 ISSN: 1990-3839

http://www.academicjournals.org/journal/ERR/article-abstract/75A9C0051120

Gulbin Ozkan, Gamze Sezgin Selcuk. (2015). Effect of Technology Enhanced Conceptual Change Texts on Students' Understanding of Buoyant Force. Universal Journal of Educational Research 3(12), pp.981-988, DOI: 10.13189/ujer.2015.031205 Retrieved 5 March, 2016 from http://www.hrpub.org/download/20151130/UJER5-19504781.pdf

Haluk Özmen (2007). The Effectiveness of Conceptual Change Texts in Remediating High School Students' Alternative Conceptions Concerning Chemical Equilibrium Asia Pacific Education Review 2007, Vol. 8, No.3, pp.413-425. Education Research Institute http://files.eric.ed.gov/fulltext/EJ811075.pdf

Ibrahim Tastan, Musa Dikmenli, & Osman Cardak (2008). Effectiveness of the conceptual change texts accompanied by concept maps about students' understanding of the molecules carrying genetical information , Asia-Pacific Forum on Science Learning and Teaching, Volume 9, Issue 1, Article 11 Retrieved 8 March, 2016 from https://www.ied.edu.hk/apfslt/v9_issue1/cardak2/cardak26.htm

Julia I. Smith, Elijah D. Combs, (2013). Development of the Biology Card Sorting Task to Measure Conceptual Expertise in Biology CBE Life Sci Educ. 2013 Winter; 12(4): 628–644. doi: 10.1187/cbe.13-05-0096 Retrieved 1 March, 2016 from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3846514/

Mustafa Cakir (2008). Constructivist Approaches to Learning in Science and Their Implications for Science Pedagogy: A Literature Review, International Journal of Environmental & Science Education Vol. 3, No.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:-	
Department Of Education,Shivaji University,Kolhapur (Maharashtra)	**ISSN 2349-638x** **Impact Factor 2.147**

4, pp.193-206

Novak, Joseph D.(1987) Misconceptions and Educational Strategies in Science and Mathematics. Retrieved 10 March, 2016 from http://files.eric.ed.gov/fulltext/ED293686.pdf

NRC.(1997). Science teaching reconsidered: A handbook. Washington, DC: National Academies Press.

Patankar, P. S., Baviskar, C. R. & Padmini, M. S. (2005). Concept mapping: A New Technique for Science Education, Edutrack, Vol. 5(2), pp.20-22.

Patankar, P. S. (2012).Constructivist approach for Practice Teaching in Teacher Education Programme, Scholarly Research Journal for Interdisciplinary Studies, Special Issue, pp.1-4 Retrieved, 8 March, 2016 from http://srjis.com/wp-content/uploads/2016/02/Patankar.pdf

Patankar, P. S. (2009). Development of Concept Food Chain Among IX STD Students By Concept Mapping, Gyanodaya, Vol. 2(2), pp.78-81

Patil, S.P. & Sapre, N.R, (2013). Constructivist Teaching: A Challenge ahead Teachers, Indian Stream Research journal, Vol. II pp.33-34

Pauline M. Ross, Deidre A. Tronson, Raymond J. Ritchie (2008)Increasing Conceptual Understanding of Glycolysis & the Krebs Cycle Using Role-Play The American Biology Teacher 70(3) pp.163-168. Retrieved 5 March, 2016 from doi: http://dx.doi.org/10.1662/0002-7685(2008)70[163:ICUOGT]2.0.CO;2

Posner, G.J., Gertzog, W.A. (1982). The clinical interview and the measurement of conceptual change. Science Education 66 195

Ross, Pauline M., Tronson, Deidre A.; Ritchie & Raymond J.(2008). Increasing Conceptual Understanding of Glycolysis & the Krebs Cycle Using Role-Play American Biology Teacher, vol.70 (3) pp1.63-168 Retrieved 4 March, 2016 from http://eric.ed.gov/?id=EJ791438

Sacit Köse (2008).Diagnosing Student Misconceptions: Using Drawings as a Research Method World Applied Sciences Journal 3 (2): 283-293, ISSN 1818-4952 Turkey : IDOSI Publications, Retrieved 1 March, 2016 from http://www.idosi.org/wasj/wasj3(2)/20.pdf

Sapre, N.R., Patil,K.B. & Patil, S.P.(2012). Teacher Education for Constructivist Classroom, Teacher Education Browser, Vol.-I pp.45-51

Shavelson, R. J. (1974). Methods for examining representations of a subject-matter structure in a student's memory. Journal of Research in Science Teaching, 11(3), pp.231-249. Retrieved 3 Mar, 2016 from http://dx.doi.org/10.1002/tea.3660110307

Susan E. Riechert, Rachel N. Leander & Suzanne M. Lenhart. (2011). A Role-Playing Exercise that Demonstrates the Process of Evolution by Natural Selection: Caching Squirrels in a World of Pilferers The American Biology Teacher 73(4):208-212. Retrieved 3 March, 2016 from http://www.bioone.org/doi/abs/10.1525/abt.2011.73.4.4

Technique for Science Education. Edutrack, Vol. 5, No. 1, p-20-22.

The open University, UKaid (2011) Using mind maps as a teaching, learning and assessment tool: water and the water cycle, UKaid:The open University, Retrieved 9 March, 2016 from http://www.teindia.nic.in/Files/TDU/Elementary/Science/es06_pdf_final.pdf

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- Department Of Education,Shivaji University,Kolhapur (Maharashtra) | ISSN 2349-638x Impact Factor 2.147 |

DEVELOPMENT OF COMPUTER MULTIMEDIA PACKAGE FOR ENABLING STUDENT TEACHERS FOR CONSTRUCTIVIST CLASSROOM

Dr. Neelima .R. Sapre[a]

Assistant Professor,

Department of Education,

Shivaji University, Kolhapur

Neelima_sapre@yahoo.com

Mob.9422242551

Dr. Supriya. P. Patil[b]

UGC Post Doctoral Fellow,

Department of Education,

Shivaji University, Kolhapur

sriyaworld@rediffmail.com

Mob. 9503810959

Abstract:

This research examined the effectiveness of Computer Multimedia Package for enabling student teachers for constructivist classroom with reference to Process of Knowledge Construction, abilities required for Knowledge Construction, Teacher tasks for Knowledge Construction for pupils, change in role of teachers & change in teaching approach of your subject. Student teachers from Karad City (N=60) were selected for experimentation. Experimental information was obtained through Paper pencil test, Checklist and Concept maps. Descriptive statistics in the form of frequencies were used to analyze the data. It is concluded that the developed Computer Multimedia Package (CMP) is effective for developing the acquisition of theoretical base of Constructivism, Planning activities required for teaching with Constructivist approach and also understanding the nature of changed teacher tasks and teacher roles in Constructivist Classroom.

Learning is not confined to the four walls of the classroom. For this to happen there is a need to connect knowledge to life outside the school and enrich the curriculum by making it less textbook-centered. The training of teachers is a major area of concern at present as both pre-service and in-service training of school teachers are extremely inadequate and poorly managed in most states. Pre-service training needs to be improved and differently regulated both in public and private institutions, while systems for in-service training require expansion and major reform that allow for greater flexibility. There exists a wide variation in the status of teachers and the need for teachers at different levels of school education across the country.

The NCF2005 demands a teacher to be a facilitator of children's learning in a manner that helps children to construct knowledge and meaning. The teacher in this process is a co-constructor of knowledge. It also opens out possibilities for the teacher to participate in the construction of syllabi, textbooks and teaching-learning materials. Such roles demand that teachers be equipped with an adequate understanding of curriculum, subject-content and pedagogy. There is now a public acknowledgement that the current system of schooling imposes tremendous burden on our children.

This burden arises from an incoherent curriculum structure that is often dissociated from the personal and social milieu of children as also from the inadequate preparation of teachers who are unable to make connections with children and respond to their needs in imaginative ways. Teachers need to be creators of knowledge and thinking professionals. They need to be empowered to recognize and value what children learn from their home, social and cultural environment and to create opportunities for children to discover, learn and develop. The recommendations of the NCF 2005on school curriculum are built on this plank.

With this backdrop researcher developed computer multimedia package for enabling student teachers for constructivist classroom.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:- Department Of Education,Shivaji University,Kolhapur (Maharashtra)	ISSN 2349-638x Impact Factor 2.147

Objectives:

1. Development of Computer Multimedia Package for enabling student teachers for constructivist classroom.
2. To find out the effectiveness of Computer Multimedia Package for enabling student teachers for constructivist classroom.

Definition of the terms:

Development:

The act of defining, developing, evaluating and reconstructing the prepared Computer Multimedia and finding its usefulness, effectiveness with respect to enabling student-teachers for Constructivist Classroom.; is development of Computer Multimedia for this present study.

Computer Multimedia Package

It is a self contained component and convergence of text, pictures, PowerPoint slides, video and sound into a single form related to Constructivist approach comprising 11 modules.

Student-Teachers

Students who are learning to teach and have undertaken one year B. Ed. course in the College of Education affiliated to Shivaji University, Kolhapur (Maharashtra) and who are admitted for academic year 2011-12 for Marathi, Science and History subject as the teaching methodology.

Delimitations

1. The study is limited to those B. Ed .student teacher admitted in academic year 2011-12.
2. The study is limited to student teachers having Marathi, History and Science methodology.

Research Methodology:

Research Method:

In this paper researcher wants to find out the effectiveness of developed Computer Multimedia Package for enabling student teachers for Constructivist Classroom. Experimentation in this study claims computer Multimedia as an independent variable. It is manipulated to inquire its impact on Constructivist approach on Student Teachers.

Research Design:

Pre-test – Post-test single group Design has been used by researcher to determine the effectiveness of the developed Computer Multimedia Package.

Sampling

60 Student-teachers from One College of Education were selected from Marathi, History & Science Methods.

Research Tool for data Collection:

Three types of tools were used to measure the effect of training which is as follows:

1. Paper Pencil Tests to measure the level of acquisition of theoretical base of Constructivism.
2. Checklist to measure the level of acquisition of Planning for teaching with constructivist approach.

Page9

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

3. Concepts maps for measuring the quality of comprehension of Constructivism, Brain based teaching –learning, Collaborative and Constructivist teaching learning.

Research Procedure: The study was conducted in two phases Preparatory Phase and Experimental Phase.

The Preparatory Phase

The main purpose of the study was to develop Computer Multimedia Package which is in modular form. Seels & Glasgow model is selected for this package development. This model places more emphasis on the design of the learning environment rather than on the sequence of the learning.

It is a training package hence it is very Interactive, User friendly and Communicative. The Computer Multimedia consists of Text, PPT, Videos downloaded from You Tube, Interviews of Experts working in this area, Real Classroom shoots related to Constructivist and Co-operative learning teaching. The audio recording in Marathi mother tongue is attached to it.

I. **Searching Information, Identification & selection of appropriate Information:** With the help of review of related reference books, journals, websites, Experimental schools and expert's remark relevant information is selected.

II. **Editing and Organization of Information:** Editing involves summarizing, rewriting or reshaping the information.

III. **Evaluation and Revision:**This phase consists of i) Pilot Study, ii) Discussion of observations of pilot study.

Researcher has employed the Computer Multimedia package with the help Two Ph. D students who were doing their Ph.D. in Constructivism with the purpose of investigation of –

1. Comprehensiveness of terminology and instructions
2. Variables affecting experimentation
3. Time required for training.
4. Practicability of activities.

IV. **Modification in the Package**

The results of pilot study have been communicated with experts and probable measures for improvement were discussed and final form of Computer Multimedia package was prepared.

The Computer Multimedia Package was decided to develop in modules after reviewing the related literature and researches in each module there is a provision of Audio recording in Marathi Language, Videos, PPT, references and link related to theme of the module. These modules are structured as follows:

Table No. 1 Final Form of Module

Sr. No.	Number the Module	Name of the Module	Nature of Module
1	Module No. 1	Constructivism Concept and Meaning	Text, Audio and Videos
2	Module No. 2.	Structure and functions of Human Brain.	Text, PPT slides and Audio
3	Module No. 3	Brain based Learning	Text, PPT slides, Audio and

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- Department Of Education,Shivaji University,Kolhapur (Maharashtra) | ISSN 2349-638x Impact Factor 2.147 |

			Videos
4	Module No. 4	Psychological Perspectives of Constructivist Learning	Text, PPT slides and Audio
5	Module No. 5	Cooperative Learning based on constructivism	Text and Audio
6	Module No. 6	Planning for teaching for Constructivist Learning	Text and Audio
7	Module No. 7	Experts views on Constructivism	Text and Audio
8	Module No. 8	Language Lesson	Videos
9	Module No. 9	History Lesson	Videos
10	Module No. 10	Science Lesson	Videos
11	Module No. 11	Real Classroom Situations	Videos

Experimental Phase:

After preparing the final draft of the Computer Multimedia Package was ready for giving training to the target group of Student Teachers. Training was given to student Teachers related to Marathi, Science and History method of college of Education from Karad District.

Training was given for one month including one hour per day. Module wise training was conducted on target group.

Statistical Technique:

Response of student teachers in the form of average is considered as a descriptive statistics.

Data Analysis & Findings:

Comparative Nature of Response given by Marathi, Science and History Method teacher Trainees regarding Knowledge Construction of Pupils

Questions	Nature of Response	Marathi				Science				History			
		Total		Average		Total		Average		Total		Average	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
01	Process of Knowledge Construction	93	4.7	223	11	109	5.5	272	14	85	4.3	202	10
02	Abilities required for Knowledge Construction	95	4.8	185	9.3	113	5.7	181	9.1	71	3.6	153	7.7
03	Teacher Tasks for Knowledge Construction of Pupils	29	1.5	124	6.2	39	2	176	8.8	53	2.7	155	7.8
04	Change in	33	1.7	106	5.3	32	1.6	189	9.5	50	2.5	154	7.7

Page11

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

	Role of Teacher												
05	Change in Teaching Approach of Your Subject	15	0.8	160	8	18	0.9	203	10	68	3.4	195	9.8

Observation and Interpretation: It has been observed that:

1. Frequencies of the response regarding Process of Knowledge Construction found to be more of Science method teacher trainees than that of Marathi and History method teacher trainees in post test.
2. Frequencies of the response regarding abilities required for Knowledge Construction found to be more of Marathi method teacher trainees than that of Science and History method teacher trainees in post test.
3. Frequencies of the response regarding teacher tasks for Knowledge Construction of pupils found to be more of Science method teacher trainees than that of Marathi and History method teacher trainees in post test.
4. Frequencies of the response regarding Change in Role of Teacher found to be more of Science method teacher trainees than that of Marathi and History method teacher trainees in post test.
5. Frequencies of the response regarding change in teaching approach of your subject found to be more of Science method teacher trainees than that of Marathi and History method teacher trainees in post test

Conclusions

1. The Computer Multimedia Package (CMP) was found to be effective for Acquisition of Theoretical base of Constructivism among student teachers.
2. The Computer Multimedia Package (CMP) was found to be effective for Acquisition of Planning of teaching using Constructivist approach among student teachers.
3. The Computer Multimedia Package was found to be effective for enhancing the process of Knowledge Construction process and comprehending the concept of abilities required for Knowledge Construction among Marathi method student teachers.
4. The Computer Multimedia Package was found to be effective for understanding the teacher tasks and Change in role of teacher in Constructivist teaching among Marathi method student teachers.
5. The Computer Multimedia Package was found to be effective for enhancing the process of Knowledge Construction process and comprehending the abilities required for Knowledge Construction among Science method student teachers.
6. The Computer Multimedia Package was found to be effective for understanding the teacher tasks and Change in role of teacher in Constructivist teaching among Science method student teachers.
7. The Computer Multimedia Package was found to be effective for enhancing the process of Knowledge Construction process and comprehending the concept of abilities required for Knowledge Construction among History method student teachers.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

8. The Computer Multimedia Package was found to be effective for understanding the teacher tasks and Change in role of teacher in Constructivist teaching among History method student teachers.

9. The level of Comprehension of Process of Knowledge Construction and of Components of Knowledge Construction found to be higher in Science method student teachers than those of Marathi and History method student teachers in post test.

10. The level of Comprehension of abilities required for Knowledge Construction found to be higher in Marathi method student teacher than those of Science and History method student teacher in post test.

11. The level of Comprehension of teacher tasks for Knowledge Construction among pupils found to be higher in Science method student teachers than those of Marathi and History method student teachers in post test.

12. The level of Comprehension of Change in Role of Teacher in Constructivist teaching was found to be higher in Science method student teacher than those of Marathi and History method student teacher in post test.

13. The level of Comprehension of change in teaching approach of concerned subject was found to be higher of Science method student teachers than those of Marathi and History method student teachers in post test.

Thus it can be concluded that the developed Computer Multimedia Package (CMP) is effective for developing the acquisition of theoretical base of Constructivism, Planning activities required for teaching with Constructivist approach and also understanding the nature of changed teacher tasks and teacher roles in Constructivist Classroom.

References

Baker,E.,Mcgaw,B.,&Peterson,P.(Eds) (2007).Constructivism and Learning. International Encyclopaedia of Education.Retrived from svein.sjoberg@ils.uio.no.

Baviskar,Sandhya., Hartle, R,.& Whiteny, Tiffany.(2009).Essential criteria to characterize Constructivist teaching. International Journal of Science Education. Retrieved from http://www.eric.ed.gov.

Brown, G. S. (1975). The training of teachers for affective roles. In Ryan, K. (Eds.) Teacher education. Chicago : The University of Chicago Press.

Burke,Kay.(2010). The active mentor. United State of America: Corwin Press.

Dawson, K & Kovalchick, A.(2005). Encyclopedia of Education and Technology:Pentagon Press.

Fogarty, R.(2009).Brain Compatible Classroom. United State of America: Corwin Press

Gagnong, G & Collay, M. (2006).Constructivist Learning Design. United State of America: Corwin Press.

Headley, Linda & Kaagan,Stephen.(2010).Bringing your Learning Community to Life. United State of America:Corwin Press.

Kothari, C. R. (2004). Research methodology (2nd ed.). New Delhi : New Age International (P) Limited Publishers.

Liu, charlotte& mattews, Robert.(2005). Vygotsks philosophy: Constructivism and its criticism examined. International Education Journal.6(3), Retrived from http://jej.cjb.net.

Marzano, Robert & Kendall, John.(2008) Designing and Assesing Education Objectives. United State of America: Corwin Press.

Mills,J., Bonner,A.& Francis. K.C.(2006). The development of Constructivist grounded theory. International Journal of Qualitative methods, 5 (1), Retrived from http://www.ualberta.ca.

Novak, J. (1984). Learning How to Learn. Cambridge: Cambridge University Press.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

NCTE (2004). Curriculum framework for quality teacher education. New Delhi : NCTE.

Page,Marilyn & Marlowe, Bruce.(2005).Creating and sustaining the Constructivist
  Classroom. United State of America: Corwin Press.

Sattes,Beth & Walsh, Jackle.(2010). Leading through Quality Questioning. United State
   of America: Corwin Press.

Schroeder, M & Gabler, I. (2003). Constructivist Classroom for the Secondary classroom:
    engaged minds. United State of America : Pearson Education,Inc.

Shikalgar,S.M.(2011). Roadmap for learning a constructivist approach. New Delhi: Innovative Eductional methods.

Singh, Yogesh. (2003). Teaching Practice: Lesson Planning. New Delhi: APH Corporation

Singh, R. P. (2006). Training teachers: Problems and issues. New Delhi : Gyan Publishing House.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

IMPLEMENTATION OF CONSTRUCTIVIST PEDAGOGY ON PRIMARY AND SECONDARY SCHOOL LEVEL-A CRITICAL STUDY

Dr. Megha Vishram Gulavani

Principal,

Modern Education Society's,

College of Education, Vita

Mobile - 9422406287

Introduction :

Every Student creates knowledge based on his own experiences. To create accurate knowledge and to create it in proper direction the students should be given apt learning experiences, they should be given opportunities for doing actions, their participation in teaching learning process should be increased. This all is the responsibility of a teacher in Constructivist Pedagogy.

It is a common social grudge that student who are studying in a manner 'learning without understanding' would be tomorrow's immature citizens. Without understanding any information cannot be transformed to knowledge, and the information cannot be used in day to day life. Today it is expected that through Constructivist Pedagogy the student should be able to construct the knowledge in their own ways based on their experiences.

In Constructivist Pedagogy the role of teacher is of a facilitator. From the traditional role of a teacher, that of a knowledge provider, it is changed to a facilitator. The Constructivist Pedagogy is learning centered and not teaching center.

Constructivism:

Constructivism is basically a theory based on observation and scientific study about how people learn. It says that people construct their own understanding knowledge of the world, through experiencing things and reflecting on those experiences. When we encounter something new, we have to reconcile it with our previous ideas and experience, may be changing what we believe, or may be discarding the new information as irrelevant. To implement constructivist approach, teaching learning process must be changed.

The world constructivism is derived from a Latin word constrcre. From this word construct and the meaning is to arrange.

Constructivism is a theory of learning based on the idea that knowledge is constructed by the knower based on mental activity.

- Janseen (1991)

The Place of a Teacher :

The base of Constructivism is student. A student creates his own knowledge and for that he uses his previous experiences. As this is the basic principle of Constructivism the role of teacher changes. A teacher is expected here to create proper and essential atmosphere. For that he has to play the role of a guide, an assistant, an instructor. A teacher must understand the knowledge construction of the student and he has to do proper actions.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

The students create their own knowledge if provided them with proper facilities and opportunities. So the students create knowledge with their own experiences understanding and thinking. In this way only their knowledge becomes perfect.

It is a false fear that, 'If the students are going to create their own knowledge the role of teacher will be secondary'.   In fact a teacher as to play a very important dual role of facilitator and the man behind the curtain. If the teachers play this role actively then their place in the perception process of the students will be very vital.

Statement Of The Problem :

 Implementation of Constructivist Pedagogy on Primary and Secondary School Level-A Critical Study.

Definitions Of Terms And Phrases :

Primary and Secondary School

Standard Ist to 10th Classes as per National Policy of Education 1986.

Constructivist Pedagogy

The strategies, methods, technique use for communication in the class room as per the new trend of constructivism.

Need Of The Study :

The curriculum of primary and secondary school in Maharashtra is based on Constructivism. The teaching learning process in the classrooms is as per the constructivist Pedagogy. This study is aimed at finding out the difficulties and problems faced by the primary and secondary teachers while implementing the Constructivist Pedagogy.

Importance Of The Study :

The results of the study will enable the researcher to understand the difficulties and problems faced by the primary and secondary teachers while implementing the Constructivist Pedagogy and to find out solutions to them and will enable the researcher to make recommendations.

Objectives Of The Study :

To study the difficulties and problems faced by the primary and secondary teachers while implementing the Constructivist Pedagogy.

Scope Of The Study :

1) The implementation of Constructivist Pedagogy on primary and secondary school level will be dealt with in the present study.

2) The difficulties and problems faced by the primary and secondary teachers while implementing the Constructivist Pedagogy will be dealt with in the present study.

Delimitations of the study :

1) Present study is limited to Vita city only.

2) Present study is limited to primary and secondary school only.

3) Present study is limited to teaching only.

4) Present study is limited to 2015-16 year only.

Page16

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Research Methodology : For the present study survey method is used.

Tools :

For the present study data is collected using questionnaire.

Sampling Method :

For the present study all the primary and secondary school in vita city are selected and all the teachers are selected for the study.

Observations :

Sr. No.	Unit	Percentage
1	Understanding of Constructivism	34
2	Training of Constructivist Pedagogy	62
3	Proper Guidance through training	34
4	Understanding of Constructivist Pedagogy	34
5	Teaching as per Constructivist Pedagogy	91
6	Not teaching as per Constructivist Pedagogy	9
7	Teaching Planning as per Constructivist Pedagogy	56
8	Lesson Plan as per Constructivist Pedagogy	0
9	Evaluation method is proper as per Constructivist Pedagogy	71
10	Evaluation method is not proper as per Constructivist Pedagogy	29
11	Present arrangement of Class room is proper as per Constructivist Pedagogy	0
12	Present arrangement of Class room is not proper as per Constructivist Pedagogy	100
13	Teaching aids are available for teaching as per Constructivist Pedagogy	26
14	Teaching aids are not available for teaching as per Constructivist Pedagogy	74
15	Teaching aids are prepared by the teacher as per Constructivist Pedagogy	36
16	The present curriculum structure is proper as per Constructivist Pedagogy	92
17	The present curriculum structure improper as per Constructivist Pedagogy	8
18	Number of teachers available is sufficient Constructivist Pedagogy	0
19	Number of teachers available is not sufficient Constructivist Pedagogy	100

Discussion:

1) 66% of teachers have not understood concept of constructivism.
2) 62% teachers have got the training of constructivist pedagogy but out of them 66% teachers say that they didn't get proper guidance in the training.
3) Only 34 % teachers have the understanding of constructivist pedagogy.
4) 91 % teachers have written that they teach as per constructivist pedagogy but only 56% can do the planning of teaching according to the constructivist pedagogy and nobody prepare lesson plan according to constructivist pedagogy.
5) The teaching aids required for constructivist pedagogy is not available in 74% school.
6) No financial provision is there for the teaching aids or other required material.
7) Teachers are not trained for preparing teaching aids.
8) The class room arrangement is not proper for keeping the teaching aids.
9) The class room arrangement is not proper for teaching according to the constructivist pedagogy.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

10) The classrooms are too crowded. The number of students in a classroom should be restricted to 30.

11) The required number of teachers are not available for teaching as per constructivist pedagogy.

12) The content in the textbook is vast and time for teaching is less so to give opportunity to each student, to assist each student and creation of knowledge by each student these steps cannot be followed as per the constructivist pedagogy.

13) As per the constructivist pedagogy the marks given for the written exam are less. And the marks given for various programmes, homework, orals, assignment are more and they are also given more to students. So though a student secures less marks in the written examination they go to the higher class with a better grade.

14) A teacher has to divided the marks in six sections and these marks are to be recorded four times (on subject list, cumulative mark sheet, result sheet and on progress card) . The daily record of the student is also to be kept in three records. As the number of students in the class is very high the teacher has to spend a lot of time on writing and keeping the record. So he doesn't get required time for giving learning experiences to the student as per the constructivist pedagogy.

Results :

1) The teacher difficulties and problems faced by the primary and secondary teachers while implementing the Constructivist Pedagogy.

2) All the teachers should have proper understanding of the constructivism.

3) All the teachers should have proper understanding of the constructivist pedagogy.

4) All the teachers should have proper training of the constructivist pedagogy

5) All the teachers should be given proper guidance regarding lesson plan, teaching planning, use of proper evaluation method, preparation of teaching aids as per constructivist pedagogy.

6) Proper arrangement of the class rooms should be made.

7) Proper financial provision for teaching aids should be done.

8) The content in the text book should be limited.

9) Number of students in the class room should be limited.

10) Number of teachers per class should be increased.

Suggestions :

1) All the teachers should be given proper training of the constructivist pedagogy

2) All the teachers should be given proper guidance regarding lesson plan, teaching planning, use of proper evaluation method, preparation of teaching aids as per constructivist pedagogy.

3) Proper arrangement of the class rooms should be made.

4) Proper financial provision for teaching aids should be done.

5) The content in the text book should be limited.

6) Number of students in the class room should be limited.

7) Number of teachers per class should be increased.

References :

Cohen, D. (1987), The use of concept maps to represent unique thought processes; Toward more meaningful learning journal of curriculum and supervision.2(3), 285-289

Page18

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal) website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749) Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Gray, Audery (1997), A Constructivist Teaching and Learning Retrieved, September 26, 2001, from file : 11 on document % 20 and % 20 settings/ abc/Desktop/New%20 fold or http://so skschoolboards.co. /research/instruction /97-07, htm.

Griffin, C., Malone, L., and Kameenui, E. (1995), Effects of graphic organizer instruction on fifth grade students journal of Educational Researh, 89(2), 98-107

Novak, J.D., & Gowin, D.B., 1984, Learning How to Learn, Cambridge : Cambridge University Press

करंदीकर, सुमन व पटवर्धन, अनिता २०००, ज्ञानाचा रचयिता माझा मीच, पुणे : आपणच

पानसे, रमेश २०१०, रचनावादी शिक्षण, सातारा

पारसनीस, हेमलता २०१०,मार्च, ज्ञानरचनावाद, शिक्षण संक्रमण, १५—४७

महाराष्ट्र राज्य पाठपुस्तक निर्मिती व अभ्यासक्रम संशोधन मंडळ २०११, सामान्य विज्ञान, पुणे : एस.सी.ई.आर.टी.

महाराष्ट्र राज्य शैक्षणिक संशोधन व प्रशिक्षण परिषद २००८, राष्ट्रीय अभ्यासक्रम आराखडा २००५, पुणे : एस.सी.ई. आर.टी.

सप्रे, एन.आर., पाटील, पी., पाटील, जे. २००९, गतिमान शिक्षणासाठी विचारप्रवाह, कोल्हापूर : फडके प्रकाशन

सप्रे, एन.आर. २०१० नोव्हें.डिसें., मेंदूआधारित शिक्षण—एक आव्हान, भारतीय शिक्षण, २२—२६

STUDY OF EFFECTIVENESS OF CONSTRUCTIVISM AT HIGHER PRIMARY LEVEL

Dr. Chetna Pralhad Sonkamble
Associate Professor,
Dept. of education,
Shivaji University, Kolhapur

Prajakta Ramchandra Jathar
Research Student,
Dept. of education,
Shivaji University, Kolhapur

1. Introduction:

In past day's teaching–learning process was teacher oriented. They teach & students learn. But now a day's role of teacher has been changed. He becomes a Guide for students. Students have to learn with the help of their previous knowledge. They should try theirselves to get knowledge. Like a plant teacher should guard them should give only direction to them. Now a day's a word come i.e. constructivism. Constructivismto basically a theory based on observation &scientific study about how people learn. It says that people construct their own understanding & knowledge of the world through experiencing things & reflecting on those experiences.Constructivism is a theory of knowledge that argues that humans generate knowledge & meaning from an interaction between their experiences & their ideas. It has influenced a number of disciplines including psychology, sociology, education & the history of science.So, Researcher decide to study effectiveness of constructivism at higher primary level.

2. Objectives:

1. To give the pre-test for students.
2. To guide the students with the help constructivism.
3. To give post-test for students.
4. To determine the effectiveness of constructivism.

3. Assumption:

1. We find less interest in students in mathematics.
2. Students get low score of marks in mathematics.
3. Students like activity based education.
4. Students like works in group.

4. Hypotheses:

4-1] Research hypothesis:
Students score more marks in mathematics test.
4-2] Null hypothesis:
There will be no difference is score of marks of students.

5. Need & Importance of Research:

Students have low interest in mathematics. There is need of such research to increase Studentsinterest. It is activity based so students get interest & learn with the help of each other so group interest will also increase so this research is needy.

If students got each & every concept of mathematics clearly it will be helpful for them in future. In future life they will be successful in day to day life.So this research is important.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

6. Research Method:

For this research I have taken practical research method.

7. Sampling:

For this research I selected z. p. high school of Walwad Tal. Bhoom, Dist. Osmanabad. Also selected 8th class student from school.

8. Tools for research:

For this research I have selected pre-test & post test as tool.

9. Procedure of research:

i) First I gave a pre-test to 8[th]standard students.

ii) Then with the help of marks I made their two groups.

iii) First group named A of 14 students & Second B of 14 students.

iv) I taught group B with help of scale, chalk, instruments of compass-box.

v) By drawing figures of cylinder & cone I taught them how to create formula for their volumes.

vi)Then I taught group A with help of rectangular drawing sheet.

vii) I told them to fold & make a cylinder from that.

viii) Studentsquickly understood that the upper & lower side of cylinder is circular & when we opened it the circumference of circle became length of rectangular sheet &height of cylinder became breadth.

ix) Then I helped them to make formulas i.e..

volume of cylinder = area of base (circle)

x height

volume of cylinder = πr^2 h

x) To show the relation between volume of cylinder & cone I take cylinder& cone with same radii & height. Also takesome rice.

xi) Then I told them to fill cone with rice & then take it into cylinder.

Student did this activity & told me that 3 cone rice = 1 cylinder rice thats why they understood that the volume of cylinder is 3 times volume of cone.

3 x volume of cone = volume of cylinder

3 x volume of cone = πr^2 h

volume of cone = $\frac{1}{3}\pi r^2$ h

xii) Like this I taught them other formulas

xiii) Then I take post-test.

10. Interpretation & analysis of Data:

For analysis I have taken men standar Deviation & triticale ration

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Post test	Group A	Group B
Men	M_1= 16.21	M_2 = 10.5
S.D.	σ_1= 2.05	σ_2 = 2.97
No of Stu	N_1 = 14	N_2 = 14

D = 5.71 σ_D = 0.96

C.R. = $\frac{D}{\sigma D}$ = $\frac{5.71}{0.96}$ = 5.95

For level 0.01   C.R. is 2.58

but it is more than 2.58 so we have to reject Null hypothesis &should accept research hypothesis.

11. Conclusion:

Form critical ratio we conclude that we get difference in scores of students because of constructivism guidance

Reference books:

1. Best,& Khan,(2006). Research in education (10[th]ed.).New Delhi : PHI Learning Pvt. Ltd.
2. Dr.Bhintade,V.R,(2005). ShaikshanikSanshodhanPadhati. Pune :NutanPrakashan.
3. Kadam, C.P,(1999). ShaikshanikSankhyashashtr(2nd ed.). Pune :NutanPrakashan.
4. Mule,R.S,&Umathe,V.T,(1998).ShaikshanikSanshodhanachiMultatvey(3[rd]ed.).Nagpur:Maharashtra Vidyapith Granth Nirmiti Mandal.
5. Namdev Mali, &PratibhaBharade, Rachanavad. Satara :MaitrPrakashan.
6. www.constructivism by net.

Page22

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal) website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749) Email id:- aiirjpramod@gmail.com

AWARENESS AMONG NINTH STANDZRD SCIENCE TEARCHERS ON THEIR ROLES IN CONSTRUCTIVIST CLASSROOM

Dr. (Ms) Rupali Uttam Sankpal

Co-Ordinator Mba & M. Sc (Mathematics)

Center For Distance Education

Shivaji University Kolhapur (Ms)

E-Mail: Sankpal23@Gmail.Com

Ms. Nirmal Mayuri Ashok

Assistant Teacher,

S.D.G. English Medium School,

Chiplun (Ms)

Abstract:

Today's Society is knowledge society and in this society most people are involved in knowledge related occupations and transactions. Therefore for becoming part of this society it is required that everyone have to construct their own knowledge. Therefore constructivist approach is adopted at school level and now teachers responsibility is with the help of this approach tomorrows competent citizens should be shaped.

In constructivist classroom teacher provides experiences and learning environment where students can construct their own knowledge. This classroom scenario is different from the traditional classroom. However at school level constructivist approach is adopted and according to that teachers are equipped with training related to constructivist pedagogy. Number of dimensions regarding constructivist pedagogy are explored to teacher during this training programmes. On this background present research is undertaken to know awareness among ninth standard Science Teachers on their roles in constructivism.

Hence present study is undertaken with three objectives, these are to identify the roles of ninth standard science teachers in constructivist classroom, to study awareness among ninth standard science teachers on their roles in constructivist classroom and to make appropriate suggestions on the basis of the study to the concerned. For fulfilling these objectives survey method and purposive sampling technique was adopted. For fulfilling first objective review of related literature is undertaken and list of identified roles was prepared and it was validated with the help of five experts and through it 11 roles required by Science teachers are identified. For fulfilling second objective of the questionnaire tool was used and data is collected and conclusions are drawn on the basis of it suggestions are given to the concerned. Thus this paper reveals awareness among ninth standard science teachers on their roles in constructivist classroom.

Keyword- Teachers role in constructivism, Science teacher, Constructivism classroom.

Introduction

Today's Society is knowledge society and in this society most people are involved in knowledge related occupations and transactions. Therefore for becoming part of this society it is required that everyone have to construct their own knowledge. Therefore constructivist approach is adopted at school level and now teachers responsibility is with the help of this approach tomorrows competent citizens should be shaped.

In constructivist classroom teacher provides experiences and learning environment where students can construct their own knowledge. This classroom scenario is different from the traditional classroom. Figure No.1 Shows difference between traditional classroom and constructivist classroom.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Figure No.1 Difference between Traditional Classroom and Constructivist Classroom.

Traditional Classroom	Constructivist Classroom
Emphasis on Bloom's Taxonomy	Emphasis on Bloom's Revised Taxonomy
One size fits all	Tailored instructions
Acquisition of facts	Facts + conceptual framework
Isolated facts	Organized conceptual schemas
Transmission of Information	Construction of Knowledge
Teacher Centered	Student Centered
Fixed role of a teacher	Different roles of teacher
Fixed classrooms	Blended Leaning, Flipped Classroom
Single location	Exposure of different spaces and places
Summative assessment	Summative and formative assessment

However at school level constructivist approach is adopted and according to that teachers are equipped with training related to constructivism pedagogy. Number of dimensions regarding constructivist pedagogy are explored to teacher during teacher training programmes. On this background present research is undertaken to know awareness among ninth standard Science Teachers on their roles in constructivist classroom.

In the context of present research awareness means the state or level of consciousness of teachers about science teachers roles in constructivist classroom. However for studying the awareness among Science teachers about their roles present research is undertaken with three objectives these are :

Objectives Of The Study

Objectives of the present study are as follows:

1. To identify the roles of ninth standard science teachers in constructivist classroom.
2. To study awareness among ninth standard science teachers on their roles in constructivist classroom.
3. To make appropriate suggestions on the basis of the study to the concerned

Research Procedure

For fulfilling the objectives of the study survey method was used. The objective wise research procedure is discussed as follows. The first objective of the study is

Objective No. 1: To identify the roles of ninth standard science teachers in constructivist classroom.

For fulfilling first objective review of related literature is undertaken i.e. Smith B. O. (1969), Piaget Development Theory (2002), Sharma S. (2006), Cakir M. (2008), Gunel Murat (2008), Garbet Dawn (2011), Wikipedia the Free Encyclopedia (2012) from this review, list regarding roles required for the science teachers in constructivist classroom was prepared and it was validated with the help of five experts and through it 11 roles required by Science teachers are identified. These roles are facilitator, guide, problem solver, motivator, presenter, manager, couch, scaffolder, collaborator, leader, negotiator, organizer, reflector, evaluator, researcher etc.

Page24

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Objective No. 2: To study awareness among ninth standard science teachers on their roles in constructivist classroom.

For fulfilling second objective of the study questionnaire tool was used which comprises questions regarding 11 roles required by the science teachers with help of questionnaire data is collected from 25 teachers which were purposively selected to study awareness on science teachers roles in constructivist classroom. This data is analyzed using percentage statistical technique and its results are shown in Figure No. 1

Result

Awarness Among Ninth Standard Science Teachers on their Roles in Constructivist Classroom

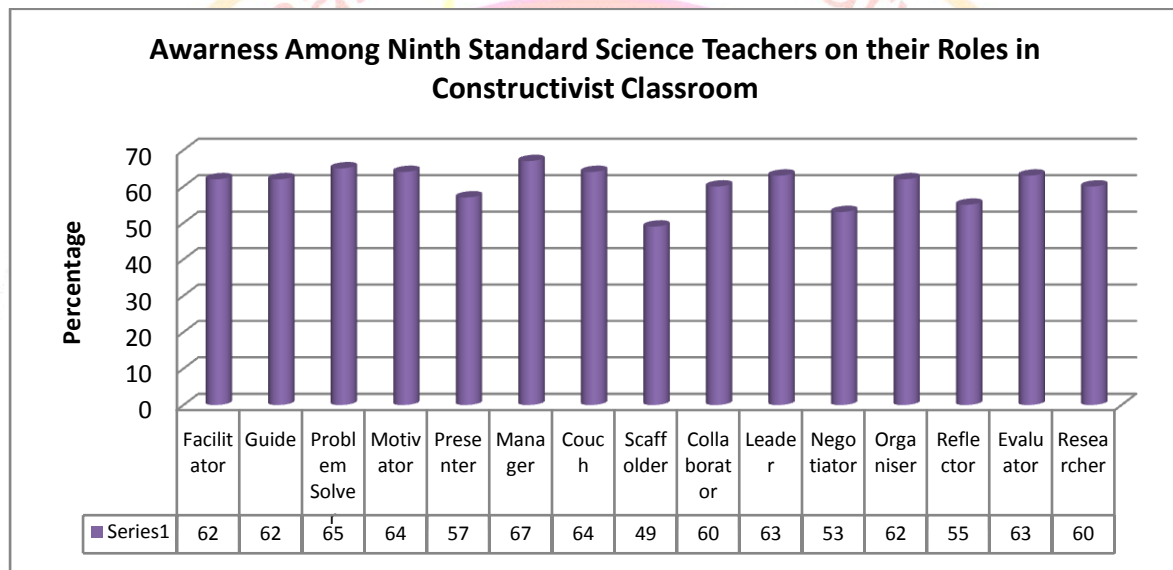|	Facilitator	Guide	Problem Solver	Motivator	Presenter	Manager	Couch	Scaffolder	Collaborator	Leader	Negotiator	Organiser	Reflector	Evaluator	Researcher
■ Series1	62	62	65	64	57	67	64	49	60	63	53	62	55	63	60

Figure No. 2: Awareness Among Ninth Standard Science Teachers on Their Roles in Constructivist Classroom

From Figure No. 2 it seems that the ninth standard science teachers have high level awareness on Facilitator, Guide, Problem Solver, Manager, Coach, Collaborator, Leader, Organizer and Evaluator etc. roles in constructivist classroom. However these teachers are aware at average level on Presenter, Scaffolder, Negotiator, Reflector, Researcher etc. roles.

Objective No. 3: To make appropriate suggestions on the basis of the study to the Concerned

From Figure No.1 it seems that science teachers have medium level awareness on their roles in constructivist classroom. Therefore there is yet scope to increase awareness among these teachers. Thus on the basis of these results following suggestions are given and objective no.3 i.e. to make appropriate suggestions on the basis of the study to the concerned is fulfilled.

Teachers have conceptual awareness about their roles in constructivist classroom. However they don't have practical exposure of conducting their roles in constructivist classroom. Hence Teacher Education Programme (TEP) pre-service and TEP - in service should provide exposure to the science teachers regarding it.. Text Book Bureaus should organize orientation programme regarding roles of teachers in implementing the syllabus as well as the textbooks.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Discussion

Thus the present research paper reveals awareness among Science Teachers on their roles in constructivist classroom. The identified 11 roles are not expected from teachers to be performed at the same time. These roles should be expected to be performed by the teachers as per classroom environment, considering students needs, as well as, as per the content. These roles are not only useful for the science teachers but also these are useful for other subjects teachers too.

References

Asynchronous learning networks magazine (1997).1(1).Issue. Retrieved, Oct. 1,2011,Fromhttp://www.ain.org/alnweb/managine/megaissue/html

Cakir, M. (2008). Constructivist approaches to learning in science and their implication for science pedagogy: A literature review. International journal of environmental and science education. 3 (4). 183-206. Retrieved, Oct. 28, 2012. Fromhttp://www.ijese.com

Garbett, Dawn. (2011).Australian Journal of Teacher Education. Retrieved, Sept, 17, 2012. From http://www.eric.ed.gov

Gunel, Murat. (2008). Teachers and Teaching Theory and practice. Retrieved, Sept, 17, 2012.From http://www.eric.ed.gov

Piaget development theory. (2002).Cognitive constructivism. Retrieved, Oct, 1, 2012.Fromhttp://pdts.us.edu/srmehall/theory/congnitive.html

Sharma, S. (2006). Constructivist approaches to teaching and learning, New Delhi: National Council of Educational Researching and Training.

Smith, B. O. (1996). Theory of Teaching. Retrieved, Oct, 1, 2012.From http://slidesha.re.net/competents 2011

Wikipedia the free encyclopaedia.(2012). Constructivism learning theory. Retrieved, Oct, 1, 2012. From http://enwikipedia.org

Wikipedia the free encyclopaedia. (2014). Facilitator. Retrieved from February 24,2014 from http://enwikipedia.org

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

ONSTRUCTIVIST APPROACH FOR INCLUSIVE EDUCATION

Swati Pandurang Patil[a]

Assitamt Teacher,

A.G. Primary School,

Khasbag, Kolhapur.India-416012

swatiptl856@gmail.com Mob.9850932270

Prof. Dr. Pratibha S. Patankar[b]

Professor & Head,

Department of Education,

Shivaji University, Kolhapur.

pratibhaspatankar@gmail.com Mo. +91 9960192103

Abstract

Inclusion is a paradigm that has its roots in social justice. This article focuses on constructivist approach for inclusive classroom. Article analyses Vygotsky's social constructivist view with respect to disability. Teaching in inclusive classroom is one of the difficult tasks for teacher. Aim of this article is how we can use Constructivist approach for inclusive classroom? And how we can give equal opportunity to children with special needs through constructivism? Article also explains some strategies used in Inclusive classroom. Constructivism also includes activity based learning. Therefore article explains activity based learning for children with special needs and curriculum adaptations for children with special needs in constructivism.

**Keywords****:** Constructivism, Inclusive Education, Vygotsky, Children with Special Needs, Disability.

Introduction

An inclusive classroom deals with heterogeneous group of students learning together. Students in this group differ in culture, communication, learning style, preferences and physical divers' ability. Students those have physically divers' ability, previously labeled, excluded or educated in separate setting are accepted into the general schools without conditional performance, expectations or arbitrary pre-requisite skills. General school provides specialized services and instructions for these students.

For increasing frequency and success of education, students with mild disabilities are being included in general schools. However, teaching children with special needs and normal peers together is nothing but one of the difficult task.

Education for all is nothing but one developmental stage in educational field in 21st century. The Right to Education is basic human right. In school students met with their various requirements. Schools are cultural institutions where children learn the languages, history and culture of their respective societies, acquire various social skills and self confidence, broaden their horizons and address issues as full and active citizens.

When children with and without disabilities participate and learn together in the same classes called as Inclusive Education. For its success, Inclusive Education needs:-

1. Adequate supports and services for the student.
2. Well designed individualized education programs.
3. Professional development for all teachers involved, general and special educators alike.
4. Time for teachers to plan, meet, create and evaluate the students together.
5. Reduced class size based on the severity of the students needs.
6. Professional skill development in the areas of cooperative learning, peer tutoring, adaptive curriculum.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

7. Collaboration between parents or guardians, teachers or para educators, specialists, administration and outside agencies.

8. Sufficient funding so that schools will be able to develop programs for students based on their needs instead of the availability of funding.

As we know that in Inclusive classroom there are heterogeneous students. If we use constructivist approach in teaching – learning process in heterogeneous class it will be more effective. Constructivism is a learning theory based on psychology which explains how people might acquire knowledge and learn. This theory tells us how learning happens? In constructivism teacher plays a role of instructor and facilitator.

Questioning, observing and developing are skills in constructivism. In constructivist classroom teacher act as facilitator who achieve a balance of new and unfamiliar activities.

The essential core of constructivism is that learners actively construct their own knowledge and meaning from their experiences. Learners enact active role in a personal creation of knowledge. The importance of experience (both individual and social) in this knowledge creation process and the realization that the knowledge created will vary in its degree of validity as an accurate representation of reality.

In constructivist approach teacher presents any concept to students holistically as opposed to fragmenting a concept into sequential steps or skills. Thus, students are exposed to and involved with more complete and complex concept without having to demonstrate an arbitrary or unrelated set of prerequisite academic skills. When we see that concept entirely, learning essential skills or parts of the whole can be more meaningful.

Constructivism broadly divided into three types:-

Constructivism ⟶
- Cognitive Constructivism
- Radical Constructivism
- Social Constructivism
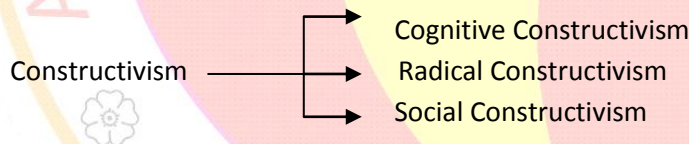
Fig. No.1 Types of Constructivism

1. Cognitive Constructivism

This type is associated with information processing and its reliance on the component processes of cognition. It emphasizes the knowledge acquisition in an adaptive process and results from active cognizing by the individual learner.

2. Radical Constructivism

Radical constructivism tents to knowledge acquisition is an adaptive process that results from active cognizing by the individual learner, rendering an experientially based mind, not a mind that reflects some external reality.

3. Social Constructivism

Social constructivism lies between the transmission of knowable reality of the cognitive constructivism and the construction of a personal and coherent reality of the radical constructivism.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Basic purpose of social constructivism is an organization in the United Kingdom advocating for the rights of people with physical disabilities. Human development is a socio-genetic process carried out in social activities. Education leads development which is the result of social learning through the internalization of culture and social relationship. For development of children with special needs learning of children with special needs in social constructivist approach is very necessary. So, Vygotsky develop socio-cultural theory for children with special needs.

Socio-cultural theory of Vygotsky and Inclusion:-

For the quality of education and social life for children with special needs Inclusion is very necessary. Following theoretical framework of inclusion, within the theory of Vygotsky explains emerging social constructivist perspective.

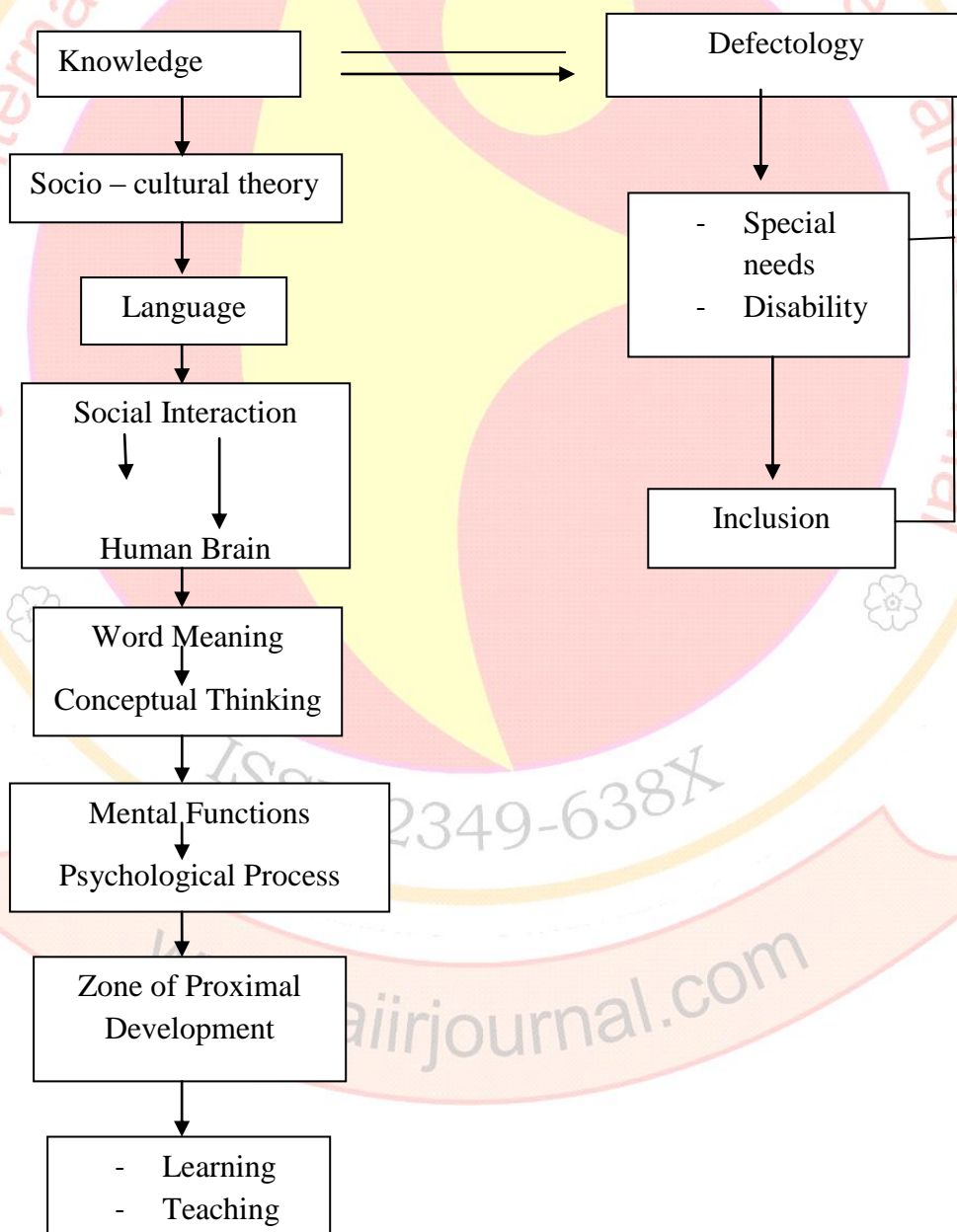**Fig. No. 2 Interrelationship of Socio-cultural theory and Inclusive Classroom in the light of Vygotsky's Psychology and Defectology.**

Page29

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal) website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749) Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

(D. Kobal Grum – Concept of inclusion on the selection of Vygotskian socio-cultural theory and neuropsychology.)

This figure indicates Vygotsky's view, interrelationship of socio-cultural theory (Psychology) and defectology. Vygotsky's theory explains lots of things but we will focus on 'Defectology.'

Defectology theory is based on the idea that human development is the process of a child mastering their experiences in their social environment. Vygotsky argued that 'defects' should not be perceived as abnormality, but need to be brought into social context. He criticized special education as a combination of low expectations and diluted curriculum and he challenged all educators to have a 'positive differential approach' of identifying the children's strength not their disability.

A founding principle of inclusion is to give children with special needs equal opportunities to participate fully in everyday life activities and in regular education classroom with normal peers. Inclusion can provide improvement for the quality of education and social life for children with special needs. This Vygotsky's theory explains social constructivist perspective that explains the main principles of inclusion.

Constructivist teaching and learning processes in Inclusive classroom must be in following ways. Main assumption of constructivist approach is each person has previous knowledge and person is capable for constructing knowledge. Teacher expects that all students will learn; acknowledge that learning will most likely take place in different ways. Teacher must use multiple teaching methods and strategies to assist students, to demonstrate their knowledge.

'Knowledge is socially and culturally mediated' it is main principle of constructivism. Therefore collaboration is very important. Interactive experiences in collaboration establish the opportunity for children with special needs to observe the thinking and problem solving processes of peers.

Because of to create a context for learning, in Inclusive setting lessons are designed as open ended and have built in flexibility to allow for individual accommodation. So that, students enters the setting with a different level of understanding and with different personal strategies for negotiating the learning experiences. Students' suppositions and viewpoints shape the sequence of curriculum. Thus, this approach fosters a dynamic and changeable atmosphere.

It is very necessary that learning experiences should be activity based or based on various experiences in constructivism. Activity based learning develops discovery skill, movement, interactions with the environment, manipulation of materials or variables, using reading, writing and communication skills in students. This thing results in planning, self-management, group processing skills and critical thinking. If skills are presented in a passive mode in classrooms then children with special needs are unable to learn, retain and apply knowledge.

Meaningful activity allows children with special needs to demonstrate their knowledge or skills in ways that may not be evident or elicited during conventional learning. In experiential lessons there is use of real life activities or material. It results in decrease in need to generalize and transfer skills from one setting to another. Through the various activities significant factors are remembered and applied. With the help of process of remembering and visualizing the activity children with special needs grasp and retain the concept. Activity based learning provide an opportunity to use school environments as well as instructions which takes place in community. That means it provide an opportunity to use a variety of environments where learning can take place. It results in acquiring skills necessary for lifelong functioning.

For effective teaching-learning process in Inclusive classroom it is very necessary that curriculum must be child centered. As Inclusive classroom have heterogeneous nature, curriculum must be multilevel that means curriculum will have multilevel curricular goals. Flexible, multilevel or student

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

specific learning outcomes allow educators and parents to define individualized curricular goals that are based upon the learner's unique needs, skills, interests and abilities.

For effective implementation of constructivism in inclusive classroom we can use following strategies:-

1. Using various games in teaching learning process.
2. Involving students in solving problems.
3. Use of various songs, stories, other reference books for teaching learning.
4. Openly dealing with individual differences by discussion.
5. Assigning classroom jobs.
6. Teaching students to look for ways to help each other.
7. Use of various sources for children with special needs.
    E.g. Utilizing physical therapy equipment such as standing frames, so students who typically use wheelchairs can stand when the other students are standing and more actively participate in activities.
8. Encouraging students to take the role of teacher and deliver instructions. E.g. read a portion of a book to a student with severe disabilities.
9. While teaching teacher should focus on the strength of a children with special needs. So he can arrange appropriate activity according to strength.
10. Create classroom checklists.
11. Take break according to need.
12. Create an area for children to calm down.
13. Form appropriate groups of students which contain all types of students.
14. Create a self and welcoming environment in school.
15. Set ground rule and stick with them.
16. Establish short term goals.
17. Design a multi-faced curriculum.
18. Clustering students across classes by perceived 'special need and ability grouping for instructions within a class.
19. Individual adaptations for students for whom the existing curriculum is either too challenging or too easy.
20. Instructions designed to have students work at different levels in different groups and on different tasks in the classroom.
21. Designing instructions so that students may function at multiple levels of ability, engaging in authentic learning, receiving support, yet learning in heterogeneous groups and situations.

In this way Vygotsky introduced new method of teaching- learning called as constructivism. This theory focuses on children with special needs also. This paradigm is practice oriented. This is a unique vision for future models of inclusive education. Constructivism creates a positive approach and implies a favorable view in children with special needs. The concept of inclusion requires studies of internalization of external cultural activities into internal processes via psychological tools and medicated learning relation to high and low incidence ability.

Page31

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal) website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749) Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:-	ISSN 2349-638x
Department Of Education,Shivaji University,Kolhapur (Maharashtra)	Impact Factor 2.147

References

1) Armstrong, Thomas (1995). Multiple Intelligences in the Classroom.
2) D. Kobal Grum – Concept of Inclusion on the Selection of Vygotskian Socio-Cultural Theory and Neuropsychology.
3) Diana Tsokova, Jane Tarr (2012). Diverse Perspectives on Inclusive School Communities.
4) Friend, M. & Bursick, W. (1999). Including Students with Special Needs: A Practical Guide for Classroom Teachers.
5) Lissa A. Power-deFur, Fred P. Orelove (1997) Inclusive Education: Practical Implementation of the Least Restrictive.
6) Pearce, W. B. (1995). A Sailing Guide for Social Constructionist. Social Approaches to Communication.

THINKING PROCESSES FOR KNOWLEDGE CONSTRUCTION: AN ANALYSIS OF OBJECTIVES IN CURRICULUM AT ELEMENTARY LEVEL

Dr. (Ms.) Neelima Ravindra Sapre

Assistant Professor,

Department of Education,

ShivajiUniversity,Kolhapur

Mobile - 9158345892

neelima_sapre@yahoo.com

Sushama Anandrao Konduskar

Junior Research Fellow,

Department of Education,

ShivajiUniversity,Kolhapur

Mobile - 8275030619

sushamakonduskar@gmail.com

Abstract:

Constructivism is a revolutionary thought, which has given new vision to look towards learning and knowledge. It redefined learning as 'knowledge construction.' Thinking Processes (TPs) play key role in construction of knowledge. Educational reports and frameworks advocate inculcation of TPs in pupils; while researches suggest to infuse TPs in curriculum. On this backdrop researchers had certain questions in mind; whether TPs are embedded in the objectives of Primary Education Curriculum 2012 of Maharashtra State, do cognitive processes suggested by 'Revised Bloom's Taxonomy' comprises all TPs reflected in the same Curriculum and do any particular types of TPsreflect in the particular subject.

In this paper researchers have relocated component 'process' in the model of knowledge production with identification of TPs for knowledge construction by review of researches and literature; to analyze the objectives stated in Primary Education Curriculum 2012 of the subjects Marathi (First Language), English (Third Language), Mathematics, Work Experience, Art Education and Physical Education of Maharashtra State to find out TPs reflected in it. However the learning indicators of only Environmental Sciences are given in the curriculum. Thus for this subject given indicators are analyzed as they are more concrete compared to general objectives

The three steps of study- review, enlisting of TPs and analysis of objectives are carried out simultaneously.

Key Words: Thinking Processes, Knowledge Construction, Analysis of Objectives, Elementary Level, Curriculum

Introduction:

Constructivism is a revolutionary thought, which has given new vision to look towards learning and knowledge. It changed the prior beliefs of knowledge from static to dynamic, rigid to fluid, conservative to liberal and passive trapped in hands of authority to active in each learner. In past, learning was defined as behavioral change. But human-being possesses aunique brain. It is armed with cognitive capabilities due to which human can think. Ability of thinking differentiates mankind from other animals and hence human learning is not behavioristic but it is cognitive phenomenon. Constructivism redefined learning as 'knowledge construction' and hence learning is notmere acquisition of knowledge. Thus knowledge is not something transferred by teacher and received passively by student but it is actively constructed by each learner.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Knowledge Construction: If knowledge is constructed then what are the building blocks of it? What is knowledge itself? The answers of these questions are given by DIKW hierarchy which islargely accepted as a model for showing taxonomical relationship in Data-Information- Knowledge and Wisdom.Sapre, Patil P., and Patil J. (2009, p.73) have added 'process' as one more element in it above 'information' in the context of knowledge construction to form a diagram as below:
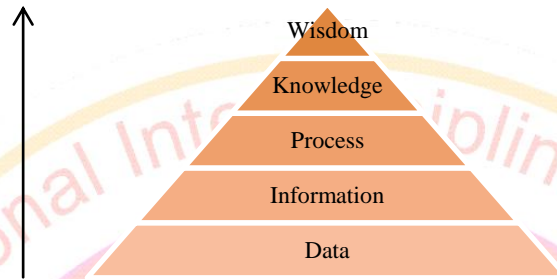

Figure 1: Production of the Knowledge

For this study the model is little adapted with relocation of process dimension which contains many thinking processes (TPs) shown by arrows. These TPs lead to knowledge construction. Present study is undertaken to find out the TPs which are essential for knowledge construction.
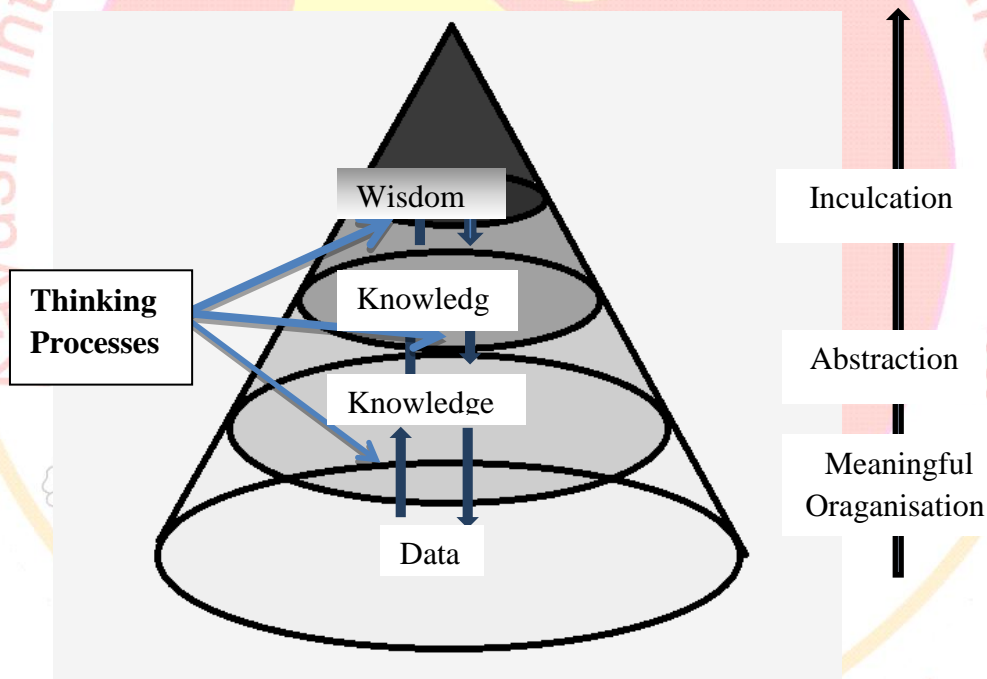
Figure 2: Processing in Knowledge Construction

TPsmeaningfully organize the data to form information. Information is again processed cognitively and meaningfully linked after reflection to abstract knowledge from it. Inculcation of knowledge within self develops wisdom within self. Some studies suggest further levels of hierarchy also. However here researchers focus on TPs enlisted for knowledge construction.

NCF (2005) underlines the role of the education as a mean (or a tool) for development of TPs; which states- 'Making meaning and developing the capacity for abstract thinking, reflection and work are the most important aspects of learning (p. 15)' Learning is integral part of life. 'If thinking is how we make sense of experience then helping our children to become better thinkers will help them to get more out of learning and more out of life' (Fisher, R. 2008). Teach your students to think….And you'll teach them to succeed (Edward De Bono, 1991), (as cited in Assaf, M.A. 2009).Good teachers seek to help students

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

acquire thinking skills that relate to the content of the lesson and, if possible, extend beyond it (Bob Kizlik 2014). SCF (2010, p. 41) states learning processes should make student thoughtful and active. Failure of behavioristic theories of cognition was rejection of the role of representation in animal &human thinking (Eliasmith, 1996). Hence, it can be concluded as learning is a cognitive activity aims to develop thinking.

Thinking

Thinking takes place as one goes through processes of discovering a way of rearranging things in a pattern that satisfies certain criteria (Trow, 1970, p. 328). It is a cognitive process and operates on cognitive representation of information. Thought or thinking is a mental process which allows beings to model the world, and so to deal with it effectively according to their goals, plans, ends and desires. Concepts akin to thought are sentience, consciousness, idea, and imagination. (*en.wikipedia.org/wiki/Thinking*) (as cited in Bond, 2011). Thinking is a cognitive activity which is abstract in nature essential for transformation of data in more meaningful forms to get organized in higher levels;so as to be more useful.

Thinking Processes (TPs)

A thinking process is a relatively complex sequence of thinking skills (Kizlik, 2014). Process means that time is needed (Trow, 1970, p. 328.) The word 'process' suggests that it is a state which continues for some time. A process is always made up of a number of parts or steps (Thorndike, Cunningham, Thorndike, & Hagen, 1991, p. 272). While moving from lower order thinking to higher one, thinking becomes more abstract. Higher order thinking is based on all the lower levels of thinking. Bloom's revised Taxonomy exhibits sequence of 19 processes from remembering to creating.David Mosely et al. (2005) in 'Frameworks for Thinking' have evaluated models and frameworks for thinking and stated, 'for instructional design purposes, we have highlighted Anderson and Krathwohl's revision (2001) of Bloom's taxonomy (1956).' (p. 303).But watertight compartments can't be made in the levels of processes. Lewis, A., & Smith, D. (1993) suggest that teaching of basic and higher order thinking; is interwoven.Schools have prime importance as the institutions, nurturing thinking at elementary level.

Thinking Processes (TPs) and Curriculum:

'Learning without Burden' the Report of Yashpal Committee (1993)notes the burden of excessive content in curriculum and suggests to emphasize the acquisition of the abilities of self-learning and independent thinking. Same voice is reflected in in NCF 2005. SCF 2010advocates inculcation of Problem-solving, Decision making, Creative thinking and Critical thinking. If the curricula advocate inculcation of TPs then it should clearly get reflected in the objectives framed.

Zone of Proximal Development and Objectives of Education:

Teacher is facilitator in the knowledge construction process and plays key role to extend the zone of proximal development of student. This zone gets enlarged with the development of student but it has certain boundaries according to age and pupil's stage of development. Piaget's stage model describes four sequential stages of cognitive development. Zone of proximal development at each stage gives context and reference frame to set aims and objectives of education. The objectives set in curriculum and syllabus must maintain harmony with developmental stages of the learner. Process of maturation to be a formal operational thinker; starts from about 11 years. The primary education curriculum is framed for the age group from 06 to 14 years; and stages associated with this age group are concrete operational stage and

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

formal operational thought.Infusion of TPs in curriculum is necessary; but it should be as per the stage of development of learners. 'Thecurriculum needs to emphasise the processes ofconstructing knowledge'.(NCF 2005, p 11) Hence TPs should be embedded in objectives set for cognitive domain, so that syllabi and text books will be prepared accordingly to give opportunities to students to construct the knowledge. Pupils need to be taught content to think about. They also need to be taught thinking processes which they can use to think about this content(Langrehr, 2008, p. 4).Thus TPs should be mingled quite purposefully, with curriculum and syllabus.

On this backdrop researchers haveanalyzed the general objectives statedin Primary Education Curriculum 2012 of the subjects Marathi (First Language), English (Third Language), Mathematics, Work Experience, Art Education and Physical Education of Maharashtra State to find out TPsreflected in it. However the learning indicators of only Environmental Sciences are given in the curriculum. Thus for this subject given indicators are analyzed as they are more concrete compared to general objectives.

Statement of the Study:

Thinking Processes (TPs) for Knowledge Construction: An Analysis of Objectives in Curriculum at Elementary Level

Objectives:

1. To identify TPsessential for knowledge construction.
2. To find out TPsreflected in the general objectives in Primary Education Curriculum 2012 of the subjects Marathi (First Language), English (Third Language), Mathematics, Work Experience, Art Education and Physical Education of Maharashtra State.
3. To find out TPsreflected in the learning indicators of Environmental Sciences, given in the Primary Education Curriculum 2012 of Maharashtra State.

Delimitations: The study is delimited to

1. The selective objectives in the cognitive domain of development.
2. The cognitive constructivism.
3. The objectives of Primary Education Curriculum 2012 of Maharashtra State.
4. The objectives of the subjects Marathi (First Language), English (Third Language), Mathematics, Environmental Sciences, Work Experience, Art Education and Physical Education.

Research Questions:

1. Are TPs embedded in the objectives of Primary Education Curriculum 2012 of Maharashtra State?
2. Are cognitive processes suggested by 'Revised Bloom's Taxonomy' comprises all TPsreflected in the same Curriculum?
3. Are any particular types of TPsreflected in the particular subject?

Methodology: Researchers haveidentified TPs for knowledge construction by review of researches and literature and accordingly analyzed the Primary Education Curriculum-2012 of Maharashtra state to find out representation of TPs in curriculum.The three steps of study- review, enlisting of TPsand analysis of objectives are carried out simultaneously.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |
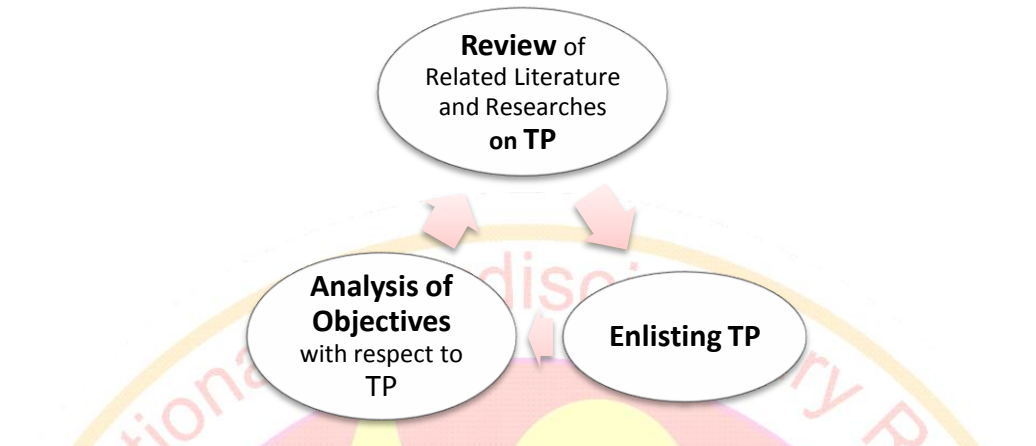
Figure 3: Procedure of study

Sr. No.	Authors	Name of Framework / Model	No. of TPs	Thinking Processes	Source
1	Hannah and Michaelis (1977)	the comprehensive framework for instructional objectives	10 intellectual processes	interpreting, comparing, classifying, generalising, inferring, analysing, synthesising, hypothesising, predicting and evaluating	Moseley, et al., 2005, p 76)
2	Stahl and Murphy(1981)	Domain of cognition taxonomic system	21 mental processes involved in thinking and learning	associating, classifying, combining, comparing, condensing, converting, describing, designating, discriminating, extending, extracting, interpreting, organising, proposing, reconciliating, selecting, separating, translating, utilising, valuating, verifying	Moseley, et al., 2005, p 80
3	Mayer, 2002		cognitive processes	Understand, Apply, Analyze, Evaluate, and Create	Mayer, 2002, p. 232
4	Winn & Snyder, 2003		3 families of cognitive processes	Information processing, Symbol manipulation, Knowledge construction	(Winn & Snyder, 2003)
5	Krathwohl, 2002	Revised Bloom's Taxonomy'	19 cognitive process under 6 groups	Remember (Recognizing, Recalling), Understand (Interpreting, Exemplifying, Classifying, Summarizing, Inferring, Comparing, Explaining), Apply (Executing, Implementing), Analyse (Differentiating, Organizing, Attributing), Evaluate (Checking, Critiquing) Create (Generating, Planning, Producing)	(Krathwohl 2002, p. 215)
6	Jewell (1996)	Reasoning taxonomy for	components of thinking	reasoning, purposeful thinking, ordering information, producing results, and adopting	Moseley, et al., 2005 p.

Interdisciplinary National Conference on Researches and Experisments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

		gifted children		a belief or course of action	171
7	Newman (2010)		12 cognitive processes	Conceptual Processes(Prediction, Modelling, Experimentation, Evaluation); Analytic Processes (Diagnosis, Planning, Causation, Judgment) Social Processes (Influence, Teamwork, Negotiation, Describing)	Newman (2010)
8	Quellmartz (1988)	framework of thinking skills	two broader categories, 6 processes	cognitive (analysis, comparison, inference/ interpretation, evaluation) and metacognitive (planning, monitoring, reviewing/revising)	Moseley, et al., 2005 p. 91

Moseley, et al., (2005) have suggested 'Revised Bloom's Taxonomy' is suitable for educational purpose.

Interpretation:

Although 'Revised Bloom's Taxonomy' is more comprehensive for educational purpose; there are many cognitive processes which are not included in the taxonomy but they are part of other frameworks. E.g. generalising, synthesising, hypothesising, predicting, (Hannah and Michaelis,1977);associating, condensing, converting, describing, designating, discriminating, extending, extracting, proposing, reconciliating, selecting, separating, translating, utilising, valuating, verifying (Stahl and Murphy1981); Prediction, Modeling, Experimentation, Diagnosis, Causation, Judgment (Newman, 2010); monitoring, reviewing/revising (Quellmartz, 1988) etc.

Also large variation in the use of terminology is common phenomena. E.g. Reasoning (Jewell, 1996), Causation (Newman 2010);Evaluating (Hannah and Michaelis, 1977) valuating (Stahl and Murphy1981), Judgment (Newman 2010) etc.

Conclusion 1:

For this study in the context of knowledge construction and selected curriculum objectives; researchers have adapted all 19 TPs in revised taxonomy with addition of five more processes to form set of 24 processes as Recognizing, Recalling, Reasoning, Interpreting, Exemplifying, Classifying, Summarizing, Inferring, Comparing, Explaining, Executing, Implementing, Differentiating, Organizing, Attributing, Checking, Critiquing, Deciding, Estimating, Hypothesising, Generalising,Generating, Planning, Producing for analysis of objectives.

Objectives 2 and 3:

2.To find out TPs reflected in the general objectives in Primary Education Curriculum 2012 of the subjects Marathi (First Language), English (Third Language), Mathematics, Work Experience, Art Education and Physical Education of Maharashtra State.

3.To find out TPs reflected in the learning indicators of Environmental Sciences.

TABLE 2: Thinking Processes Reflected in General Objectives

Name of the Su	General Objectives comprising Thinking Processes	Thinking Processes
1. Marathi (Fir Language)	1. Incidentally, narrating in school, experiences from home premises.	Implementing, Generating
	2. Understanding and assimilating, with difference in langua peer in lingual interaction.	Comparing, Organizing
	3. Understanding the impact of tense, voice, sentence type	Interpreting, Implementing

Page38

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- Department Of Education,Shivaji University,Kolhapur (Maharashtra) | ISSN 2349-638x Impact Factor 2.147 |

		moods on sentence structure for appropriate usage.	
	4.	Try to express the thoughts and ideas in innovative ways.	Producing
2.English (Third Language)	1.	Listen to get central idea.	Interpreting, Summarizing
	2.	Listen to find specific information.	Recognizing
	3.	Listen/ read to understand the attitude and intention of the speaker/ writer.	Interpreting
	4.	Adopt a listening strategy that suits the purpose, type and content of spoken matter.	Deciding, Implementing
	5.	Speak intelligibly.	Implementing
	6.	Use vocabulary appropriate to the topic.	Deciding
	7.	Speak to express opinions, gratitude, likes and dislikes, agreement and disagreement, etc.	Critiquing, Implementing
	8.	Adopt different strategies to read various types of texts.	Comparing, Implementing
	9.	Read between and beyond the lines.	Interpreting, Inferring
	10.	Write fluently, appropriately, and accurately.	Implementing
	11.	Write in formal and informal manner.	Generating
	12.	Write cohesively and coherently.	Organizing, Implementing
	13.	Develop study skills (note-making, note-taking, summarizing, information transfer).	Organizing, Attributing, Summarizing
3. Mathematics	1.	Developing TPs through Mathematics. Also generating competency of logical, objective, analytical, comparative, critical and divergent thinking.	Comparing, Reasoning, Critiquing Differentiating, Organizing, Attributing
	2.	Being able to make the concept abstract and generalize it.	Inferring, Generalizing
	3.	Being able to quantify and to estimate.	Estimating
	4.	Inculcating problem solving capacity.	Differentiating, Organizing, Attributing Hypothesizing, Deciding, Planning, Implementing
	5.	Acquiring competency of doing mathematical operations understanding concepts.	Interpreting, Implementing
	6.	Being able to use mathematical language.	Implementing
	7.	Acquiring skill to use intelligibly the signs and techniques of mathematics.	Implementing
4. Work Experience	1.	Understanding need of coordinating in modern technology, national traditions and culture.	Interpreting
	2.	Understanding positive and negative influence of localization globalization and liberalization.	Interpreting
	3.	Understanding natural, social and human interactions	Interpreting
	4.	Developing specific direction by understanding and applying information in daily life.	Generating
	5.	Cultivating creativity and self-expression capacity through audio visual art expression.	Generating
5.Art Education	1.	Developing observation, memorization and imagination	Recognizing, Recalling, Generating
	2.	Providing opportunity to enjoy through self – expression	Generating, Producing
	3.	Providing opportunity to independent thinking	Critiquing, Generating/ Producing
	4.	Developing capacity of appreciation	Critiquing
6.Physical Education	1.	Inculcating health habits and proper food habits	Implementing

Page39

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:-	ISSN 2349-638x
Department Of Education,Shivaji University,Kolhapur (Maharashtra)	Impact Factor 2.147

TABLE 3: Thinking Processes Reflected in Learning Indicators of Environmental Sciences

Name of the Subject	Learning Indicators comprising Thinking Processes	Thinking Processes
7.Environ-mer Sciences	1. *Observation and arrangement :* observing, arranging, classifying, presenting	Classifying, Organizing,
	2. *Synthesis:* classifying, comparing, explaining difference a similarities	Classifying, Comparing, Explaining
	3. *Analysis:* Reasoning, proposing hypothesis, inferring	Reasoning, Hypothesizing, Inferring
	4. *Discussion:* Listening attentively, understanding, presen orally, presenting thoughts and opinions, discussing to understand others	Interpreting, Implementing
	5. *Explanation:* reasoning and analysis	Reasoning, Differentiating, Organizing Attributing
	6. *Asking Questions /criticizing:* asking curious questions, t able to ask new questions, analytical thinking	Differentiating, Organizing, Attributin Critiquing, Generating
	7. *Experimentation :* Doing experiments, analysis, classifica and using new methods	Classifying, Differentiating, Organizing Attributing, Executing

Observations:

1. Interpreting, Comparing, Organizing, Implementing, Generating, Producing are the 6 TPs embedded in the selected objectives of the Marathi language.

2. Recognizing, Comparing, Inferring, Interpreting, Summarizing, Organizing, Attributing, Deciding, Implementing, Critiquing, Generating are the 11TPs embedded in the selected objectives of the English subject.

3. Comparing, Inferring, Interpreting, Reasoning, Differentiating, Organizing, Implementing, Attributing, Critiquing , Hypothesizing, Deciding, Generalizing, Estimating, Planning are the 14TPs embedded in the selected objectives of Mathematics.

4. Observing, Classifying, Comparing, Explaining, Reasoning, Inferring, Interpreting, Implementing, Executing,Differentiating, Organizing, Attributing, Critiquing, Hypothesizing, Generating are the 15 TPs embedded in the selected learning indicators of Environmental Sciences.

5. Interpreting, Generating are the 2TPs embedded in the selected objectives of Work Experience.

6. Recognizing, Recalling, Critiquing, Generating, Producing are the 5 TPs embedded in the selected objectives of Art Education.

7. Implementing is the TP embedded in the selected objective of Physical Education.

Interpretations:

1. Mathematics and Environmental Sciences reflect maximum number of TPs, below those languages. The subjects Work Experience, Art Education, Physical Education reflect least number of TPs.

2. Interpreting, Inferring and Implementing are the TPs reflected in most of the subjects- Languages, Mathematics and Environmental Sciences. Hence these are important processes for Knowledge Construction.

3. TheTPs Reasoning, Differentiating and Hypothesizing are only reflected in the subjects Mathematics and Environmental Sciences which are related to scientific thinking.

4. Estimating, Generalizing and Planning are the TPs only reflected inMathematics which can be concluded as the subject Mathematics leads students to abstract thinking at large extent.

Page40

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal) website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749) Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:-
Department Of Education,Shivaji University,Kolhapur (Maharashtra) | ISSN 2349-638x
Impact Factor 2.147 |

5. Classifying and Explaining are the TPs reflected only in Environmental Sciences.

8. Generating is the TP reflected in the subjects Marathi, English, Environmental Sciences, Work Experience and Art Education. It means thinking creatively is important for knowledge construction.

Conclusions and Discussion:

    Objectives related to cognitive domain reflects TPs. Some identified TPs (e.g. Exemplifying, Attributing, Checking) are not part of selected objectives. With respect to selected objectives to construct the knowledge body in languages Recognizing, Comparing, Inferring, Interpreting, Summarizing, Implementing, Organizing, Attributing, Deciding, Critiquing, Generating and Producing are the essential TPs. These processes belong to all 6 major categories Remember, Understand, Apply, Analyse, Evaluate and Create of Revised Bloom's Taxonomy. Reflection of all the levels leads to conclusion that objectives of cognitive domain of languages are framed to develop lower as well as higher order TPs.

    The TPs required with respect to selected objectives to construct the knowledge body of Mathematics areComparing, Inferring, Interpreting, Reasoning, Differentiating, Organizing, Implementing, Attributing, Critiquing , Hypothesizing, Deciding, Generalizing, Estimating andPlanning. The TPs only associated with Mathematics (e.g. Estimating, Generalizing and Planning) are of cognitive as well as metacognitive nature and leads to more abstract thinking.

    For Environmental Sciences Classifying, Comparing, Explaining, Reasoning, Inferring, Interpreting, Implementing, Executing,Differentiating, Organizing, Attributing, Critiquing, Hypothesizing, Generating are the TPs essential with respect to selected learning indicators. The maximum number of TPs for knowledge construction of both Mathematics and Environmental Sciences lead to conclusion as these subjects contribute more to cognitive domain of development and thought provoking strategies should be used for knowledge construction in classroom processes. TheTPs Reasoning, Differentiating and Hypothesizing which are only reflected in these two subjects show their explicit relation with scientific thinking.

    Work Experience, Physical Education and Art Education reflect few TPs as very few objectives of these subjects are related to cognitive domain. They are more concerned with affective and conative domain at school level.

References in APA style

Assaf, M. A. (2009, April). Teaching and Thinking. eric.ed.gov. Retrieved January 15, 2015, from 2http://files.eric.ed.gov/fulltext/ED505029.pdf

Bond,T.(2011,June7).What is thinking? Retrieved 20 February 2015, from
   http://ictnz.com/Thinking%20Pages/whatisthinking.htm

Eliasmith, C. (1996). The Third Contender: A Critical Examination of the Dynamicist Theory of

Cognition. Philosophical Psychology, 9.RetrievedFebruary11,2015, from

http://www.arts.uwaterloo.ca/~celiasmi/Papers/thirdcontender.html

Fisher, R. (2008). Teaching for Thinking. www.teachingthinking. Retrieved January 15, 2015, from
   http://www.catchup.org/Portals/3/Conf%20OD13/Teaching%20Thinking%202013.pdf

M.H.R.D.(1993) *LEARNING WITHOUT BURDEN*. New Delhi: Government of India: Department of Education.

NCERT.(2012). *NATIONAL CURRICULUM FRAMEWORK 2005*. Delhi: NCERT.

Retrieved February 26, 2016, from

http://www.ncert.nic.in/rightside/links/pdf/framework/english/nf2005.pdf

SCERT. (2010). *State Curriculum Framework*. Pune.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:- Department Of Education,Shivaji University,Kolhapur (Maharashtra)	ISSN 2349-638x Impact Factor 2.147

The universal declaration of human rights.(n.d.). . Retrieved February 26, 2016, from http://www.un.org/en/universal-declaration-human-rights/

Kizlik, B. (2014, December 26). Thinking Skills Vocabulary and Definitions.   *ADPRIMA.COM*.   Dr.   R.   J.   Kizlik. Retrieved December 29, 2014, from   http://www.adprima.com/thinkskl.htm

Krathwohl, D. R. (2002). A Revision of Bloom's Taxonomy: An Overview.THEORY INTO   PRACTICE, 41(4). College of Education, The Ohio State University.

Langrehr, J. (2008). *Learn to Think: Basic exercises in the core thinking skills for ages 6–11*   (2nd   ed.). Abingdon, Oxon: Routledge.

Lewis, A., & Smith, D. (1993).Defining Higher Order Thinking.*castl.duq.edu*.   Retrieved   January   17,   2015, from   https://castl.duq.edu/Conferences/Library03/PDF/FOV1-   00014A9E/Lewis_A.pdf

Mayer, R. E. (2002). Rote Versus Meaningful Learningi. *Theory into Practice*, *41*. Retrieved from http://rt3region7.ncdpi.wikispaces.net/file/view/8 Perspectives on   RBT.pdf

Mosely, D., Baumfield, V., Elliot, J., Gregson, M., Higgins, S., Miller, J., & Newton, D.   (2005). Frameworks for Thinking (1st ed.). United States of America: Cambridge   University Press.NCERT. (2005). National Curriculum Framework. New Delhi.

Newman, B. (2010). The Twelve Cognitive Processes that Underlie Learning | Libraries   and   Transliteracy on WordPress.com. Retrieved from   https://librariesandtransliteracy.wordpress.com/2010/11/09/the-twelve cognitiveprocesses   that-underlie-learning/`o

Thorndike, R. M., Cunningham, G. K., Thorndike, R. L., & Hagen, E. P. (1991).   *Measurement   and   Evaluation   in Psychology and Education*. (R. Miller, Ed.)   (5th   ed.). Singapore: Macmillan Publishing Company

Trow, W. C. (1970). *Psychology in Teaching and Learning*. (L. Carmichael, Ed.)   (1st ed.). New   Delhi: Eurasia Publishing House (Pvt) Ltd.

Winn, W., & Snyder, D. (2003, October 14). Cognitive Perspectives in Psychology.   Retrieved 11 February 2015, from http://www.aect.org/edtech/ed1/pdf/05.pdf

मराठी संदर्भ:

महाराष्ट्र राज्य शैक्षणिक संशोधन व प्रशिक्षण परिषद, पुणे (२०१३). प्राथमिक शिक्षण अभ्यासक्रम २०१२

सप्रे,, नि.,, पाटिल पी. व पाटिल ज्यो.,, (२००९).,, गतिमानशिक्षणासाठीविचारप्रवाह, फडके प्रकाशन, कोल्हापूर

कक्षा आठवी के छात्रों को भूगोल विषय के "पथ्थर एवं पथ्थरों के प्रकार " इस पाठयांश का पारंपरीक पध्दती और ज्ञानरचनावादी परियोजना पध्दती से किये हुएं अध्यापन का उनके ज्ञानअर्जन पर होनेवाले प्रभाव का तुलनात्मक अध्ययन

डॉ.चेतना प्र.सोनकांबळे

सहयोगी प्राध्यापक

शिक्षणशास्त्र विभाग, शिवाजी विदयापीठ

कोल्हापुर. महाराष्ट्र.

श्री. डिंगबर प्रल्हाद पाटील

सहाय्यक प्राध्यापक,

श्री.प्रकाशचंद जैन कॉलेज ऑफ एज्युकेशन ॲन्ड रिसर्च,

जामनेर जि.जलगॉव महाराष्ट्र.

सारांश :–

  कक्षा ८ वी का संबध माध्यमिक शिक्षा स्तर से हैं। अनुसंधान कर्ता ने केकतनिंभोरा ग्रामस्थित माध्यमिक पाठशाला के कक्षा आठवी के २० छात्रो का भूगोल विषय के "पथ्थर एवं पथ्थरों के प्रकार" इस पाठयांश का पारंपरीक पध्दती और ज्ञानरचनावादी परियोजना पध्दती से किए हुएं अध्यापन का उनके ज्ञानअर्जन पर होनेवाले प्रभाव का तुलनात्मक अध्ययन करने के लिए इस अनुसंधान कार्य का हाथ मे लिया है। इस अनुसंधान में अनुसंधान कर्ता ने २० छात्रो को दो गुटो में विभाजित करने के लिए नमुना प्रतिचयन के यादृच्छिक पध्दती का प्रयोग किया है। इनमे से १० छात्रो के एक गुट को नियंत्रीत करके पारंपारिक अध्यापन पध्दतीसे और १० छात्रो के एक गुट को परियोजना पध्दतीसे पढाया और अंत मे उस पाठयांश के ज्ञानअर्जन का परिक्षण करने के लिए २० अंको की मौखिक और २०अंको की लिखीत परिक्षा का आयोजन किया गया।

  छात्र के परिक्षण के बाद यह पता चला की, पारंपरीक अध्यापन पध्दती और अनुभवजन्य परियोजना पध्दती दोनो का अलग अलग परिणाम दिखाई देता है। दोनो पध्दती में से पारंपरीक पध्दती की ज्ञानअर्जन की औसत २५ अंक और परियोजना पध्दती की ३७ अंक दिखाई दी। इससे अनुसंधानकर्ता को पता चला की, छात्रों को पारंपरीक पध्दतीसे पढाने के बजाएं अनुभवजन्य परियोजना पध्दतीसे पढाया तो उनका ज्ञानअर्जन अच्छा और दृढ होता है।

आमुख :– शिक्षा यह जीवन का आधार है। शिक्षा के बिना मनुष्य पशु के समान है। शिक्षा से ही मनुष्य का संपूर्ण विकास होता है। इस लिए शिक्षा जीवन में आवश्यक मानी जाती है। इस शिक्षणप्रणाली में निरंतर परिवर्तन शुरु है। वक्त जैसा बदलता जाता है, वैसे जरुरत अनुसार शिक्षाप्रणाली में परिवर्तन और अनुसंधान होते जा रहे है। मनोविज्ञानशास्त्र को ध्यान में रखते हुए छात्रो की आयु, ज्ञान ,रुची के अनुसार पाठयक्रम का निर्माण किया जा रहा है। मनोविज्ञानशास्त्रीयोंने जैसे अपने सिंध्दात प्रस्तुत किए है ,उनके अनुसार शिक्षाप्रणाली में विविध सिंध्दांतो का नए से प्रवेश हुवा है। उनमेंसे ही एक ज्ञानरचनावाद /ज्ञानसंरचनावाद यह है। यह सिंध्दात छात्र केंद्रीकृत है। इसलिए मनोविज्ञानशास्त्र के अनुसार इसका महत्च बहुत जादा है। इस रचनावाद में छात्र अपने तरीकेसे सिखता है। और छात्र ही ज्ञान की रचना करता है। इस ज्ञानरचनावाद की, परिणामकारकता जॉचने के लिए अनुसंधानकर्ता ने केकतनिंभोरा तहसिल जामनेर स्थीत पाठशाला के कक्षा ८वी के छात्रों को भूगोल हा विषय के "पथ्थर एवं पथ्थरों के प्रकार" इस पाठयांश का पारंपारिक अध्यापन पध्दती और ज्ञानरचनावादी परियोजना पध्दतीसे किए हुएं अध्यापन का उनके ज्ञानअर्जन पर होनेवाले प्रभाव का तुलनात्मक अध्ययन करने के लिए इस विषय पर अनुसंधान किया है।

अनुसंधान की आवश्यकता :– अनुसंधान एक प्रक्रिया है। जिसके व्दारा हमे किसी घटना ,सिध्दात के बारे में सही और विश्वसनिय जानकारी प्राप्त होती है। अनुसंधान यह ज्ञानअर्जीत करने के लिए वैज्ञानिक अधिगम को अपनाता है। और इस बात को ध्यान में रखते हुएं अनुसंधानकर्ता ने ज्ञानरचनावाद की वैज्ञानिक अनुसंधान की कसोटीपर जॉच करने के लिए इस अनुसंधान विषय को ध्यान में लिया है। वर्तमान शिक्षाप्रणाली छात्रकेंद्रीत मानी जाती है। इस शिक्षाप्रणाली में छात्रों को ज्ञान का सही ढंग से आकलन होता है। इसलिए शिक्षाप्रणाली में ज्ञानरचनावादी धारण का प्रचार एवं प्रसार हुवा है। ज्ञानरचनावाद छात्र केंदीत होनेके कारण इसका महत्च अधिक है। छात्रो के मन में उत्पन्न होनेवाली विभीन्न संकल्पनाओं को स्पष्ट करने हेतु ज्ञानरचनावाद और उसकी विभिन्न शैलीयों के माध्यमसें अध्ययन होना जरुरी है। उनमेसे हीं एक है परियोजना पध्दती। किल पेट्रीक व्दारा इस पध्दती का जन्म हुवा है। यह पध्दती छात्रो को कार्यप्रवन रखती है। इसलिए परियोजना पध्दती और पारंपरीक पध्दती का छात्रों

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

के ज्ञान संपादन पर होनेवाले परिणाम का अध्ययन करने के लिए इस अनुसंधान कार्य की आवश्यकता अनुसंधान कर्ता को महसुस हुई है।

अनुसंधान का महत्त्व :–

प्रस्तुत अनुसंधान कार्य के विषय पर अनुसंधान होने से पारंपारिक अध्यापन पध्दती और ज्ञानरचनावाद पर आधारित परीयोजना पध्दती का तुलनात्मक अध्ययन होकर छात्रो के ज्ञानअर्जन की औसत का पता चलेंगा तथा विभीन्न विषयों का अध्यापन करने के लिए ज्ञानरचनावादी पध्दती का प्रयोग उपयुक्त है? या नही? इस सवाल का जबाब मिलेंगा। इसके साथ ही छात्रों की संकल्पनाएं अनुभवजन्य पध्दतीसे पढाए तो स्पष्ट होती है? या नही? इसका भी जबाब मिलेगा। इसलिए यह अनुसंधान कार्य अनुसंधानकर्ता को महत्वपुर्ण लगता है।

अनुसंधान के उद्देश :–

१)पारंपरीक अध्यापन पध्दती का छात्रो के ज्ञानअर्जन पर होने वाले प्रभाव का अध्ययन करना।

२)परियोजना पध्दती का छात्रो कें ज्ञानअर्जन पर होने वाले प्रभाव का अध्ययन करना।

३)पारंपरीक अध्यापन पध्दती और परियोजन पध्दती का छात्रो के ज्ञानअर्जन पर होने वाले प्रभाव का तुलनात्मक अध्ययन करना।

अनुसंधान की व्यापकता :– यह अनुसंधान केवल केकतनिभोरा ग्राम स्थित पाठशाला तक ही संबंधीत है। तथा यह अनुसंधान केवल पारंपरीक अध्यापन पध्दती और परियोजना पध्दती का छात्रों के ज्ञानअर्जन पर होने वाले प्रभाव सें संबंधीत है।

अनुसंधान की मर्यादा :– यह अनुसंधान केवल केकतनिभोरा ग्राम स्थित पाठशाला तक ही सिमीत है। तथा यह अनुसंधान केवल केकतनिभोरा ग्राम स्थित पाठशाला के कक्षा ८वी के छात्रो तक ही सिमीत है ।

अनुसंधान की विधी:– प्रस्तुत अनुसंधान में परिक्षणात्मक अनुसंधान विधीका प्रयोग किया गया है।

परिक्षणात्मक रुपरेखा :– प्रस्तुत अनुसंधान कार्य मे दो समुह केवल पश्चात परिक्षणात्मक रुपरेखा का प्रयोग किया है । कुल ४० छात्रो में से १० छात्रों का चयन नियंत्रित समुह और १० अलग छात्रोका चयन परिक्षण समुह के रुप में किया गया है ।

न्यादर्श प्रतिचयन विधी :– प्रस्तुत अनुसंधान कार्य के लिए प्रायिकता प्रतिचयन के यादृच्छिक लॉटरी पध्दती का प्रयोग न्यादर्श चयन के लिए किया गया है ।

अनुसंधान में ऑकडा संग्रहन के साधन :– प्रस्तुत अनुसंधान कार्य के लिए साधन के रुप मे स्वनिर्मीत प्रश्नावली और साक्षात्कार का प्रयोग किया गया है ।

अनुमान /निष्कर्ष :– प्रस्तुत अनुसंधान कार्य के पुर्ती के बाद कुछ प्रमुख अनुमान सामने आएं यह निचे दिए गएं है।

१)पारंपारिक अध्यापन पध्दती के अनुसार छात्रों में ज्ञानअर्जन का औसत प्रमाण यह कुल ४०में से २५ अंक है।

२)परियोजना पध्दती के अनुसार छात्रो में ज्ञानअर्जन का औसत प्रमाण यह कुल ४० में से ३७ अंक है।

३) दोनो पध्दतीयों का प्रयोग कर छात्रों के ज्ञानअर्जन का कुल औसत प्रमाण यह कुल ४० में से ३१ अंक है।

४) दोनो पध्दतीयों का प्रयोग कर छात्रों के लिखीत तथा मौखीक परिक्षा के परिणाम मे भारी अंतर है ।

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

५)पारंपारिक अध्यापन पध्दती व्दारा अध्यापन कार्य के लिए समय कम लगता है , किंतु छात्रों के ज्ञानअर्जन मे समय अधिक लगता है ।

६)परियोजना पध्दती व्दारा अध्यापन कार्य के लिए समय अधिक लगता है , किंतु छात्रों के ज्ञानअर्जन में समय कम लगता है।

<u>संदर्भ सूची</u> :–

भंगाळे , शैलजा ,और धांडे , पिंगला., (२०१६). *अध्ययनासाठी मुल्यनिर्धारण* , जलगॉव : प्रशांत पब्लिकेशन्स.

चव्व्हाण गणेश,(२०१२).*अध्ययन अध्यापन प्रक्रिया*, नाशिक: इनसाईट पब्लिकेशन्स.

दांडेकर ,वा.ना. (१९८९).*शैक्षणिक मुल्यमापन व संख्याशास्त्र* ,पुणे: श्रीविदया प्रकाशन.

पाटील ,वा.भा.,(२०१०).*संशोधन पध्दती* , जलगॉव : प्रशांत पब्लिकेशन्स.

सांगोलकर ,अरुण .., (२०११).*नवीन जागतिक समाजातील शिक्षणाचे विचारप्रवाह*, नाशिक: इनसाईट पब्लिकेशन्स.

पाटील ,गितांजली.,(२०१३).*सातत्यपुर्ण सर्वंकश मुल्यमापन ,ज्ञानरचनावाद आणि शिक्षकाची भुमिका,* :

भारतीय शिक्षण, म.भा.शि.मं., मुंबई पृष्ठ ,२०

मंडळामार्फत शिक्षकांसाठी आयोजित राज्यस्तरहय निबंध स्पर्धा २००९–२०१० या स्पर्धेतील प्रथम क्रमांक प्राप्त निबंध ., (२०१०)*माध्यमिक व उच्च माध्यमिक स्तरांवर अध्ययन व अध्यापनात रचनावादाचा उपयोग* ,शिक्षण संक्रमण म.रा.मा.व. उ.मा.शि. मं.पुणे.पृष्ठ .२४
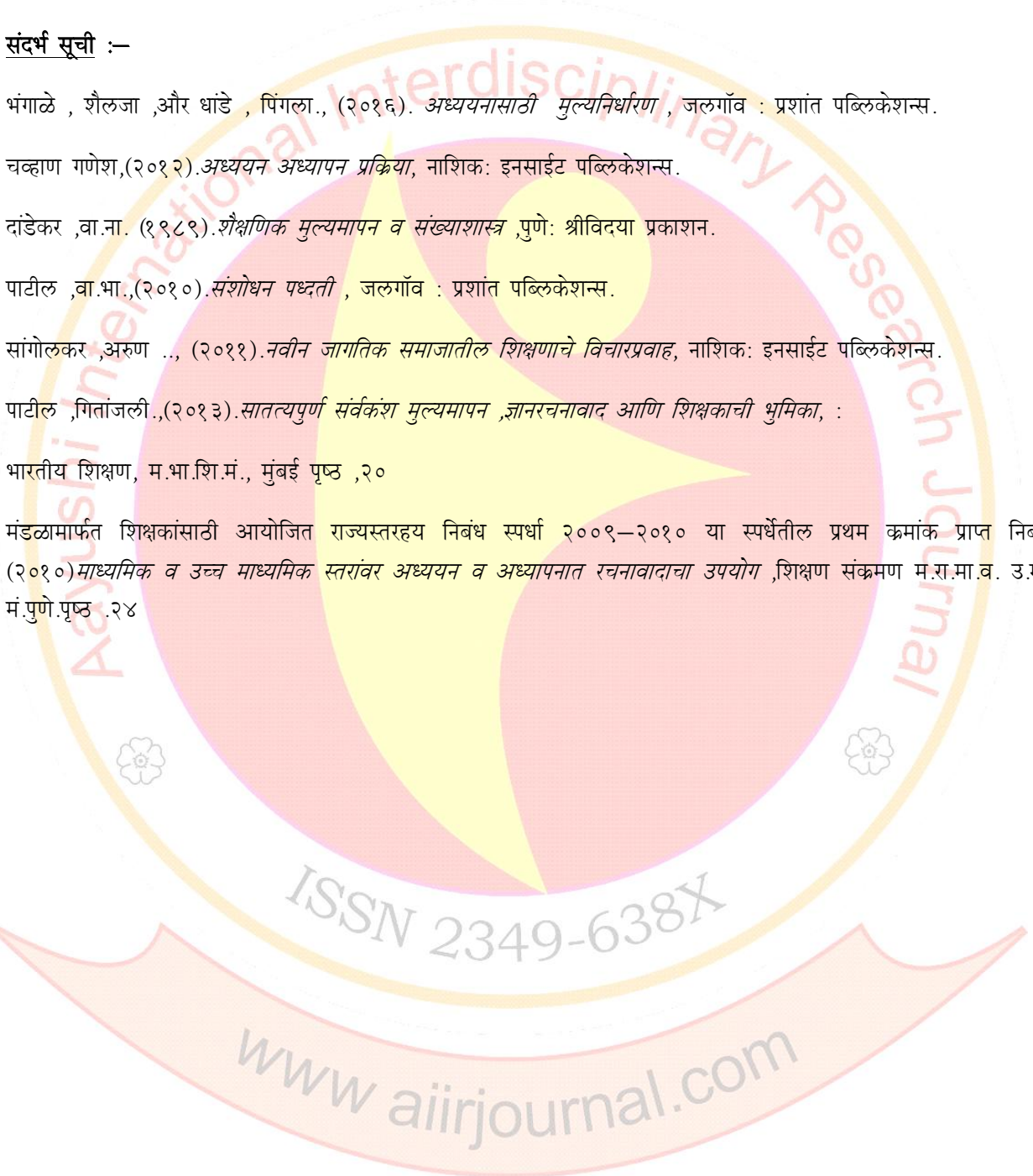
DEVELOPING CRITICAL READING SKILLS FOR ACTIVE CITIZENSHIP THROUGH CONSTRUCTIVIST APPROACH

[a] **Ms. Asmita Hajare,**
Ph.D. Student,
Department of Education,
Shivaji University, Kolhapur
asmitahajare373@gmail.com,
 Mo- +91 9404417520

[b]**Dr. Smt. Meena Surve,**
Assistant Professor,
College of Education,
Pethvadgaon, Kolhapur.
meenasurve218@gmail.com
Mo +91 7387066545

[c]**Prof. Dr. P.S. Patankar**
Professor & Head,
Department of Education,
Shivaji University, Kolhapur
pratibhaspatankar@gmail.com,
Mo- +91 9960192103

Abstract

The objective of teaching language as a component of the foundation course is to nurture among learners advanced communication and negotiation skills , higher order reading , writing and study skills and a humane appreciative and futuristic to life and its various manifestations. Within all these skills higher order reading or critical reading process involves analysis, interpretation and evaluation. Each of these processes helps reader to interact with the text in different ways: brainstorming, outlining, describing aspects of the text or argument, reflecting on your own reading and thinking, sometimes raising objections to the ideas or evidence presented. Critical reading leads to critical thinking are very foundation of true learning which enhance active citizenship.

The objectives of present paper are to find out the importance of critical reading skills for active citizenship and to find out constructivist activities for critical reading skills with constructivism. Constructivists suggest that learning is more effective when a student is actively engaged in the learning process rather than attempting to receive knowledge passively.   So critical reading makes the learner to understand the text, reflect on the text through critical thinking. This also helps to engage the learner in social activities.

Key Words: Critical Reading Skills, Active Citizenship, Constructivist Approach etc.

Introduction :

In school and in life, students face a diversity of circumstances that requires language skills. Morris (1968) divides the basic language skills into four categories viz; listening, speaking, reading and writing. The school curriculum has form to help to generate and promote among the learners; language abilities of listening , speaking, reading and writing and thinking and communication skills- verbal and visual – needed for social living and effective participation in the day today activities (NCF 2000)

Listening skill is the first language skill which gets developed. Listening skill leads to speaking. Speaking is "articulating and listening is responding and discriminating." The third important skill for a language is understanding what is read or comprehension of the written language. It is a communication between the reader and the author. Communication from writer to reader occurs only if the reader can take meaning to the printed page. Listening and reading are receptive skills in the sense that the language user receives information from the written or spoken form of the language (www.Shodhaganga.infibnet.ac.in)

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

The objective of teaching language as a component of the foundation course is to nurture among learners advanced communication and negotiation skills , higher order reading , writing and study skills and a humane appreciative and futuristic to life and its various manifestations. The study of language prepares a learner both to learn and use language effectively in the classroom and the community and workplace(NCF 2000).

Objectives of the paper:

1. To find out the importance of critical reading skills for active citizenship.
2. To find out various activities for critical reading skills with constructivism.

Reading skills:

Reading is an analysis of the text. It depends upon the purpose of reading. To Bloomfield and Barnhart, Reading involves nothing more than the correlation of a sound image with its corresponding visual image." Artley looks at reading as a part of reconstructing from the printed page, the writers ideas, feeling, moods and sensory impression.
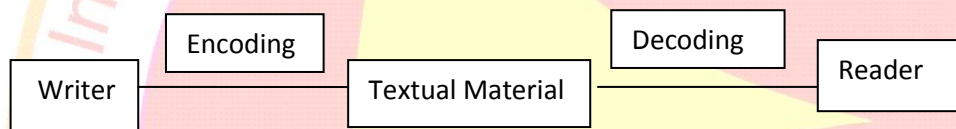
Harries and Sipay (1975) define reading as the meaningful interpretations of written or printed verbal symbols.

Critical reading skills:

Critical reading involves presenting a reasoned argument that evaluates and analyzed the text. The aim of critical reading is not to find fault but to assess the strength of the argument . Critical reading reflecting on the purpose of the text, meaning of the text in the context of studies. With critical reading reader makes different interpretations that lead a first step towards formulating own approaches.

Critical writing is depending upon critical reading. The authors have a purpose when they write a text. As critical reader the task is to figure out the purpose behind writing. So critical reading may called as process of evaluation. The objective of academic courses at higher level is to introduce them to different ways of collecting and processing data and information under specific disciplines and help them in arriving at conclusions and generating new insights and knowledge in the process (NCF 2000). When teachers expose students to critical reading they will also make students to see the cause and effect or comparing relationships in the text. In other words , critical reading skills leads to critical thinking skills.

Most of the students can read but major purpose behind critical reading is to understand the text critically like, 'reading between the lines' or 'reading for a deeper meaning.' Critical reading means scrutinizing the style and structure of the meaning.

Critical reading for Active Citizenship :

Active Citizenship relates to how people can promote community, cohesion and social solidarity, strengthening civil society as well as empowering individual citizen (http://googleweblight.com).

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Citizen's all duties and responsibilities are inter-related. As a critical reader we come to know that duty for one and rights for another. As a citizen in a democracy we are responsible for thinking deeply about the text. Critical reading play a vital role in twenty-first century.

Critical reading ⟹ Critical thinking ⟹ Active Citizenship
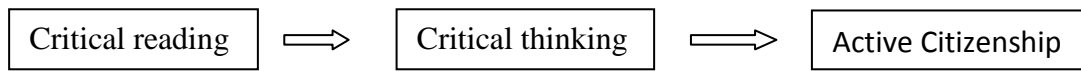
At high school level where the focus is on learning facts and college level learning focus in on explore new ideas which help to develop active citizenship. At the college level the students might develop logical reasoning skills. Through critical reading students are able to think outside of the box and they might become passive learners. Critical reading and critical thinking are therefore very foundation of true learning and personal development. There are several steps for critical reading:

1. First reading or Previewing:
   Critical reading starts with first reading. The reader at a glance read the title, subheading of the text. The reader only read the information in the text.
2. Second reading:
   After first reading the readers try to understand the idea in the text. Re-reading is necessary to find out the text's purpose.
3. Contextualizing the text:
   After second reading the reader become familiar with the historical context of the text, biographical context of the author. In the flow of reading reader catching the attitude of author, style in which the author presented the content.
4. Annotation :
   At this stage the reader uses margins to make note, key words in the text. The reader makes judgment about how text is argued. The reader also examine the connection between the paragraphs, explanation used by the author.
5. Outline :
   After annotation the reader prepare summary of each paragraphs. This will help to analyze the text. When the reader may find a logical connection the text.
6. Summarize the text:
   At the end of the text reader come to some conclusions. In the summarize step the reader can write about the purpose of writing a text, the examples which support the arguments. Some other author also writing on the content. How this text is differs from other text? reader can conclude with all this.

Constructivism:

Constructivism is a theory of how the learner constructs knowledge from experience, which is unique to each individual. Constructivism according to Piaget (1971) is a system of explanations of how learners as individuals adapt and refine knowledge. At the heart of constructivist philosophy is the belief that knowledge is not given but gained through real experiences that have purpose and meaning to the learner, and the exchange of perspectives about the experience with others (Piaget & Inhelder, 1969; Vygotsky,1978). As humans develop, there are qualitative changes in their ability to think logically about experiences. Learning environments for adults based on constructivist philosophy include opportunities for students to make meaningful connections between new material and previous experience, through

Page48

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal) website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749) Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

discovery. In most pedagogies based on constructivism, the teacher's role is not only to observe and assess but to also engage with the students while they are completing activities, wondering aloud and posing questions to the students for promotion of reasoning. One of the simplest ways to do this is asking open ended questions. The role of a teacher and other learners is to provide setting, pose the challenges and offer the support that will encourages cognitive constructivism (Chaille, 2008)

Four epistemological assumptions are at the heart of what we refer to as "constructivist learning. "The first one is, knowledge is physically constructed by learners who are involved in active learning. Second is knowledge is symbolically constructed by learners who are making their own representations of action; Knowledge is socially constructed by learners who convey their meaning making to others; and last one is, Knowledge is theoretically constructed by learners who try to explain things they don't completely understand. The collective effort suggested by the teachers provides the opportunity for children to reflect on their own ideas also those of their peers also. In cooperative learning setting, children view their peers as a resource than as competitors. Constructivism is serving as the basis for many of the current reforms in several subject matter disciplines.

Suggestive constructivist activities for developing critical reading skills:

No.	Steps for critical reading	Activities based on constructivist approach	Explanation
1	First reading	Fishbowls	Teacher provides text to the students wh already divided into groups. Students will read the text carefully.
2	Re-reading	Buzz session Cooperative learning	After second reading the text teacher all discuss within group.
3	Contextualizing the text	KWL (H) chart	After discussion In this activity "Know, W to Know, Learn" Students identify what t know about a topic, what they want to k and after reading, identify what they lea or would still like to learn.
4	Annotation and questioning t understand	Mind map	In this activity students list and categoriz concept and ideas in the text.
		Socratic seminar	Students explore and evaluate the ideas text and starts reflecting on the meaning the text within group
		Think-Ink-Pair-Share	Student think, write and pair with anoth student.
		Think Pair share	Student think individually then pair(discu with partner) then share with the class
5	Outlining and summarizing	Concept map	After discussion students draw concept Its a "advanced organizers" which highlig concepts and connections.

Conclusion:

Constructivist approach helps to develop critical reading skills. These activities with constructivist approach are helpful to develop critical reading skills. Students should be made aware of

Page 49

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

their learning skills to help them be critical and successful student in future. Critical reading skills help the students to become socially responsible person. With the critical reading skills learner will be aware of their own rights and responsibilities and will also respect other rights and responsibilities. This will enhance active citizenship among learners.

References:

Chaille, C. (2008). *Constructivism across the curriculum: Big ideas as inspiration*. Upper Saddle River, NJ: Allyn & Bacon.

Flynn, P. (2005). *Applying standards-based constructivism: A two-step guide for motivating elementary student*s. Larchmont, NY: Eye on Education.

Fosnot, C. T. (2006). *Constructivism: theory, perspectives, and practice*. New York, NY: Teachers College Press.

Griffin, R. E. (2010). *Engaging creativity and critical thinking*. Washington, DC: International Visual Literacy Association.

Hooks, b. (2009). *Teaching critical thinking*. New York, NY: Routledge.

Kincheloe, J. L. (2006). *Critical constructivism primer*. New York, NY: Peter Lang.

Larochelle, M. (2010). *Constructivism and education*. West Nyack, NY: Cambridge University Press.

Leitner, L. M. (2010). *Personal constructivism: Theory and application*. New York, NY: Pace University Press.

Levy, D. A. (2010). *Tools for critical thinking*. Long Grove, IL: Waveland Press.

Liecester, M. (2010). *Teaching critical thinking skills*. London, UK: Continuum International Publishing Group.

NCERT (2005).NATIONAL CURRICULUM FRAMEWORK, New Delhi: National Council of Educational research & Training

Norbaiyah A. K., Roose, N, S, Farah, H. A. & Juhaida (2014).*The Importance Of Teaching Critical Reading Skills In A Malaysian Reading Classroom* , Malaysia: Ismail University Technology MARA (UiTM) Pahang.

Piaget, J. & Inhelder, B. (1969). The Psychology of the child. New York: Basic Books, Inc.

Vygotsky, L.S. (1978). Mind in society: The development of higher psychological processes. Cambridge: MA, Harvard University Press.

http://www.le.ac.uk/succeedinyourstudies

http://www.BHSU.edu/WritingCenter

http://www.Shodhaganga.infibnet.ac.in

http://writing.umn.edu/sws/assets/pdf/2010SWG.pdf

https://www.youtube.com/watch?v=kQFKtI6gn9Y>

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Theoretical Dimensions of Curricular Engagement for Implementing Constructivist Pedagogy

Nagina S. Mali[a]

[a] Ph.D. Research Scholar,

Department of Education, Shivaji University,

Kolhapur. India-416004.

naginamali2012@gmail.com

 Mo. +91 8975295297

Prof. Dr. Pratibha S. Patankar[b]

[b] Professor & Head,

Department of Education, Shivaji University,

Kolhapur. India- 416004.

pratibhaspatankar@gmail.com

Mo. +91 9960192103

 Abstract

Constructivist pedagogy is performing crucial role in construction of knowledge society. Today, it is mostly using in primary education level to students knowledge construction. Cognitive, social, radical, culture, critical constructivism are affecting today's social changes. Mostly social constructivism is higher order in curricular engagement. Curricular Engagement is methodological term that fills gap between school and society. This is constructivist approach which is related to social constructivism that includes such as social-learning, service-learning, community engagement, active participation, experiential education, collaborative learning, civic awareness, community based education, co-operative education, field experiences etc. These every component wants construction of knowledge. It emphasis on academic achievement but other hand good knowledge, skills, positive attitude, knowledge implementation and building of learning society. Constructivist approach supports to leaning society and meaning of learning society is to push in thinking process/power. In this paper researchers has tried to explain that how constructivist pedagogy are being supporting to curricular engagement. For this reason researchers formed three objectives such as 1.To introduce meaning of Curricular Engagement.2.To introduce analytical implementing process of Curricular Engagement based on constructivist Pedagogy.3.To introduce synthesized model of Curricular Engagement based on constructivist Pedagogy.

Key Words: constructivist pedagogy, primary education, Curricular Engagement, social-learning, service-learning, community engagement, active participation.

Introduction

Curricular Engagement term is mostly using in abroad context for students service-learning. They use it as a common factor of teaching-learning. Understanding society need, sensitization, active participation in school and social context, going forward through with self constructed knowledge (every student is unique),higher order thinking, using of constructed knowledge all these aspect of curricular engagement wants learning, active and participative society which is stated by Delors commission. Theory of curricular engagement tells that students should learn to learn by social, individual, cultural, critical and collaborative performance with planed arrangement. **Many definitions of Curricular Engagement:** Curricular Engagement to be most fundamentally a relational process focused on capacity-building and grounded in the principles of servant leadership: all participants are engaged in relationships not only in which all contribute and all benefit but also of mutual learning, growth and change. *(Whitney,B.C.,McClure, J.D.,Respet,A.J.,Clayton, P.H.(2007) www.curricularengagement.com).*Curricular Engagement describes the teaching, learning and scholarship that engages faculty, students, and community in mutually beneficial and respectful collaboration. Their interactions address community identified needs, deepen student's civic and academic learning, enhance community well-being and enrich

Page51

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal) website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749) Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

the scholarship of the institution. *(Carnegie foundation. www.elon.edu).*Curricular Engagement bridges society and school to prepare students for social productive through community activities as well as community service.*(Robert, Bringle).*All definitions indicates curricular engagement is productive, involved, relational as well as collaborative process. Here Constructivist pedagogy supports to achieve all these aspects of curricular Engagement by given its principles, dimensions and using phases.

Principles of Constructivist Thinking

1. Learning is an active process   2.People learn to learn as they learn

3. It happens in the Mind/Mental activity (Dewey: Reflective activity)

4. Learning involves language   5.Learning is a social activity

6. Learning is Contextual   7.One needs knowledge to learn

8. It takes time to learn   9.Motivation is a key component in learning

(*www.hi.is*)

Students' centric views under Constructivist pedagogy: To construct-

Safe Climate, time for observation, action work, situated learning, real experiences, positive attitude, motivate words, contextual teaching, subject linkages, good relationship and Understanding.

Theoretical Dimensions of Curricular Engagement

1. Constructivist Education through Society

2. Constructivist Education through School

3. Constructivist Education through Curriculum

4. Constructivist Education through Textbook

5. Constructivist Education through Resources (Physical/Natural, Human made)

6. Constructivist Education through Climate

7. Constructivist Education through Media (Audio/Visual/Audio-Visual/Multimedia)

Phase wise Analytical Implementing Process of Curricular Engagement based on Constructivist Pedagogy

Curricular Engagement accepts all those principles that included in Constructivist approach. Following table no.1.discribes that how Principles of constructivist Pedagogy reflects on Curricular Engagement Implanting Phases. Phase wise responsibilities of teachers and students has given below-

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:-	ISSN 2349-638x
Department Of Education,Shivaji University,Kolhapur (Maharashtra)	Impact Factor 2.147

Table No. 1. Phase wise Analytical Implementing Process of Curricular Engagement based on Constructivist Pedagogy

Curricular Engagement Dimensions	Implementing Phases of Curricular Engagement	Affecting factors of Constructivist Pedagogy
1.*Constructivist Education through Society*	**Phase 1.** Need analysis of society **Phase 2.** Relation maintaining between school and society **Phase 3.** Programme, Planning, actions, Projects, that gives real experience with base on first phase. **Phase 4.** Benefits of the society	**Learning is a social activity** **(Linkages) between same situations, content etc.** **Action work for real experiential knowledge sharing, contextualization** **Take a time**
2.*Constructivist Education through School*	**Phase 1.** Need analysis of school **Phase 2**. Relation maintaining within a school **Phase 3.** Sharing powerful ideas, plans, programs **Phase 4.** school climate	**Current situation Understanding (Observation)** **Good Relationship between schools** **Knowledge sharing** **Safe climate**
3. *Constructivist Education through Curriculum*	**Phase 1.** Need analysis of schools, students, teacher, and society. **Phase 2.** Implementing Process of curriculum & training **Phase 3.** Evaluation and feedback **Phase 4.** Modification	**Learning is a social activity** **Real Experience, Action work, contextualization** **Positive attitude and feedback** **Knowledge Construction/building**
4. *Constructivist Education through Textbook*	**Phase 1.** Need analysis of students **Phase 2.** Objective selection **Phase 3.** Preparation of work **Phase 4.** Implementing of activities **Phase 5.** Evaluation and Feedback	**Current situation Understanding (Observation)** **Objective based teaching** **Activity based planning, contextualization** **Students participation** **Positive Attitude**
5. *Constructivist Education through Resources (Physical/Natural, Human made)*	**Phase 1.** Content need **Phase 2.** Quality of resources, selection **Phase 3.** Students Achievement	**Resources selection**
6. *Constructivist Education through Climate*	**Phase 1.** Need of content **Phase 2.** Creation of Safe climate **Phase 3.**	**Learning is a social activity** **Quality of climate, creation and Students safe feelings**

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

	Students achievement	Knowledge building
7. Constructivist Education through Media (Audio/Visual/Audio-Visual/Multimedia)	**Phase 1.** Need of content and students **Phase 2.** Objective Selection **Phase 3.** Available Instruments **Phase 4.** Quality checking **Phase 5.** Students Achievement	**Intension based teaching** **Evaluation** **Knowledge building**

Above table no.1.discribes the phase wise analytical steps that guide what should be done by the teachers and students. Each phase have its crucial value. Constructivist approach gives the contribution in curricular engagement term by supporting its principles and students centric approach. On every phase students as well as teachers have to prepare getting a new knowledge. Teacher is representative of constructivist approach. Under implementing of curricular engagement through constructivist approach teachers role is such as a facilitator, as a co-learner, as a guide, as a model of learner, as a supporter, as a friend and as a mother also.

Synthesized model of implementing Process of Curricular Engagement

Implementing phases of Curricular Engagement

Phase 1.Need Analysis of Students, Teachers, Society, contents etc.

Phase 2.Objective Selection

Phase 3.Content Analysis

Phase 4.Resources selection

Phase 5.Story board writing

Phase 6. Programme development

Phase 7. Implementation

Phase 8.Evaluation

Phase 9.Feedback

Through Constructivist Pedagogy

Observation, Linkages, Motivation, safe climate, Positive feedback, Contextual, social activity, language ability, Mental activity, time to learn, individual practices, critical thinking, learning through action, decision making, multiple intelligences. etc.
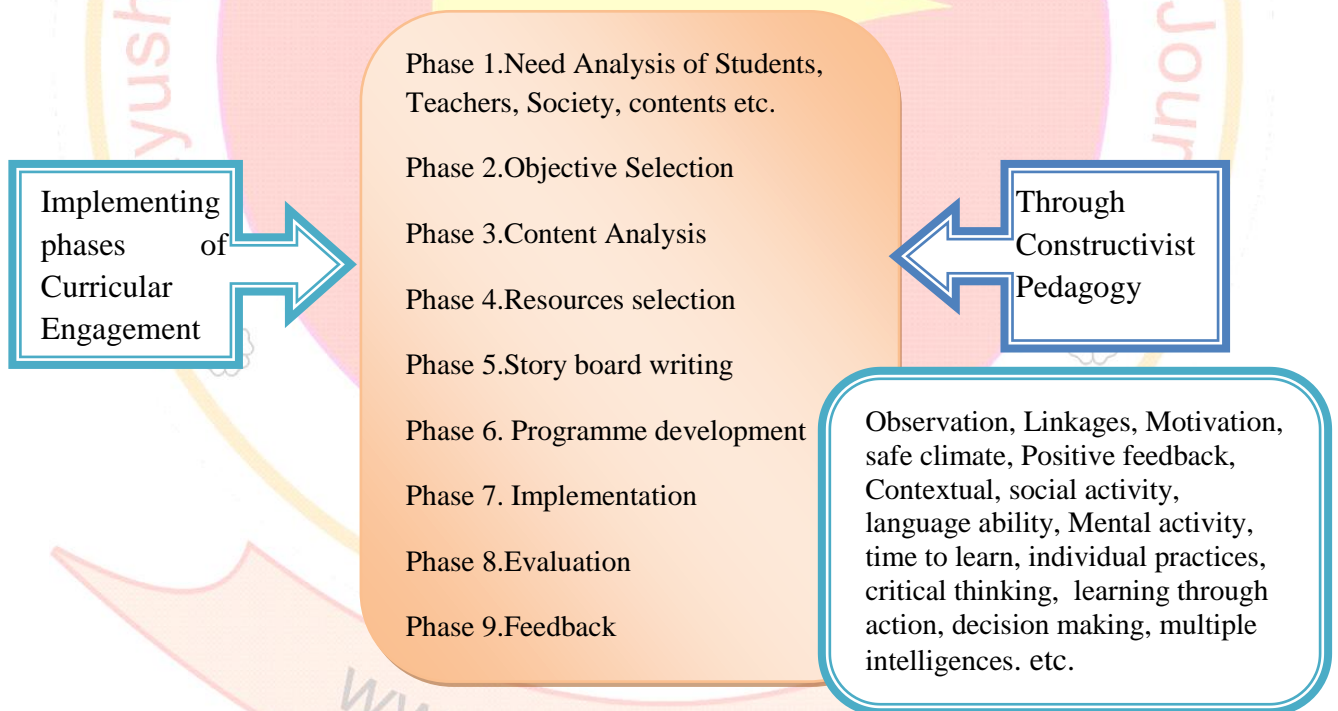
Diagram: Synthesized/integrated model

Above diagram describes the **Synthesized /integrated** model of implementing Curricular Engagement term through Constructivist approach. These all Phases are given sequential order that is might be guidable to curriculum implanting or lesson planning. We have to select firstly identified the need of students, society and this content which is selected to be teach. After this need finalizing following steps starts with construction of knowledge. On 9th phase feedback work positively rather than   negative. On each phase's construction of teacher and students knowledge is much valuable to follow constructivist approach.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Conclusion

Constructivist pedagogy is based on self knowledge construction. Building of knowledge always related to previous experiences of students. Every human is unique in this word hence, there is need to identify the need of students and today's society that is learning forever. Such a School, students and teachers are representative of society. Many researchers have proved that construction of knowledge happens by actions and handling to evidences. And curricular engagement always wants student's engagement in activities, school plans. Basic principles of curricular engagement take the philosophical thoughts of constructivist pedagogy. On implementing phases of curricular engagement constructivist pedagogy supports them. Hence, this is our duty to follow students need, their future and hopefully facilitate them.

References

Alexandra Draxler. (Sept.,2010).*A World of Report? A Critical Review of Global Development Reports With an Angle on Education and Training. Retrieved March 11, 2016, from www.norrag.org*

Carnegie Foundation Elective Community Engagement Classification. Retrieved February 20,2016,from www.unco.edu

Clayton,P.(February, 2007).Proposal to Establish the "Center for Excellence in Curricular Engagement".NC State University. Retrieved March 1,2016,from www.provost.ncsu.edu

Constructivism (philosophy of education). Retrieved March 11,2016, from https://en.m.wikipedia.org

Clayton,P. Curricular Engagement. Retrieved March 10,2016,from www.curricularengagement.com

Hartley, M., Saltmarsh, J., & Clayton, P. H. (2010).*Is the civic engagement movement changing higher education? British Journal of Educational Studies, 58(4), 391-406.Retrieved March 05, 2016, from http://ewucommunityengagement.pbworks.com/w/file/fetch/64751496/civicengagementchaninghigher-ed.pdf*

JEPA, NIEPA.(1996).*Learning the treasure Within by Jacques Deloes. Retrieved March 11, 2016, from www.educationforallinindia.com*

Mali, N. S., Patanakar P.S. & Chavan, R.L. (Sept.,2014).*Curricular Engagement: An Innovative Practice in Higher Education. Review of Research, Vol.1 Issue-1, pp.1-6*

Nagina S. Mali & P. S. Patankar (Dec.,2015). *Innovative Teaching-Learning Plan for Curricular Engagement to develop School, Students and Teachers skills. Siddharth National Research Journal. pp.48-52*

Nagina S. Mali & P. S. Patankar (6th ,Sept.,2015).*CURRICULAR ENGAGEMENT FOR SOCIAL COMMITMENT. National Conference Research Paper Journal. pp. 123-126*

N. S. Mali & P. S. Patankar (January,2015). *Curricular Engagement in the context of Brain-Based Education: Role of Teacher Educators. BEACON National Journal. Vol.3.Issue- 3.pp.212-216*

Mali, N. S.& Patanakar P.S. (Feb.,2016). *Curricular Engagement for Understanding responsibilities of Global Citizenship. Aayushi International Interdisciplinary Research Journal, Special issue, pp.33-37*

Robart,G.Bringle & Julie A.Hatcher. *Innovative Practices in Service- Learning and Curricular Engagement. Retrieved February 23,2016,from www.covocenter.niu.edu*

REVIEW OF RESEARCHES ON CONSTRUCTIVIST APPROACH

Shri. Ankush R. Bansode

Assistant Professor,

Mahavir Mahavidyalaya, Kolhapur.

Mob +91 9689004808

E-mail-abansode1234@gmail.com

Dr. Pratibha S. Patankar

Prof & Head, Dept. of Education,

Shivaji University, Kolhapur.

Mob +91 9960192103

pratibhaspatankar@gmail.com,

Abstract

Much researches concerning science teaching and learning is responsible for major shifts in science teacher education. Cognitive science has become a research focus around the world since the early 1980s (Georghiades, 2004). Basically, this research reveals that most people learn the kind of science that is useful in places other than the classroom and laboratory, where students are merely expected to repeat what they are told, follow directions, and remember information and results on recall type examinations. Another research field focuses on the Constructivist Learning Model (Bybee et al, 1989; von Glaserfeld, 1987; Yager, 1991). The research seems conclusive; most people learn only when they construct meaning for themselves. Such research must provide the basis for future science teacher education programmes. Without the research base provided by cognitive science and constructivist studies, improved models for science teacher education cannot be developed. Thus it is constructivism that initiated learner-centered approach in education. The National Curriculum Framework (NCF) 2005 strongly supports the constructivist and learner-centered approach in school education.

The present paper focus on Review (overview) of researches based on effect of constructivist approach only-

Key Word: Effect Of Constructivist Approach

Introduction

The education of science teachers has become a matter of great concern internationally, as problems of economics dominate the attention of people and governments. Scientific and technological literacy for all citizens is a stated goal of most modern nations; the production of more and better scientists and technologists is seen as a way of competing in the economic arena and a primary means of the human condition. If science and technological literacy in general is to be improved, and more students are to be attracted to careers in science technology, changes need to be made at the school and college programmes and in particular teacher education programme.

Much research concerning science teaching and learning is responsible for major shifts in science teacher education. Cognitive science has become a research focus around the world since the early 1980s (Georghiades, 2004). Basically, this research reveals that most people learn the kind of science that is useful in places other than the classroom and laboratory, where students are merely expected to repeat what they are told, follow directions, and remember information and results on recall type examinations. Another research field focuses on the Constructivist Learning Model (Bybee et al, 1989; von Glaserfeld, 1987; Yager, 1991). The research seems conclusive; most people learn only when they construct meaning for themselves. Such research must provide the basis for future science teacher education programmes. Without the research base provided by cognitive science and constructivist studies, improved models for science teacher education cannot be developed. Thus it is constructivism that initiated learner-centered approach in education. The National Curriculum Framework (NCF) 2005

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

strongly supports the constructivist and learner-centered approach in school education.

Learning is a social as well as individual process, and individual's learning does not occur in a vacuum. Such a position is consistent with a social constructivist orientation. Advocates of such an orientation for example, Milne & Taylor (1995), have suggested that (a) learning involves personal mental construction of knowledge by individuals, (b) learner subscribe to their conceptual structures, not because they are absolute, but because they are viable for them as individuals, and (c) knowledge construction is a social and cultural process mediated by language.

Constructivists present several useful tenets to teacher educators and individuals who are being educated to be teachers. First, the learner is active in creating meaning. Second, the traditional roles of passive learner and teacher-as-spoon-feeder must be reconsidered, with increasing responsibility recognized for and by the learner. Third (at least in some versions of constructivism), the learner goes through a series of broad stages of learning in which, describable mental activities occurs.

Fosnot (1996) argues that the primary goal of a constructivist approach to teacher education is to facilitate new ways of knowing. If understanding the teaching/learning process from a constructivist view is itself constructed, and if teachers tend to teach as they were taught, rather than as they were taught to teach, then teacher education needs to begin with these traditional beliefs and subsequently challenge them through activity, reflection, and discourse in both coursework and field work through the duration of the program. Most importantly, participants need experiences as learners that confront traditional views of teaching and learning in order to enable them to construct a pedagogy that stands in contrast to older, more traditionally held views.

The present paper focus on Review (overview) of researches based on effect of constructivist approach only-

Reviews of researches based on effect of constructivist approach

Anthony (1996) studied on the title Active Learning in a Constructivist Framework. This study examined 6th form (year 12) mathematics students' use and awareness of learning strategies in their authentic learning environment. A major portion of the study was the development of a classificatory scheme of students' learning strategies under the broad headings of cognitive, affective, metacognitive and resource management strategies. The participating class of 12 students was from a coeducational secondary school in a provincial city in New Zealand. Throughout the school year data were collected by the researcher using non-participant classroom observations, interviews, student diaries, student work, and questionnaires. In addition, four case study students participated in a series of stimulated recall interviews. Case studies of two students detail contrasting passive and active learning behaviours. Examples of their strategic learning behaviours illustrate that having students involved in activities such as discussions, question answering, and seatwork problems does not automatically guarantee successful knowledge construction. The nature of students' metacognitive knowledge and the quality of their learning strategies are seen to be critical factors in successful learning outcomes.

Akku , Kadayifçi, Atasoy & Geban (2003) studied under the title Effectiveness of Instruction Based Constructivist approach on Understanding Chemical Equilibrium Concepts. The purpose of this study was to identify misconceptions concerning chemical equilibrium concepts and to investigate the effectiveness of instruction based on the constructivist approach over traditional instruction on 10th grade students' understanding of chemical equilibrium concepts. The subjects of this study consisted of 71 10th grade students from two chemistry classes of the same teacher. Each teaching strategy was randomly assigned to one class. The data were obtained from 32 students in the experimental group

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

taught with instruction informed by the constructivist approach and 39 students in the control group taught with traditional instruction. The data were analyzed using analysis of covariance. The results indicated that the students who used the constructivist principles-oriented instruction earned significantly higher scores than those taught by traditional instruction in terms of achievement related to chemical equilibrium concepts. In addition, students' previous learning and science process skills each made a significant contribution to the achievement related to chemical equilibrium concepts. In light of the findings obtained from the results, an additional misconception of chemical equilibrium concepts was determined in addition to the misconceptions in related literature. This misconception is that when one of the reactants is added to the equilibrium system, the concentration of the substance that was added will decrease below its value at the initial equilibrium.

Burrowes (2003) studied under the Title Results of a Controlled Experiment That Tested the Effectiveness of Lord's Teaching Model in: 1. Helping students achieve better grades on standard midterm exams. 2. Develop higher level thinking skills. 3. Modify their attitude towards biology at a large, urban university.' Researcher taught two large sections of General Biology I (cellular and molecular biology). One section was arbitrarily designated as control group (100 students) and was taught in the traditional manner, where instruction was based on lecturing, with little opportunity for student interaction. The other section was designated the experimental group (104 students) and taught following Lord's (1998) constructivist method. Groups were formed by four students seated next to each other in a row (Figure 2). After all cooperative groups were established; each group received a legal-size manila envelope that contained important information: 1. One Cooperative Group Composition sheet 2. Four Student Profiles sheet 3. One Group Answers to Class Work sheet 4. Quiz sheet. This study provides substantiated evidence that teaching in a constructivist, active learning environment is more effective than traditional instruction in promoting academic achievement, increasing conceptual understanding, developing higher level thinking skills, and enhancing students interest in biology. In their final course evaluations, students in the experimental section commented that they enjoyed this class much more than their traditional classes felt they had learned more, made valuable friendships in their collaborative groups.

Kroesbergen, Van Luit & Maas (2004) studied under the title Effectiveness of Explicit and Constructivist Mathematics Instruction for Low-achieving Students in the Netherlands. In this study they compared the effects of small- group constructivist and explicit mathematics instruction in basic multiplication on low-achieving students' performance and motivation. A total of 265 students (aged 8-11 years) from 13 general and 11 special elementary schools for students with learning and/or behavior disorders participated in the study. The experimental groups received 30 minutes of constructivist or explicit instruction in groups of 5 students twice weekly for 5 months. Pre- and posttests were conducted to compare the effects on students' automaticity, problem-solving, strategy use, and motivation to the performance of a control group who followed the regular curriculum. Results showed that the math performance of students in the explicit instruction condition improved significantly more than that of students in the constructivist condition, and the performance of students in both experimental conditions improved significantly more than that of students in the control condition. Only a few effects on motivation were found. They therefore concluded that recent reforms in mathematics instruction requiring students to construct their own knowledge may not be effective for low-achieving students.

Liang & Gabel (2005) studied the Effectiveness of a Constructivist Approach to Science Instruction for Prospective Elementary Teachers. This study examines the effectiveness of a new constructivist curriculum model (Powerful Ideas in Physical Science) in improving prospective teachers' understanding of science concepts, in fostering a learning environment supporting conceptual

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:-	ISSN 2349-638x
Department Of Education,Shivaji University,Kolhapur (Maharashtra)	**Impact Factor 2.147**

understanding, and in promoting positive attitudes toward learning and teaching science and chemistry in particular. A non-equivalent pretest–post-test control-group design was employed. Analysis of covariance and repeated measures analyses of variance were performed to analyze the scores on concept tests and attitude surveys. Data from videotaped observations of laboratory sessions and interviews of prospective teachers were analyzed by employing a naturalistic inquiry method to provide insights into the process of science learning and teaching for the teacher trainees. The interpretations were made based on the findings that could be corroborated by both methodologies. In the current study, the PIPS approach did not demonstrate statistically significant superiority either in improving students' understanding of science concepts or in promoting positive attitudes toward science learning and teaching overall, especially for lower science performers. According to the classroom observation and interview data, it was found that a more cooperative and supportive learning environment had been created in the PIPS classrooms. The lower achievers in the PIPS classes enjoyed more and understood the target science concepts better than their counterparts in the ISS group did. It was found that all lower-achieving interviewees who perceived the actual learning environment as satisfactory also achieved a higher level of conceptual understanding and positive attitudinal development when compared with their counterparts who worked in a non-preferred learning environment. In contrast, the higher achievers in the ISS classes outperformed their counterparts in the PIPS group during the concept interviews, although more than 50% of them disliked the lecture type of teaching.

Overview of Researches based on Effect of Constructivist Approach

(Name & year, independent variable (IV) and dependent variable (DV), method & sample, tools and analysis of researches based on effect of constructivist approach)

No.	Name & Year	Title of the Research	IV/DV	Method & Sample	Tools	Analysis
1	Anthony (1996)	Active Learning in a Constructivist Framework	Constructivist framework/ Activelearning	Exploratory12 Sixth grade math students	Observations, Interviews, student-diaries, Student workbook & Questionnaire	Qualitative
2	Akku, Kadayifçi, Atasoy, Geban(2003)	Effectiveness of Instruction Based Constructivist approach on Understanding Chemical Equilibrium Concepts.	Constructivist approach/ understanding chemical equilibrium concept	Experimental 71 10th grade students	Test	ANCOVA & Qualitative

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:-	ISSN 2349-638x
Department Of Education,Shivaji University,Kolhapur (Maharashtra)	Impact Factor 2.147

3	Burrows (2003)	Results of a Controlled Experiment That Tested the Effectiveness of Lord's Teaching Model	Lords' teaching model/ achievement	Experimental 204 university students	Composition sheet, student profile & class work sheet, quiz sheet	t-test
4	Kroesbergen, Van Luit & Maas (2004)	Effectiveness of Explicit and Constructivist Mathematics Instruction for Low-achieving Students in the Netherlands	Constructivist mathematical instruction/ achievement	Experimental 265 elementary students	Test	t-test
5	Liang and Gabel (2005)	Effectiveness of a Constructivist Approach to Science Instruction for Prospective Elementary Teachers	Constructivist approach/ concept understanding	Experimental 30-30 prospective teachers	Test & Interview	ANCOVA

Table 1

Conclusion

Researcher reviewed five study related researches to effect of constructivist approach on different variables. The dependent variables were active learning, achievement and understanding concepts. Four studies were conducted using experimental method and one using exploratory method. Sample selected were ranged from 12 to 265. Two study included elementary school students, one high school students, one university students and one teacher as a sample of the study. Three studies used test for the measurement of dependent variable and two used interview, one used student-diaries, Student workbook & Questionnaire, student profile sheet, one group answer to class work sheet, one quiz sheet. Four studies used quantitative methods and one qualitative method for the analysis of the data.

Kroesbergen, Van Luit & Maas (2004) found that math performance of students in the explicit instruction condition improved significantly more than that of students in the constructivist condition. Liang and Gabel (2005) found that PIPS approach did not demonstrate statistically significant superiority either in improving students understanding of science concepts. Akku , Kadayifçi, Atasoy, Geban (2003) found that students who used the constructivist principles-oriented instruction earned significantly higher scored than those taught by traditional instruction in terms of achievement.

References

Anthony, G. (1996). Active learning in a constructivist framework. *Educational Studies in Mathematics, 31*(4), 349-369.

Akkus, H., Kadayifci, H., Atasoy, B., & Geban, O. (2003). Effectiveness of instruction based on the

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

constructivist approach on understanding chemical equilibrium concepts. *Research in Science & Technological Education, 21*(2), 209-227.

Best, J. W., & Kahn, J. V. (2009). Research in Education (10th Ed.). New Delhi: PHI Learning Private Limited.

Burrowes, P. A. (2003). A student-centered approach to teaching general biology that really works: Lord's constructivist model put to a test. *The American Biology Teacher, 65*(7), 491-494

Kothari, C. R. (2009). *Research Methodology Methods and Techniques (2nd ed.).* New Delhi: New Age International Publishers.

Kroesbergen, E. H., Van Luit, J. E. H., & Maas, C. J. (2004). Effectiveness of explicit and constructivist mathematics instruction for low-achieving students in the Netherlands. *The Elementary School Journal, 104*(3), 233-251.

Liang, L. L., & Gabel, D. L. (2005). Effectiveness of a constructivist approach to science instruction for prospective elementary teachers. *International Journal of Science Education, 27*(10), 1143-1162.

IMPLEMENTING CONSTRUCTIVIST APPROACH IN TEACHING-LEARNING PROCESS THROUGH INTERACTIVE MULTIMEDIA IN PRIMARY TEACHER EDUCATION

Prof. Dr. Pratibha S. Patankar,
Professor & Head,
Department of Education,
Shivaji University, Kolhapur.
India- 416004.
pratibhaspatankar@gmail.com
Mo. +91 9960192103

Megha S. Jadhav [b]
Ph.D. Research Scholar,
Assistant Professor,
D.K.Shinde College of Education,
Gadhinglaj, India-416502
meghasgouri@gmail.com
Mo. +91 8275182986

Rajendra L. Chavan[c]
Ph.D. Research Scholar,
UGC NET-Senior Research Fellow,
Department of Education,
Shivaji University, Kolhapur.
India-416004.
Mo. +91 9665318867

Abstract

Constructivism is a buzzword in the field of Education. It is a philosophy, a learning theory, an approach to teaching-learning process, but its implementation is a pedagogic challenge to teachers. Constructivism emphasizes that knowledge is not transferred from one to another; rather it is constructed through reflective abstraction, through the learner's cognitive structure and processing through active and participative learning, causing meaningful learning. This approach offers use of such teaching-learning strategies such as computer multimedia technology, concept mapping and collaborative techniques etc. which deliver the content meaningfully.

The study has been undertaken in the form of Major Research Project, through computer interactive multimedia software's were developed for teaching and learning of special education for D.Ed , student- teachers The design of the study was multi-method type where both the survey and quasi-experimental methods were used. Appropriate statistical tools were used for data analysis and concluded that the developed interactive multimedia software packages were very effective for meaningful learning by studying the cognitive structure of student - teachers through the concept mapping.

Key words- *constructivism, pedagogy, reflective abstraction, cognitive structure, concept mapping, student – teachers, interactive multimedia etc.*

Introduction

Constructivism is a buzzword in the field of Education. In the recent years, it has emerged as a new approach to education and learning theory which proves that learning is an active process in which learner construct and internalize new concepts, ideas and knowledge based on their own present and past knowledge and experiences. This is pedagogic challenge to teachers and emphasizes that knowledge is constructed through reflective abstraction, through the learner's cognitive structure and processing through active and participative learning, causing their meaningful learning. Thus, learning moves away from the stimulus-responses/behaviorist paradigm to the consructivist paradigm, where learner actively constructs meaning rather than passively accepts meaning.

Constructivism has its roots in Jean Piaget's stage theory of cognitive development. Constructivism believes that learner first assimilate external environment through its own way, which forms Schema ,which are more mobile and better able to inter co-ordinate through processes called accommodation and assimilation. This theory believes more on learning by doing so that learning will be

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

more profound. Constructivism focuses on different aspects of education. But it has wide impact on learning theories and teaching methods.

Constructivism gave new approach to teaching & learning and now due to researches in the field of neuroscience, which supports Constructivism, is bringing revolution in the field of education. Constructivism is based on construction of own perspective of the world through individual experiences & schema, which leads to learning.

Special Features of Constructivism

Special features of constructivism are as follows:

- Learning means interpretation of new experiences by the individual through own experiences.
- Learning is internal process.
- Learners are totally active in learning process.
- Change in behavior is due to personally interpretation of facts, concepts & generalization.
- It gives biological explanation as brain based learning.
- Emphasizes students input to curriculum.
- Stresses on meaningful learning.
- Teaching-learning methods are learner-centered.
- Learning process is important

To some, it may come as a surprise to learn that knowledge is constructed not discovered. People discover knowledge is a common myth. Discover may play a role in the production of new knowledge, but it is never more than just one of the activities involved in creating new knowledge. The construction of knowledge begins with observations of events or objects through the concepts, we already possess. Construction of knowledge can involve naturally occurring events or objects and events or objects that human construct.

Constructivism believes that cognitive structure of learner should be taken into account for meaningful learning. Cognitive structure means student's present knowledge or experiences of certain things. Constructivism felts that all education programmes should provide learners with the basis for understanding why and how new knowledge is to be related to what they already know and give them the affective assurance that they have the capability to use this new knowledge in the new context. Schooling is too often an assault on student's egos because the role arbitrary, verbatim instruction so common in classroom with few intrinsic rewards. Students, who do not seek meaning during teaching-learning often fail for them, school is frustrating place in which most of them suffer the ridicule of teachers, classmates and parents. We commonly blame these victims for failing at rote learning and categorize them as learning disabled, under achievers, educationally backwards, school dropouts, etc. The cost of these failures both to the individuals and society is enormous.

Constructivism claims that reality is more in the mind of the knower and the knower constructs his or her knowledge from the environment they are in. And the task of teacher is to provide material, explain, support and facilitate, deliver the content meaningfully so that student analyze and synthesize as much of their own knowledge as possible.

The teaching-learning strategies offered to implement constructivism in classroom are use of collaborative techniques, experienced learning, use of advance organizer, concept mapping, use of computer multimedia etc. Interactive Computer multimedia provides enrich content knowledge, direct learning experiences, learner can learn by his/her own pace of time, provide feedback, motivation, relate his/her new experiences to previous knowledge causing their meaningful learning, cater individual differences etc. Hence, the study has under taken to develop Interactive Multimedia software's on

Page63

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

special Education which is designed from a constructivist view point. The cognitive structure of student teachers related to the subject special education was studied by a technique concept mapping, in which their prior knowledge is elaborated and changed on the basis of fresh meaning, negotiated with peers and teachers. Concept mapping stimulate this process by making explicit and meaningful learning, which involves high level of cognitive performance

Title of the study

Implementing Constructivist Approach in Teaching-Learning Process through Interactive Multimedia in Primary Teacher Education

Objective of the Study:

i) To develop Interactive Multimedia Software Package for D.Ed. Students-teachers on Special Education.
ii) To Study the effectiveness of developed Interactive Multimedia Software Package for D.Ed. Students-teachers.

Research assumptions

1) The interactive multimedia can be planned, designed and constructed based on student-teachers cognitive structure on special education
2) Concept mapping is one of the methods to study cognitive structure of student teachers
3) Interactive multimedia helps in meaningful learning of the topic special education.

Research Hypothesis

The developed interactive multimedia software's on special education are effective for meaningful learning

Null hypotheses

H_{01} There is no significant difference in the D. Ed. Student-Teachers Achievement scores in post test of control group and experimental group.

Significance of the study

The developed interactive multimedia package will enhance meaningful learning related to special education.

Research Methodology

The present study is both descriptive and experimental in nature in which present status and cognitive structure of student teachers on special education was studied by concept mapping through survey method and effectiveness of the developed multimedia was studied by experimental method

The study was quasi-experimental in nature where non randomized pre and post test design was used.

Page64

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Tools for the Study

The tools used for the present study were Achievement test, Opinionnaire, Rating scale and concept maps.

Sample for the study

The population of the study was D.Ed. student-teachers in Maharashtra State. The sample of the study was D.Ed. student-teachers in D.Ed. Colleges present in Kolhapur District.

For the purpose of the study non-probable sampling design was used were D.Ed. Colleges and student-teachers were selected purposively.

The development of interactive multimedia requires considerable time, resources, careful planning and experimentation. The present study is based on waterfall model of multimedia development which has following stages:
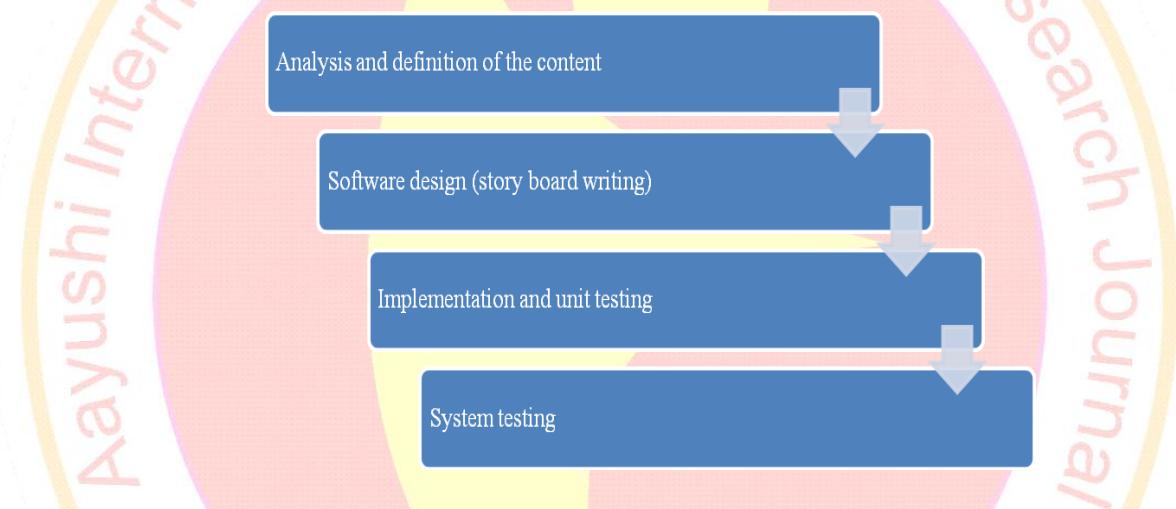

Figure 1: Stages of multimedia development

Development of Story board

Storyboards are graphic organizers in the form of illustrations or images displayed in sequence for the purpose of pre-visualizing a motion picture, animation, motion, graphic or interactive media sequence.

More recently the term storyboard has been used in the fields of software development and instructional design to present and describe written, interactive events as well as audio and motion, particularly on user interfaces.

For the present study the story board is the representation of how the interactive multimedia software will be executed and followed steps such as Analysis of content -

Preparation of Storyboard - Evaluation by experts - and Implementation

The software for D.Ed., student-teachers were developed by synchronizing Text, Audio, Graphics, Photos, Diagrams, and Documentary these multimedia effects on the following content.

Education of Deprived children for D.Ed. student-teachers.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Analysis and interpretation

Quantitative and qualitative analysis and interpretation was done by using suitable statistical techniques. Null hypotheses were tested by using t test and objective wise conclusions were drawn.

Testing of Hypothesis

Null Hypothesis H0

There is no significance difference in the D.Ed. student- teachers achievement scores in post test of control and experimental group.

Table No.1

(Difference between post test scores of control and Experimental Groups of D.Ed. student-teachers)

Group	Variable	Mean	SD	Calculated 't' value	Table value (t)	Level of Significance	Degrees of freedom
Control	**Post**	**11.3**	**1.92**	8.84	2.38	0.05	78
Experimental	**Post**	**17.4**	**1.24**		1.67	0.1	

Interpretation

It is interpreted from table no.1 that the difference between post test scores of control and experimental groups of D.Ed. student-teachers is significant. Hence, hypothesis no.1 is rejected. Hence, experimental group achieved higher in the post test due to the effect of the developed interactive multimedia software package.

Results

There is significant difference between the means of the control group and experimental group after treatment of Interactive multimedia software package with respect to the achievement in special education.

Discussion of Findings

The findings of the present study are relevant to previous study conducted by Wagh, S.K. (1991), Uplane, Megha M., SonawaneSanjeev A. and Padmini, M. S.(2011) Patankar, P.S. (2012) where they have also suggested & developed Interactive multimedia software package.

Conclusions

It is concluded that the developed interactive multimedia software package for D.Ed., student-teachers found to be effective, easy to handle and useful for meaningful learning of the topic special education.

In the present study concept mapping strategy was used to understand the cognitive structure of student-teachers about special education which helped in implementing constructivism approach.

Thus, interactive multimedia which has provided enriched content knowledge provided immediate feedback, catered individual differences, helped student teacher to learn meaningfully the

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- Department Of Education,Shivaji University,Kolhapur (Maharashtra) | ISSN 2349-638x Impact Factor 2.147 |

content special education hence, interactive multimedia is useful tool in implementing constructivist approach.

<u>References in APA Style</u>

Agrawal, J.C. (2003) *A Essentials of Educational Technology: Teaching Learning-Innovations in Education*, New Delhi: Vikas Publishing house,

Best, John & Kahn (2003). *Research in Education,* Prentice Hall, New Delhi.

Chauhan, S.S. (1989*). Education of Exceptional Children*, Indus publications, New Delhi

Novak J. (1970) *Learning How to learn* (3rd edition), New York: Cambridge University.

Novak J.(1983) The use of concept mapping and knowledge Vee mapping with junior high school science students. *Science Education.*67 (5), 625-645

Reddy, L. (2000). Education of Children with Special Needs, Discovery publishing house, New Delhi.

Patil, P. B. & Patankar, P. S.(2012).Technology For Challenged Learners Electronic International Interdisipinary Research Journal, Vol.I, Issue-III. pp.126-131 Retrived March 1, 2016 from http://eiirj1.weebly.com/uploads/1/0/8/0/10800505/11pp.pdf

Patankar, P. S. (2015).Constructivist approach for Practice Teaching in Teacher Education Programme, Scholarly Research Journal for Interdisciplinary Studies, Special Issue, pp.1-4 Retrieved, 8 March, 2016 from http://srjis.com/wp-content/uploads/2016/02/Patankar.pdf

Patankar, P. S., Baviskar, C. R. & Padmini, M. S. (2005). Concept mapping: A New Technique for Science Education, Edutrack, Vol. 5(2), pp.20-22.

Patankar, P. S. (2012).Constructivist approach for Practice Teaching in Teacher Education Programme, Scholarly Research Journal for Interdisciplinary Studies, Special Issue, pp.1-4 Retrieved, 8 March, 2016 from http://srjis.com/wp-content/uploads/2016/02/Patankar.pdf

Patankar, P. S. (2009). Development of Concept Food Chain Among IX STD Students By Concept Mapping, Gyanodaya, Vol. 2(2), pp.78-81

Uplane, Megha M., SonawaneSanjeev A. and Padmini, M. S.(2011) CAI: An Effective Instructional Method for Secondary School low Achivers. Edutracks VOL.10,No.7

Wagh, S.K.(1991). Development of a multimedia instructional system for remedial measures in fractional system. Ph.D. Thesis Kolhapur: Shivaji University.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

USE OF CONSTRUCTIVIST PEDAGOGY IN SCIENCE EDUCATION

Mrs. Geeta Satish Joshi

M.Sc., M.Ed., SET (Education),

Research Student, Dept. of Education,

Shivaji University, Kolhapur.

Dr. (Ms) Pratibha S. Patankar

M.Sc., M. Ed., M.A., Ph. D.

Prof & Head, Dept. of Education,

Shivaji University, Kolhapur.

Abstract

Science is a systematic enterprise that builds and Organizes knowledge in the form of testable explanations and predictions about nature and the universe. It indicates that Science is an important subject for all human beings and should be studied in detail.

- The expectations of scoring good marks lead to search or develop new study techniques.
- Most Scholastic results suggest that children of upper primary level face difficulties during Science Studies. Parents always expect a good grade in Math and Science.
- For the well being of Society there is need to develop new techniques to make Science teaching interesting which will motivate students to study Science subject fearlessly.

This Paper discusses about the use of case studies as an educational tool for upper primary level students.All teachers make use of relatively informal procedures for determining what pupils have learned. Although most teachers choose to supplement such techniques with more reliable and objective procedures .A traditional and essential tool of the classroom teacher is the teacher made test, undoubtedly the most widely used procedure for assessing pupil achievement.

Teaching and learning styles are, by their very nature, changing and in recent years there has been a noticeable move from lecture-based activities towards more student-centered activities. Case studies are an increasingly popular form of teaching and have an important role in developing skills and knowledge in students.

Introduction

The philosophy of constructivism evolved from dissatisfaction with traditional Western theories of knowledge. Constructivism postulates that knowledge cannot exist outside our minds; truth is not absolute; and knowledge is not discovered but constructed by individuals based on experiences. (Crotty 1998, 42; Fosnot 1996; Hendry, Frommer, and Walker 1999).

The basic assumptions and principles of the constructivist view of   learning are as follows-

1) Learning is an active process.
2) Learning is an adaptive activity.
3) Learning is situated in the context in which it occurs.
4) All knowledge is personal and distinction. This term tells that the information is constructed by the student.

Constructivism is a view of learning bases on the belief that knowledge is constructed by learners through an active, mental process of development; learners are the builders and creators of meaning and knowledge.

Let us discuss about one more different way to construct knowledge. Our goal in thispaper is to give information about how we can use case studies as an Educational tool to improve student's achievement in Science Subject.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:-	ISSN 2349-638x
Department Of Education,Shivaji University,Kolhapur (Maharashtra)	Impact Factor 2.147

To achieve this goal, my paper is based on the facts given in the textbook of Science of Std 6th of Maharashtra State for Semi English Medium. It explains a case study based on an important fact of Science that is Work. I conclude my paper with a new aspect of science teaching which will help students to learn science easily.

Objectives:-

The primary objective of this article is to provide teacher educators and teachers with a richer understanding of strengths of Constructivism offering concrete pedagogical strategy for classroom application.

Secondary objective is to explain the importance of use of case studies while teaching science subject at upper primary level.

This paper shows that how the theory of constructivism helps to apply it in Classrooms.

Cause:-

Constructivism has been extremely influential in Science education.

The focus of this research is on learners strategy when studying to themselves prior to problem solving.

Constructivist teaching creates motivated learners. A Science subject involves constructing new ideas and teacher should create environments in which students can construct their own ideas and understanding.

In a constructivist classroom the focus is on students who are discovering concepts and facts for themselves.

The growing popularity in science education of constructivism is a hopeful sign of renewed interest in educational theory and practice. According to constructivism, knowledge is constructed involving social processes, interaction with environment required a great resource frame work, which encourage learner centered experiences, provide opportunities for learners to work together.

Constructivist teaching creates motivated learners. Teacher should create environments in which students can construct their own ideas and understanding. Constructivist teachers encourage students to assess how classroom activities help them gain understanding. In a constructivist classroom, knowledge is no longer something that should be memorized, but dynamic views of the world we live in.

Need :-

The classroom teacher must frequently assess the level of pupil achievement. The teacher's major business is to produce changes in pupils, and the degree of teachers' success can be determined only through regular assessments of what the pupils have learned.

All teachers make some use of relatively informal procedures for determining what pupils have learned. Teacher's planning of any instructional activity must take into account pupil aptitude for that type of learning. By comparing previous years result with current academic year, we can see that near about 50% students cannot get marks greater than 60% in science. It is always demanded by parents to improve the result in Science subject.

Use of case studies is one of the innovative method along with beneficial factor like self learning.

Page69

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:-	ISSN 2349-638x
Department Of Education,Shivaji University,Kolhapur (Maharashtra)	Impact Factor 2.147

Advantages:-

1) The main benefit of constructivism is that students enjoy learning more when they are actively involved than when they are just given information about a subject. Here we can observe that constructivism focuses more on understanding and learning to think, unlike traditional teaching which focuses on memorization.

2) It develops students' ability to express and use their knowledge in myriad of ways in real life situations.

3) Students can improve their communication skills by collaborating and exchanging ideas with the rest of the class.

Case Studies and Constructivism:

Now a days teachers are using developing new techniques of teaching so that students can learn something by themselves. One such a technique is use of case studies while teaching science subject.

Case Study:-

It is an ideal methodology when a holistic, in depth investigation is needed. (Feagin, Orum and Sjoberg, 1991).

Case study is a process of record of research into the development of particular person, group or situation over a period of time. (Chrisensence, 1981)

Case studies tend to be selective, focusing one or two issues that are fundamental to understand the system being examined.

The case study method also incorporates the idea that students can learn from one another by engaging with each other and with each other's ideas, by asserting something and then having it questioned, challenged and thrown back at them so that they can reflect on what they hear, and reflect on what they hear, and then refine what they say. (Boehrer 1990)

Case study for this research paper is based on the textbook of General Science of Std 6 of Maharashtra State Board for 2015-16.

Example of a Case Study:-

This is an example of a case study based on the text book of General Science of standard VI of Maharashtra, (Semi English) State Board,

CASE STUDY

Class: VI   Subject: General science

Marks: 10   Time: 30 minutes

- Instructions :
- This is the Case Study on the chapter-9. Work and Energy
- All questions are compulsory
- Write answers in points
- Read the information and questions carefully to understand what is expected.

Read the paragraph given below and answer the following questions:

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:-	**ISSN 2349-638x**
Department Of Education,Shivaji University,Kolhapur (Maharashtra)	**Impact Factor 2.147**

Introduction:

Work is an important concept related to our daily routine. Every student must know what is work, when it is said that work is done, how to do a work, what are the required things to do work.

Lets read the passage given below and know more about work –

One day Chintu was waiting on the bus stop holding his school bag which was heavy.He got tired standing at the same place.Chintus' friend Amit came and, said ' O!God! I am so tired, I was running on the ground for my race practice'. Chintu said, 'Though I am standing at one place then also I am tired'.After some time Pinky came and said, 'Today I studied for three hours, I have done a lot of work'.By the side of the road some people were lifting a heavy box by applying a lot of force**.**

Conclusion:
1) To do work force is required.
2) Work done changes the position, shape, size of the object.
3) When force is applied on any object and the object moves then work is said to be done.

Reference Website :
Questions :

Q.1) Choose the Correct option –
1)In the above passage, work is done by -----.
      a) Chintu   b) Amit   c) People
2)Work is not done by Chintu because ----.
      a) He was standing at one place b) He was talking with Amit
      c) He was waiting for the bus
3)To do work ---- is required.
      a) weight   b) force   c) friend

Q2)Rewrite the statements correctly –
1) Force is not required to do work.
2) If object is not moved, work is said to be done.
3) Studied for three hours is an example of work done.

Method to conduct a case study in a class :
1) Design the case study
2) Conduct the case study
3) Analyze the case study evidence.
4) Develop the conclusions, re commendations implications.

When teacher will give question paper of Case Study to students, students will read it, try to understand the topic, solve questions given below. Teacher will check the answer sheet and can explain student where he/she is lagging behind, what are correct answers, which basic concept is related to the case study.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Analyzing the Result:-

- Analyzing results for a case study tends to be more opinion based than statistical methods.
- The usual idea is to try and collate data into a manageable form and construct a narrative around it.
- With the help of student's answer sheets, teacher can get the idea that how and what type of problems students are facing, from that particular lesson of Science has.

Strengths of using a Case Study Method :-

Teacher distributes the paper of case study and students will solve it. This method has much strength such as –

1) It is a reliable methodology of teaching, learning process, when executed with due core.
2) It helps students to develop some confidence and competence in learning.
3) The case study helps students to apply their knowledge.
4) Reading as well as writing skills of the students will get positive impact due to solving case study based on their Science lesson.
5) It will create interest towards studies amongst students.
6) Teacher can give different types of questions (objective/subjective) based on the selected topic.
7) It gives beneficial learning experience to the learners.

Conclusion:-

Constructivism develops student's ability to express and use their knowledge in a myriad of ways in real life situations.

Constructivism can be applied to many diversified fields. It is an important pedagogical tool to strengthen the skills of students.

We can consider use of case studies as an instructional strategy that can be highly beneficial for the effective learning outcomes in science education.

Case studies also encourage the students to build meta-skills into their educational process or more precisely learning how to learn. Case studies can involve not only a wide range of topics but can be pitched at various levels of complexity and detail. A good case study makes the student think critically about the information presented, and then develop a thorough assessment of the situation/fact/concept leading to a well thought our solution. We surely conclude that, case studies are a great way to improve a learning experience, because they get the learner involved, and encourage immediate use of newly acquired skills.

References:

Journal of Case Studies in Education

Claire Davis and Elizabeth Wilcock, Teaching materials using Case Studies

Leslie P. Steffe, Jerry Gale,The development of a constructivist Constructivism in Education.

Social studies, trivial constructivism, and the politics of social knowledge pp. 156-172

Why constructivism must be radical pp. 23-28

Paperback ISBN: 9780521109604

Julie Rainer Dangel, An Analysis of Research on Constructivist Teacher Education.

C.Mauritz Lindvall and Anthony J. Nitko,Measuring Pupil Achievement and Aptitude,Second Edition,New York:Harcourt Brace Jouvanovich,Inc.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

A STUDY OF THE LEARNERS' INVOLVEMENT IN CONSTRUCTING KNOWLEDGE WITH RESPECT TO TEXTBOOK OF GENERAL SCIENCE OF 8TH STD.

Dr. Madhuvanti Dilip Kulkarni

Assts. Professor ,

S.P.S. College of Education,

Sangli.

e-mail – k.madhuvanti@yahoo.com

Mobile - 9403006436

Introduction

The origin of constructivism is 'Con struere' means ' to give structure or to arrange.' It is latin word. Gimbatista Vicko (1910) is recognized as philosopher of constructivism and John Dewey , Piaget (1954), Bruner(1960) Asubel, Vigotasky (1987), Arnest Glesserfield are important contributors in this field.

Constructivism always believe on the thing that learning always builds upon knowledge that a student already knows. Constructivist teaching is based on the belief that learning occurs as learners are actively involved in a process of meaning and knowledge construction as opposed to passively receiving information. Learners are the markers of meaning and knowledge. Most of the methods of teaching rely on some form of guided discovery. Here the teacher avoids direct instruction. He attempts to lead the student through questions and activities to discover, discuss , appreciate , verbalize the new knowledge.

Learning should involve activities to process the new material, linking it to what the student already knows. Tasks should be authentic, set in a meaningful context and related to the real world.

Constructivism is a theory of learning based on the idea that knowledge is constructed by the knower based on mental activity.

Role of Learner in the Constructivism

The learner is key in constructivist theory. The learner must develop certain depositions personally and socially in order to thrive in the constructivist environment. The learner plays a pivotal role in the learning process. There are five depositions that the learner should have to help them become active and autonomous learner. These are Be inquisitive, Take initiative, Be confident, Be inventive, Be reflective(project construct).Inquisitive means he asks many questions and wants to find out new information and will investigate. Initiative means he is able to make decisions independently and is a problem solver. Confidence means when one has to take risks and express their thoughts and ideas, into different contexts. Then learners who reflect will more than likely use their prior experiences to direct them in new situations and experiences.

Knowledge building occurs when all learners are actively involved ,engaged. They take responsibility not only for their own, but for others learning. Students learn from each other as well as the teacher. Students learn better by doing. For students, to change their world view requires work. Allowing and creating opportunities for all to have a voice promotes the construction of new ideas.

Objective of the Study

To study the learner involvement in constructing knowledge with respect to Textbook of General Science of 8th Std. (Semi English Medium)MSBTPCR,Pune.

Need of the Study - Role of the Textbook

Textbook does not stand alone. Teachers do need a manual with specific information about how to begin, conduct and end each lesson given in the book. It is proposed that textbooks should include discussion to explain how the suggested activities and context meet the curriculum objectives, also make suggestions for circumstances. Textbook also give guidelines for teaching methods, resource material, creative thinking, decision making and reflective thinking.

Therefore, Researcher analyzed 8th standard General Science Textbook for Semi English Medium.Maharashtra State Bureau of Textbook Production and Curriculum(MSBTPCR),Pune has launched a new series of science textbooks for std. 3rd.to 8thfrom the academic year 2006-2007in stages.This series is based on the "Primary Education Curriculum-2004.prepared and approved by State Government. Quantitative Analysis techniques were employed to analyze the textbook. The techniques were developed by Zemenu Mihret Zewdie, Debre Marcos college of Teacher Education, Ethiopia. The categories for analysis taken were learning objectives, activities, figures and diagrams, reviews and exercises. Index values for learners involvement were calculated in each category. It is very important to involve in learning for learner when it is expected that learner constructs knowledge.

Analysis of General Science Textbook of 8th Std. (Semi English)

Contents of The Textbook—

Total 18 Units are there.The Names are—1.Stars and Our Solar System.2.Biological Diversity.3.Atmospheric Pressure.4.Magnetism.5.The Structure of an Atom.6.Chemical Reactions and their Types.7.The Structure of a cell and Microorganisms.8.Diseases.9.Reflection of Light.10.Sources of Energy.11.Electric current.12.Properties of Substances.13.Metals and Nonmetals.14.Carbon and Carbon Compounds.15.Air.16.Soil.17.Agriculture.18.Animal Husbandry.

Category I Learning Objectives :-

For 8th Std. for the subject General Sciences following learning objectives are given.
1. To acquire the skills of observation , statement, reporting, classification, comparisons, finding correlation .
2. To acquire the skills of cause and effect relationship & application.
3. To acquire the skills of conducting experiments, drawing inferences.
4. To develop a scientific temper and neccessary life-skills.
5. To develop the sensibilities towards environmental and scoial awareness.

Learning Objective

$I_0 = \frac{a}{b}$

I_0 = Index of learning objectives.

a = Total No. of units with objectives

b = Total No of units.

Calculation

Index $= I_0 = \dfrac{a}{b}$

$I_0 = \dfrac{18+5}{18} = \dfrac{23}{18} = 1.2$

Category II - Activities

$I_A = \dfrac{a}{b}$

a = No. of pages that have activities.

b = Total No. of pages

Calculation

Index $= I_A = \dfrac{a}{b}$

$I_0 = \dfrac{18}{200} = 0.09$

Category III - Figures and diagrams

$I_{FD} = \dfrac{b}{a}$

a = Figures and diagrams are used for illustrative purpose.

b = Figures and diagrams requiring students to analyze data

or perform some activity.

Calculation

Index $= I_{FD} = \dfrac{b}{a}$

$\dfrac{58}{71} = 0.8$

Category IV - End – of – unit Exercises

$I_E = \dfrac{C+D}{a+b}$

a = questions that have answers directly from the textbook

b=questions asked for definitions..

c = questions requiring the students to apply what they have

learned to new situations.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:-	ISSN 2349-638x
Department Of Education,Shivaji University,Kolhapur (Maharashtra)	Impact Factor 2.147

d = questions requiring students for problem solving.

Calculation

Index = $I_E = \dfrac{c+d}{a+b}$

$= \dfrac{73+48}{213+17}$

$= \dfrac{121}{230}$

= 0.52

Category – V- Reviews at the End of Units

a = Reviews that repeat the conclusions of the unit and

summarizes the same idea from the texts.

b = Reviews that raise new questions , the answers to which

are not available in the text or are subjects of current

research in science.

Calculation

Index $= I_R = \dfrac{b}{a}$

$= \dfrac{0}{18}$

= 0

<u>Interpretation of Learner Involvement</u>

The interpretation , following guideline was given by the author.

<u>Guideline for Learner involvement index value interpretation.</u>

Index Value	Interpretation of the index value
0	No students involvement.
< 0.4	The value is below average. The category of the textbook is authoritarian, not challenging , due emphasis is given for memorizing facts and definitions.
1	Ideal and balance. The material consists of equal number categories requiring for student involvement and those requiring no student thinking.
1.5	The textbook contains no much contents, only questions or activities. There is no enough information for students to work with.
Infinity	The textbook is full of points requiring students to do analysis . No contents .

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Conclusion

According to the guideline and calculated index value the following conclusion has been drawn

Category	Calculated Index Value	Result
Learning Objective	1.2	Ideal and balance. The material consists of equal number categories requiring for student involvement and those requiring no student thinking.
Activities	0.09	No students involvement.
Figures and Diagrams	0.8	The value is below average. The category of the textbook is authoritarian, not challenging , due emphasis is given for memorizing facts and definitions.
End of Unit Exercises	0.52	The value is below average. The category of the textbook is authoritarian, not challenging , due emphasis is given for memorizing facts and definitions.
Reviews at the End of the Units	0	No students involvement.

Researcher Remark

From the above conclusion it is clear that General Science Textbook for 8th std.(Semi English)is not prepared ideally with respect to constructivism. Learning objectives are related to constructivist approach.They are distributed in all units ideally and balance is maintained .But for the Distribution of Activities and Reviews at the End of the Units ,Students involvement is not considered. For figures and Diagrams, they are not challenging .with respect to this point textbook is Authoritarian. For Exercises, emphasis is given only for memorizing facts and definitions. So Researcher suggest to rediscuss and to arrange the text book. So as to fulfill the requirement of constructivist approach**.**

References

1.   Brooks. M & Greman Brooks.J(1999). The courage to be construtivist. Educational Leadership.
2.   www.wikipiade.com
3.   pubs.sciepub.com/education/2/1/8/#
8.   Textbook of General Science Std.8th (Semi English Medium)

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- Department Of Education,Shivaji University,Kolhapur (Maharashtra) | ISSN 2349-638x Impact Factor 2.147 |

CONSTRUCTIVE PEDAGOGICAL STRATEGIES OF B.Ed. ENRICHED PROGRAM: AN EXPERIENCE OF TEACHER EDUCATION WITH A DIFFERENCE.

Dr. Sujeet Kumar

Associate Professor,
Department of Education,
Guru Ghasidas Vishwavidyalaya,
(A Central University)
Bilaspur (Chhattisgarh) 495009
sujeetmishraedu@gmail.com

Education is viewed as an instrument to develop the cognitive qualities in an individual. Within this context, role of the teacher is well recognized as importer of knowledge and information to students who are the future citizens of tomorrow. So more demanding role of teacher has required education system in general and teacher education in particular to be creative in character. It has required innovations and initiatives to ensure that teachers are adequately trained and educated to cope with their changing and increasingly demanding role in society. Hence our education system has been developed in teacher based pre decided curriculum for students and in this setup students are learning to more theoretical knowledge less practical knowledge for self and society. As we know that many psychological intervention coming in educational setup and it is helping to sift the paradigm of education. Now we need to turn from teacher based curriculum which can say that pre decided curriculum to students based curriculum (I am not saying to student centric because student centric curriculum also made by teacher) and for this constructive approach of psychology help to us.

Constructivism state that is learning is an active, contextualized process of constructing knowledge rather than acquire it. Knowledge is constructed based on personal experience and hypotheses of the environment. Learner continuously tests these hypotheses through social negotiation. Each person has a different interpretation has construct of knowledge process. The learner is not a blank slate (tabula rasa) but bring past experience and cultural factors to a situation. Constructivism assumes that all knowledge constructed from the learners previous knowledge. On the bases of this above constructivist psychology B.Ed. Enriched program which called ANVESHNA EXPERIENCE has been developed by faculty of education Banasthali Vidyapith Rajasthan.

We know that NCTE has taken number of steps for raising the quality of teacher education system time to time. At the present time NCTE have recognized twelve types of teacher education programs as degree and certificate in all at pre-primary, primary, secondary, senior secondary, physical and distance Education courses. These entire teacher education programs are different from time duration as well as in course concern.

Apart from this teacher education program few Alternative models of teacher education program experimented by few teacher education institutions as practiced and succeed such as four-year integrated B.A/B.Sc. B.Ed. program of NCERT, four-year integrated B.El.Ed. Programme of Delhi University, Activity based B.Ed. program (Zero Lecture Program) of Devi Ahilya Vishwavidalay, Indore, two years B.Ed.program of NCERT, and the Anweshana Experience of Banasthali Vidyapith. NCTE has recognized that Anweshana Experience is 6th innovation of teacher education program after independence. From 1997 onwards strong innovative practice based on participatory self-learning process is in practice to educate secondary level teachers at Banasthali Vidyapith, Rajasthan.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

As we know that constructive approach of learning is very sensitive and it demand the strategy should be open to any aspect of education program i.e. curricular aspect, pedagogical aspects, administrative aspects co-curricular aspects etc. but a very common misunderstanding regarding constructive learning that teacher should never tell anything directly but instead should always allow them to construct knowledge for themselves. This is actually confusing the theory of pedagogy (teaching) with a theory of knowledge. In B.Ed. Enriched program avoid such type of misunderstanding and create an open environment for student in the faculty of education, not only in curricular aspects but non curricular aspects also.

A change in curriculum calls for a change in the curriculum transaction pattern as well. As professional preparation program it becomes imperative that teacher education tries out innovations that are responsive to field level changes and help in bringing about the clearer understanding of the processes involved in the professional preparation of teachers. Several teachers' training institutions try out innovations to improve teacher competencies and in this context participatory teachers training program is one of these innovative program, running in Banasthali Vidyapith.

Objective of the Practice

The main objective of the Practice is to trying out the possibility and feasibility of a totally learner evolved Teacher Education curriculum which provides for individualized learning routes, personalized goal priorities, coordinated learning efforts as well as continuous self appraisal and peer feedback. Evolving such a process would provide better insights into not only the substantive enrichment of Teacher Education Program but also the 'actual' potential of the prescribed time-resource inputs.

Context of the Program

There was a persistent feeling among the colleagues of faculty of education about the inadequacy of the existing teacher education curricular inputs. Regarding this context some of the unattended needs perceived by them were:

-Differential inputs to cater to individual needs.

-Appropriate interlinking of concepts across various dimensions.

- Learner autonomy and self development.

-Field familiarity and conceptual clarity.

A couple of the teacher educators took the initiative to try out learner centric way of preparing teachers in their subjects. This required an entirely different treatment for the selected students, with no specification of course outlines by teacher educators. The students needed a different orientation about how they would carry on their study. More significantly, teacher educators needed orientation in learner centric methodology. Approval of the various academic decision making bodies within the Vidyapith had to be procured for adopting an entirely non structured program which had no previous record anywhere, for comparison. The program needed official sanction from the National Council of Teacher Education (NCTE). All these were obtained and the Anweshana Programme was launched in 1997-98. The institution provided for adequate time for theory and practice and ascertained adequate provision for institution level practice, school based practice and whole school practice according to the learning needs discerned by learners.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- Department Of Education,Shivaji University,Kolhapur (Maharashtra) | ISSN 2349-638x Impact Factor 2.147 |

Selection of Students

The B.Ed. Enriched group comprised based on specific subjects out of total intake on the basis of entrance test. The details of group composition in respect of subject specialization are given in table No. -1

Table no. 1 Group Composition (according to teaching subject offered)

Teaching subject	Combination of Subject	Total no. of Student
Home Science		It is depend upon admission and no. of student every year change but normally it is 20 to till 28.
General Science	Home Sc.- G.Sc.	
Social Science	Social Sc.- History	
History	Social Sc.- Civics	
Civics		

Flexible Work Time Schedule

The B.Ed. Enriched program implementation is synchronized with the working schedule of department which is between 10:00am to 5:00 pm with 90 minute lunch break in between. The daily schedule is started with Morning Prayer along with the general B.Ed. group. The daily activities for the B.Ed. Enriched group are decided through discussion. Depending on the nature of task necessitated by the "problem" on hand, duration of work on that task is also estimated by the group. That is, before undertaking any activity the group had to make decision on who will do what? And how? Which source to tap? And the approximate time required. The whole day schedule is divided into four sessions, two sessions in morning 3 hours (10:00 am to 13:00pm), 1:30 hour lunch break and afternoon two session 2 hours (15:00pm to 17:00pm) but there is flexibility in the duration of each session as and when perceived necessary.

On special occasion such as organizing exhibitions, displays, presentations the group works, for longer hours at the stretch even beyond the regular working hours. Every day group student meet after end of last session along with concern teacher educator and share the whole day's experiences, lacunas and need for future effort, and also the preparation to be made at the own hostel for next day's work. Before leaving the department every student maintain their own attendance and record in which they mention about the activities that they have done in the whole day.

Description of the Practice

The three main interventions in the "B.Ed. Enriched group" experience are:

1. Initiation In view of participative program for the B.Ed. Enriched student as well as characteristics of the group, it is essential that they are adequately motivated and willing to find out their own way about. During the initial days greater emphasis is to given to "initiation" of students to self directed ways of functioning .For ensuring participation of every students in the process, they are given ICE-BREAKING session at which they interact freely with each other as well as teacher educators. An example of initiation session given below **Box-1 Initiation**

> 1- What she expect from B.Ed.?
> 2- What are the qualities of good teacher?
> 3- Share one most positive and one most negative experience with their teachers during their entire previous studentship.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

After initial hesitation, students began identifying group discussion, library study, discussion with teacher educators, school teachers, observation of school class and they like, as source for their clarifications. When they are able to identify more than one source and way, they are to decide on one specific way. Such initial sessions provide to be very significant for the further process

2. Sensitisation referred to the several activities which helped the student teachers to perceive their strengths and weaknesses, accept others, to discern significance of teacher roles, demands on teachers in the school and field conditions. Such inputs are provided throughout the program on appropriate. An example of sensitization session given below

Box-2 Sensitization

What do I expect from B.Ed.?

What are my strengths and weaknesses?

I introduce a friend

I wish I could………

Feedback sessions – how have I changed?

Why does it happen so?

Talk out

Knowledge update

What else can happen?

How to maintain one's stance amidst opposition?

Can we do something change?

I am today…….

Feedback session.

Some activities for sensitization provided for basis for further conceptual articulations and revised target setting. Students clarify several of their own behaviors as well as formulate conceptual question to be understood. Concept like motivation, risk taking, self initiative, goal setting, goal discrepancy, goal clarity and incentive boosting are sought to be understood during the subsequent days. Similarly, different sensitization activities and substantive inputs are concurrently carried on.

3. Substantive Inputting Substantive inputting in the form of discerning ideas and concept needed for understanding and carrying out teachers role as well as acquiring adequate understanding of other conceptual knowledge needed as technical, theoretical know how, and learning practically to use these. Substantive inputting comprises all the actual learning experiences other than sensitization and appraisal. It represents the process dimension of the teacher education program which is approached as problems perceived by group for becoming effective teacher. The variety of inputs or learning experiences undergone by group is given below

Table no. 2 kinds of instructional inputs

Academic	Non Academic	Practice Teaching
Large Group Discussion	Co-Curricular Activities	Competency Based Teaching
Small Group Discussion	Knowledge Update	Class Observation
Orientation	Exhibition	Teaching Planning- Annual, Unit and

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Lecture	Thematic Presentation	Daily plan
Assignments	Radio Broadcasting	Real Classroom Teaching with different methods
Self Learning Materials	Best out of west	
Audio Trigger	Self Reporting	Self Feedback
Visual Trigger	Event Celebration	
Audio –Visual Trigger	Food Without fire	Feed back by peer group
Computer Assisted Learning and Training		Feedback by Teacher Educators.
Workshops		Paper Setting with three dimensional blue print
Tutorials		Evaluation and showing Answer script to school students
Simulation Discussion		Criticism Teaching
Demonstration Discussion		Final Teaching
Presentation Discussion		Examination Duty
Feedback Session		
Testing		

Above all kinds of inputs are planned and executed by students. All these are made on the basis of expectation which they have listed. One major thing is that feedback session held after every task proved very useful as sensitize. A critical appraisal of how they arrived at the activity, nature and quantum of efforts put forth either individually or collectively, the quality of participation as well as that of the product or outcomes led to an appreciation of the challenges and self satisfaction all these provided, the spirit of team work mutual acceptance and self criticism. All these help in self development. Basically substantive inputting process a kind of learning which are taking student in three form, first through Individual work second through group work and third is teacher dependent work which can see easily as below diagram-
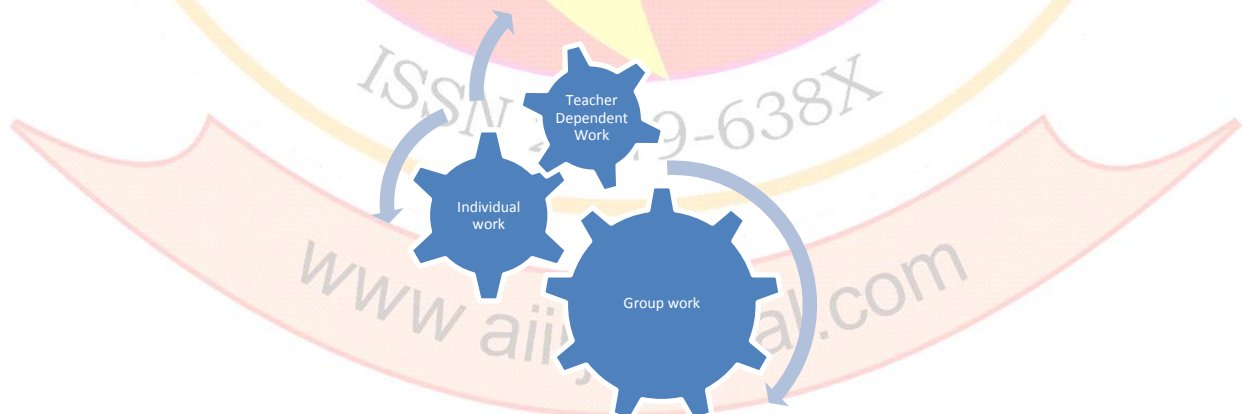
Curriculum Construction Evolved by Students of Enriched Group

Construction of curriculum is also totally students need based curriculum or in other words we can say that this program, learner decides that what they want to learn? As the time passes by the work or whatever they have learnt earlier, they divide and consolidate in the different segment and

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

with much discussion with teacher educators than they give final nomenclature to each segment. They list down the objectives, reference books and marks for each segment. Nomenclature objectives and marks differ from year to year. The whole curriculum is divided into five groups and component of these groups may change with each year, example are given in box below-

Box-3 Course Construction

Course of an year	Course of another year
Group A- Core Course	Group A- Core Course
Group B –Subject Based Course	Group B –Subject Based Instructional process for School Subjects
Group C - Special Area of Study	Group C - Special Area of Study
Group D - Preparation of Improvised Material	Group D – Hands on Experience
Group E – Practice Teaching Components	Group E – Practice Components

An example of nomenclature of course

Group A- Core Course

  Teacher and Instructional Process

  Teacher, Learner and Class Group

  Teacher and Pupil Performance Assessment

  Teacher and School

  Teacher and Society

  Teacher and Secondary Education System in India

Group B –Subject Based Course

  Teaching of School Subject-I

  Teaching of School Subject-II

Group C - Special Area of Study

  -Developing Instructional Material and Instructional Support Material

  -PLM, Remedial Material

  -Visual, Audio and Audio-visual Material

Group D - Preparation of Improvised Material

  Martial useful for Instructional purpose.

  Martial useful for Daily Life.

Group E – Practice Teaching Components

  Simulation Teaching

  Real Classroom Practice Teaching-I Round

  Examination Duty

  Real Classroom Practice Teaching-II Round

  Criticism Teaching

  Final Teaching

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Method of Evaluation

Their whole evaluation is divided into two major parts formative and summative. Weight age of each component in the group A,B, C, D, and E are decided by the group. Even the pattern of summative exam is also decided by students under the facility of Banasthali Vidyapith exam system.

Conclusion

On the basis of whole description of B.Ed. Enriched program (Anveshna Experience) is basically based upon constructive approach of learning psychology and all process of these pedagogical system of B.Ed. Enriched program developed in actual or practical base not theoretical. It is very difficult and sensitive process with total freedom of students. After completion of this program we are looking that student is too much confident, have better understanding of theory as well as practical component of Teacher Education program. The B.Ed. Enriched program is also provide the unique experience of curriculum construction to students.

Reference-

-Lakshmi, T.K.S. et al; (2001) The Anveshna Experience –TE with a difference, Banasthali Vidyapith, Faculty of Education.

-NCERT (2005) Position Paper National Focus Group on teacher Education Program on Teacher Education for curriculum Renewal. New Delhi, NCERT.

Lakshmi, T. K. S. (ed.),(2011) An Anthology of "Best Practices" in Teacher Education, Bangalore, NAAC,

-Savitri Sharma, Quality Assurance in Teacher Education, International Educational E- Journal, {Quarterly}, ISSN 2277-2456, Volume-II, Issue-III, July-Aug-Sept 2013

Kanika (2011) *Sahbhagitapurna Adhyapak Shiksha Karyakram Mein Anudeshnatmak Prakriya: Ek Addhayan,* M.Ed. Dissertation, Banasthali Vidyapith, Fcaulty of Education.

Kumar, Sujeet (2016) A critical understanding of Teacher Education through higher education with reference to quality, Recourse Lecture in Refresher Course on Teacher Educators, University of Allahabad, Department of Education, Feb.18.2016.

www.mhrd.gov.in

www.ncte-india.org.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- Department Of Education,Shivaji University,Kolhapur (Maharashtra) | ISSN 2349-638x Impact Factor 2.147 |

RESEARCH AND EXPERIMENTS IN CONSTRUCTIVIST PEDAGOGY IN SOCIAL JUSTICE

Prof. Dr. Bhagawan Mane
M.A., M.Ed., BJC., D.A.E. SET, Ph.D,
Department of Political Science,
Shivaji University, Kolhapur
Email. Bhagawanmane@gmail.com
Mob. 9730310620

Introduction

Education in an interdisciplinary subject constructivist education method has greatly contributed towards human development. Research and Experiments in constructivist pedagogy have stimulated research in science and social sciences, Martin Luther's Renaissance movement and industrial revolution of 1750 accelerated experiments & Researches initially teaching meant giving information knowledge. Today constructivist pedagogy applies skill research and experiments in today's teaching method, Plato (427 BC to 347 BC) and A ristofile's (384 BC to 322 BC) theories have proved to be useful in teaching methods in education. Though constructivist Pedagogy is a western concept we can trace its origin in ancient Indian education method. Constructivist Pedagogy in Buddhist period had stressed on proper thinking reason and scientific approach. In Hindu education Brahmin teacher used to select two upper caste students. However Buddhist education method even women were allowed to have education. Greek thinker Socrates applied constructivist Pedagogy in his discourse method Jean Paiget a Swiss psychologist is called as father of constructivist Pedagogy. Moreover, constructivist Pedagogy is also influenced by idealist theories by Maria Montessari (1870-1952) Joh Dewey (1859-1952) Kant Fichte Schelling and Hegel .

India got independence on 15th August 1947 and from 26th Jan 1950 Indian constitution came in effect. Makers of the constitution assured establishment of social and economic justice through preamble fundamental rights and Directive Principles of state National educational policy tries to promote democratic values.

Need of Research

We lack in achieving object of social justice even after the passage of six decades of constitutional implementation Through we look forward towards constitutional object of socialist social structure globalization has harmful effects on Indian social structure. Open economy has created many challenges before us. However scheduled castes tribes weaker sections of the society women children helpless and old people are neglected by the authorities while establishing democracy object of social Justice also should be aimed at Thus to make use of constructive Pedagogy in solving everyday and practical problems research in this field is very essential.

Objectives of Research

1. To examine historical background of constructive Pedagogy
2. To study role of constructive Pedagogy
3. To study the relationship between constructive Pedagogy & implementation of social justice

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Historical Background of Constructive Pedagogy

Constructive Pedagogy is often related to Heroclits philosophy it assumes that perpetual changes take place in the universe and it is a universal ………. One can also relate ancient Indian educational method to constructivist Pedagogy But we do not find substantial evidences to prove this. However Buddhist Philosophy is based on Pedagogy Because Buddhist Philosophy asserts that human life and universal changes are based on reason and scientific thought Micasuls and idealistic thoughts have no place in this Philosophy it stresses humanity and values of human life. Theories of spiritualism idealism and naturalism in Pedagogy are based on the divine theory Which does not relate practical experience and practice action to human welfare constructivist philosophy is a pluralistic philosophy constructivist believe in uniformity of truth constructivism takes pluralist approach towards truth. Therefore constructivism is also called as pluralistic philosophy of life To justify their theories of education constructivist give the reference of sophist philosophy protégées. They assume Man is the measure of all things as their directive principle.

Swiss psychologist Pedagogy Jean Piaget in the father of constructivism Pedagogy. Constructivism philosophy originated in America in 19th century According to constructivists whole world is convertible (changeable) so science and scientific methods are applied through practical experience and actions. Intelligence does not develop through bookish knowledge academic knowledge but through process of problem solving. Since they believe the world to be convertible they strive to find out truth in the universe through scientific method education is considered as an art and a science as well scientific education stresses on experimental philosophy in fact education is based on the principles of liberty and morality the social development of man constitutes the beginning of practical education.

Models of Teaching

Models of teaching are changing in modern times. Father of teaching models Dr. Bross Joice and Marshawbill write about the models of teaching that…..

"A model of teaching is a plan or a pattern that can be used to shape curriculum to design instructional material and to guide instruction in the classroom into other settings.

Broo Joice and Mashalill classified teaching models as information processing models personal models social interaction models and behavioral models.

There methods of Research:

Historical descriptive and experimental are the three methods of Research

1. **Historical Research Method -** This Research deals with historical happenings it has scientific base and uses primary and secondary sources

2. **Descriptive Research –** It deals with present happenings Individual study method and Development method are the part descriptive research Descriptive research is based on idealism example what is the state of higher education today it includes problem determination ideal determination and action plan to move from reality to ideal situation to find out measures to tackle problems is the essence of Research teaching is a scientific concept.

Constructivism opposes pure philosophical intellectual and ideological analysis in idealism according to idealists truth is abstract and so the knowledge is also abstract where as constructivists stress on material for them truth is always create the concept which we can imbibe which we can prove or can evaluate can only be considered as truth constructivist stress on action the term pragma itself means

Page86

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

action generally education aims at knowledge and then action However for constructivists bookish knowledge or word knowledge is not true knowledge as action is the mother of knowledge action should be given priority. According to John Duie knowledge is by product of action incidental to action constructivism considers practical problems are our real problems because we are practically related to the world constructivists opine that instead of finding truth beyond our life improving our life and making is more pleasant and prosperous is the main objective of human life and so the duty our we being lies in promoting human progress.

Since constructive Pedagogy deals with practical life everything is tested in terms of its practical utility the knowledge principal or solving problem in life and will promote human progress can only be considered as truth for constructivist what is useful is good and what in good is always truth James calls constructivism as expediency and for duie instrumentality is the superme principal the knowledge philosophy ideals and values which are not useful in life are meaningless constructivists do not believe in religion and god if we interpret constructivism from the point of utility we can call it as utilitarian theory.

Jeen piget and teacher

More than fifty years ago Swiss psychologist jeen piget experimented on intellectual development of children according to him child is not born with knowledge it gets development through structural model whese mind and environment play significant role.

Education and society

Education and society are inter related education gets affected by many factors which also include principle like liberty authority and responsibility above mentioned factors are important in implementation of governmental constructivist research and experimental method education methods get affected with the changes in government.

As equality and democracy in related while relating education with society in the same way principal of social justice should also be taken into consideration we should overcome gender discrimination principles of quality social justice should be established to achieve the object of all over development of every section of the society and it can be achieved through the application of constructive Pedagogy.

Education is classified in three types

1. Theoretical
2. Psychological
3.Constructivist Pedagogy and Social Justice

Indian constitution has assured social and economic justice through constitutional preamble and directive principles of state fundamental rights mentioned in chapter three promote establishment of social justice However while enjoying these rights people also should be awake of their duties. A leading educationist philosopher I.B. Berkson says. Education is related to social change people should be able to live a democratic way of life. In India we have democracy but special efforts are not taken to make it more democratic Democracy means change for better John L. Childs has written the conception of democracy and its institutional form is a changing and not a static thing. If signifies a pattern of community of political life. That must continue to develop experimentally. As social responsibility of education all sections of the society weaker sections backward castes and tribes women, children disabled old people should be taken into consideration Deway has stressed on thinking process which pushes growth and development.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Constructivist Educational method and liberal educational method

Constructivists and liberal educational methods are inter related liberal educational method aims at free society and assumes that purpose of the society is to foster the growth of the individual which is based on liberty dignity and responsibility.

Political thinker like societies Rousseau Gamski have propounded valuable theories of educational methods Gramski proposed theory of hegemony Gramski stated his political and educational apprenticeship during the first world was as a journalist In his educational method Gramski considered culture as significant factors of power and authority Gramski Pedagogy and Jean Paiget's constructivism Pedagogy are inter complementary. According to scholars Gramski is a capitalist entrepreneurs and fries to establish technology economic political system.

Findings:

1. Productivity & Profit are considered in constructive pedagogy
2. Constructivist Pedagogy ignores importance of human face.
3. Taking into consideration customer interest syllabus and teaching methods are designed.

Reference list

1. Marathe R.M. – Principles of Education, edition 1959, p.p. 85

2. Strom Robert D, - Teacher's and the Learning Process, preritice Hall INC Engleword clipt new jersey, 1971, p.p.286

3. Keith Thompson – Education and philosophy A Practical Approach oxford Basil Blackwell, 1972, p.p. 126

4. Strain John Paul – Modern Philosophies of education Random House, New York, 1971, p.p 120

5. Lee C. Gordon – Education and Democratic Ideals Harcourt Brace and word Inc 1965 New York, p.p.9

6. Zaghloul Morsy – Thinkers on Education Editor, Unesco Publishing Oxford and IBH Publishing Vol. No.2 600-601.

7. Strain John Paul – Modern Philosophies of Education Ransom House, New York, p.p. 92-95

CONSTRUCTIVISM AND ITS IMPLICATIONS FOR CLASSROOM INSTRUCTION

Shri.Kanakachal D Kanakagiri.
M.A,M.Ed,M.Phil,(Ph.D)

Dr.N.S.Shinde
M.A,M.Ed,M.Phil,Ph.D
Lecturer in Chauson College of Education,
Chikodi

Abstract:

This article provides an overview of constructivism and its implications for classroom practices. To that end, it first describes the basic features of constructivism along with its major forms or variations. It then elucidates the constructivist view of knowledge, learning, teaching, and the relationship among these constructs. More specifically, it explains the assumptions and principles of constructivist pedagogy, bringing to the fore its core characteristics that differ fundamentally from other instructional paradigms. Last, the article presents how constructivism as a learning theory can guide the process of learning and teaching in real classroom settings.

Learning theories are indispensable for effective and pedagogically meaningful instructional practices. A learning theory provides "clarity, direction and focus throughout the instructional design process." Hence, an effective instructional framework is supposed to take into account the theoretical bases in which it is grounded (McLeod 2003). Likewise, an educator is expected to understand the educational theory or theories behind a given instructional framework to gain success in reform efforts (Fosnot 1996). Among many different labels, learning theories can be categorized in three main areas: behaviourism, cognitivism, and constructivism. The purpose of this article is to clarify the conceptual underpinnings of constructivism along with its variations and its implications for classroom instruction.

Introduction:

Constructivism The philosophy of constructivism evolved from dissatisfaction with traditional Western theories of knowledge. As such, it contrasts sharply with objectivist epistemology and positivism (Crotty 1998; HendryFrommer, and Walker 1999; Glasersfeld 1995). In contrast to the objectivist notion of objective truth and meaning inherent in objects, independent of any consciousness, constructivism postulates that knowledge cannot exist outside our minds; truth is not absolute; and knowledge is not discovered but constructed by individuals based on experiences (Crotty 1998, 42; Fosnot 1996; Hendry, Frommer, and Walker 1999). Constructivism replaces the traditional conception of truth—as the correct representation of an external world—with the concept of viability, meaning that descriptions of states or events of the world are relative to the observer (Glasersfeld 1995, 8). The constructivist perspective, therefore, posits that knowledge is not passively received from the world or from authoritative sources but constructed by individuals or groups making sense of their experiential worlds (Maclellan and Soden 2004).Constructivism advances meaning-making and knowledge construction as its foremost principles (Crotty 1998; Fosnot 1996; Phillips 1995). It views knowledge as temporary, nonobjective, internally constructed, developmental, and socially and culturally mediated (Fosnot 1996). Individuals are assumed to construct their own meanings and understandings, and this process is believed to involve interplay between existing knowledge and beliefs and new knowledge and experiences (Richardson 1997, 2003; Schunk 2004). This view of meaning-making through previously constructed knowledge implies that:

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Constructivist Pedagogy Although constructivism is a recently emergent epistemological stance or theory of knowledge and knowing, it has come to inform different bodies of knowledge or disciplines ranging from philosophy to psychology, anthropology, and sociology. Constructivism has implications for pedagogical theory and research as well. Since its inception as an epistemology and philosophy, constructivist theory has prompted educators to build a constructivist pedagogy. Educational scholars have developed a range of definitions of constructivist learning and its attributes. Rooted in the field of cognitive science, constructivist pedagogy is especially informed by the ideas of John Dewey and William James; the later work of Jean Piaget; and the socio historical work of Lev Vygotsky, Jerome Bruner, and Ernst von Glasersfeld, to name a few (Fosnot 1996; Kivinen and Ristele 2003). Its genesis can be traced as far back as the eighteenth-century philosophers Vico and Kant

Constructivist theory is descriptive rather than prescriptive; it does not prescribe rigid rules or procedures for designing a learning environment (Wasson 1996). Because the constructivist view of learning evolved from cognitivism, it shares several similarities with cognitive learning theories. What distinguishes constructivism from cognitivism is the notion that "knowledge does not and cannot have the purpose of producing an independent reality, but instead . . . has an adaptive function" (Glasersfeld 1995, 3). The basic assumptions and principles of the constructivist view of learning can be summarized as follows:

• Learning is an active process. • Learning is an adaptive activity. • Learning is situated in the context in which it occurs. • Knowledge is not innate, passively absorbed, or invented but constructed by the learner. • All knowledge is personal and idiosyncratic. • All knowledge is socially constructed. • Learning is essentially a process of making sense of the world. • Experience and prior understanding play a role in learning. • Social interaction plays a role in learning.

General principles of the constructivist

Learning is not the result of development; learning is development. It requires invention and self-organization on the learner's part. Teachers should thus allow learners to raise their own questions, generate their own hypotheses and models as possibilities, and test them for viability. • Disequilibrium facilitates learning. "Errors" should be perceived as a result of learners' conceptions and therefore not minimized or avoided. Challenging, open-ended investigations in realistic, meaningful contexts will allow learners to explore and generate many possibilities, whether affirming or contradictory. Contradictions, in particular, need to be illuminated, explored, and discussed. • Reflective abstraction is the driving force of learning. As meaning-makers, humans seek to organize and generalize across experiences in representational form. Reflection through journals, representation in multi symbolic form, or connections made across experiences or strategies may facilitate reflective abstraction. • Dialogue within a community engenders further thinking. The classroom should be a "community of discourse engaged in activity, reflection, and conversation." Learners (rather than teachers) are responsible for defending, proving, justifying, and communicating their ideas to the classroom community. Ideas are accepted as truth only as they make sense to the community and thus rise to the level of "taken-as-shared." • Learning proceeds toward developing structures. As learners struggle to make meanings, they undertake progressive structural shifts in perspectives—in a sense, "big ideas." These learner-constructed, central-organizing ideas can be generalized across experiences, and they often require undoing or reorganizing earlier conceptions. This process continues throughout development

Page90

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Implications of the Constructivist Framework for Classroom Teaching Constructivism is a theory of learning, not a theory of teaching (Fosnot 1996; Richardson 2003). For this reason, although there is an enormous body of literature on constructivism, the elements of effective

Constructivist teaching are not known (Richardson 2003). Constructivist teaching theory, built on constructivist learning theory, is a set of prescriptions that challenge the transmission or behaviourist paradigms advocated in many education programs. Experiential learning, self-directed learning, discovery learning, inquiry training, problem-based learning, and reflective practice are examples of constructivist learning models (Gillani 2003; McLeod 2003; Slavin 2000). Constructivism is explained in terms of its relation to teaching. According to Fosnot (1996), teaching based on constructivism discounts the idea that symbols or concepts can be taken apart as discrete entities and taught out of context. Rather, constructivist teaching affords learners meaningful, concrete experiences in which they can look for patterns, construct their own questions, and structure their own models, concepts, and strategies. The classroom becomes a micro-society in which learners jointly engage in activity, discourse, and reflection. Teachers facilitate and guide rather than dictate autocratically. Autonomy, mutual reciprocity of social relations, and empowerment characterize a constructively conducted classroom (Fosnot 1996, pp. ix–x). Students can develop in-depth understandings of the instructional materials, understand the nature of knowledge construction, and construct complex cognitive maps to connect bodies of knowledge and understandings (Richardson 2003). Because meaning, knowledge, and conceptual structures are constructed differently by each individual, teachers should be cognizant that students may view curricula, textbooks, didactic props, and microworlds differently than they do. Accordingly, teachers should not attempt to transfer conceptual knowledge to students through words (Glasersfeld 1995); instead, they should be concerned with how learners understand the process of knowing and how they justify their beliefs (McLeod 2003). Constructivist teachers challenge students to justify and defend their positions so that they can change their conceptual frameworks (e.g., beliefs, assumptions, and conceptions). In the constructivist classroom, learning emphasizes the process, not the product. How one

Constructivism is explained in terms of its relation to teaching. According to Fosnot (1996), teaching based on constructivism discounts the idea that symbols or concepts can be taken apart as discrete entities and taught out of context. Rather, constructivist teaching affords learners meaningful, concrete experiences in which they can look for patterns, construct their own questions, and structure their own models, concepts, and strategies. The classroom becomes a micro-society in which learners jointly engage in activity, discourse, and reflection. Teachers facilitate and guide rather than dictate autocratically. Autonomy, mutual reciprocity of social relations, and empowerment characterize a constructively conducted classroom (Fosnot 1996, pp. ix–x). Students can develop in-depth understandings of the instructional materials, understand the nature of knowledge construction, and construct complex cognitive maps to connect bodies of knowledge and understandings (Richardson 2003). Because meaning, knowledge, and conceptual structures are constructed differently by each individual, teachers should be cognizant that students may view curricula, textbooks, didactic props, and microworlds differently than they do. Accordingly, teachers should not attempt to transfer conceptual knowledge to students through words (Glasersfeld 1995); instead, they should be concerned with how learners understand the process of knowing and how they justify their beliefs (McLeod 2003). Constructivist teachers challenge students to justify and defend their positions so that they can change their conceptual frameworks (e.g., beliefs, assumptions, and conceptions). In the constructivist classroom, learning emphasizes the process, not the product.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Richardson (2003) identifies several principles as the premises of the constructivist pedagogy. These principles suggest that the teacher first recognize and respect students' backgrounds, beliefs, assumptions, and prior knowledge; provide abundant opportunities for group dialogue aimed at fostering shared understanding of the topic under study; establish a learning environment that encourages students to examine, change, and even challenge their existing beliefs and understandings through meaningful, stimulating, interesting, and relevant instructional tasks; help students develop meta-awareness of their own understandings and learning processes; and introduce the formal domain of knowledge or subject matter into the conversation through a sort of loosely structured instruction and the use of technological tools such as Web sites. Other educators have also attempted to elaborate on the characteristics of constructivist teaching and learning. Brooks and Brooks (1993) describe both the pillars of constructivist pedagogy and the characteristics of constructivist teaching practices in In Search of Understanding: The Case for Constructivist Classrooms, which remains one of the most-cited books on the constructivist approach to teaching. The authors enumerate five pillars on which constructivist classrooms are based: (1) posing problems of emerging relevance to learners; (2) structuring learning around primary concepts; (3) seeking and valuing students' points of view; (4) adapting curricula to address students' suppositions; and (5) assessing student learning in the context of teaching. Translating these principles into instructional practices, these authors argue that teachers in a constructively planned and conducted classroom environment should have students engage in raw data or primary sources, aiming to develop students' cognitive and higher-order thinking skills. Taking into account students' concepts, misconceptions, modes of thinking, and responses, these teachers accordingly shift their teaching methods or content when needed. By asking thoughtful and open-ended questions, constructivist teachers also encourage students to elaborate on their initial responses through such interactive methods as discussion, debate, and Socratic dialogue..

Conclusion

Constructivist theories are of great value to teachers in their efforts to help students grasp the substantive and syntactic components of the subjects they are teaching. This article has explained constructivism in terms of its epistemological, philosophical, and theoretical underpinnings, and its implications for instructional practices. Even though the constructivist view of learning and teaching has dominated the educational literature for more than two decades, constructivist pedagogy in its entirety has not yet penetrated actual classrooms. It should be kept in mind that putting constructivist pedagogical ideas into practice effectively and with integrity first necessitates teachers' willingness to embrace and practice principles of constructivist pedagogy. And doing so in turn requires teachers to examine their deeply held philosophies of teaching—more precisely, their conceptions of teaching—to become conscious of whether they tend to value traditional teacher-centered or constructivist learner-centered conceptions of teaching. Rather than examine technical aspects of teaching, they first can reflect on and formulate their answers to such important conceptual questions as how learning occurs; how the teacher can facilitate the learning process or what roles the teacher should play in student learning; what kinds of learning environments help realize the goals of schooling in general and of school subjects in particular; and how students' learning should be evaluated. If the goals of teaching school subjects are to be successfully accomplished, teachers of different subject areas should transform students' engagement in subject matters from rote recall and comprehension to more meaningful analysis, synthesis, application, and evaluation via constructivist teaching models and methods.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

References

Baxter Magolda, M. B. 1992. "Students' Epistemologies and Academic Experiences: Implications for Pedagogy." Review of Higher Education 15 (3): 265–287.

Boethel, M., and K. V. Dimock. 2000. Constructing Knowledge with Technology. Austin, Texas: Southwest Educational Development Laboratory. Brooks, J. G., and M. G. Brooks. 1993. In Search of Understanding: The Case for Constructivist Classrooms. Alexandria, Va.: Association for Supervision and Curriculum Development.

Crotty, M. 1998. The Foundations of Social Research: Meaning and Perspective in the Research Process. Thousand Oaks, Calif.: Sage Publications.

Fosnot, C. T. 1996. "Constructivism: A Psychological Theory of Learning." In Constructivism: Theory, Perspectives and Practice, ed. C. T. Fosnot, 8–33. New York: Teachers College Press. Fox, R. 2001. "Constructivism Examined." Oxford Review of Education 27 (1): 23–35.

Gergen, K. J. 1995. "Social Construction and the Educational Process." In Constructivism in Education, ed. L. P. Steffe and J. Gale, 17–39.

Hillsdale, N.J.: Lawrence Erlbaum Associates. Gillani, B. B. 2003. Learning Theories and the Design of E-learning Environments. Lanham, Md.: University Press of America. Glasersfeld, E. von. 1995. "A Constructivist Approach to Teaching." In Constructivism in Education, ed. L. P. Steffe and J. Gale, 3–15.

Hillsdale, N.J.: Lawrence Erlbaum Associates. ———. 1996. "Introduction: Aspects of Constructivism." In Constructivism: Theory, Perspectives and Practice, ed. C. T. Fosnot, 3–7.

New York: Teachers College Press. Hendry, D. G., M. Frommer, and R. A. Walker. 1999. "Constructivism and Problembased Learning." Journal of Further and Higher Education 23 (3): 359–371.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

ENHANCEMENT OF SEMI ENGLISH PATTERN THROUGH CONSTRUCTIVIST APPROACH

Mrs.Nisha Kajave,

Ph.D.Research Student,

Department of Education,

Shivaji University,Kolhapur

64nishak@gmail.com

Dr. Meena Surve

Assistant.Professor,

College of Education,

Pethvadgaon,Kolhapur.

meenasurve218@gmail.com

Abstract

The policy of semi-English pattern has come into force to enable the child to success in any trade or discipline. The term semi-English means to teach Math and Science in English in non-English medium schools. The negative perspective of parents about Zilla Parishad schools, decreasing enrollment, and future global need requires learning Math and Science through English language. NCF 2005 has accepted English as subject and medium of learning. The counting of acceptance of this medium is demanding by parents. These types of schools appear as golden mean between English Medium and non-English medium schools.

But it is challenge for teachers to teach such students having poor educational background of parents. 'As we know that India is multilingual country and there is an impact of regional languages on people.'(Content cum methodology, 2003). To get grand slam for implementation of semi-English pattern enhancement of the pattern is essential. Teacher also have to change his role as facilitator, promoter, developer from traditional one. To enhance the quality of conceptual knowledge of Maths and Science of students, constructive approach will prove superlative. Teacher has to help student to shift from content based learning to problem solving and understanding. Constructive approach is child centered approach. Child constructs its knowledge by its own. To enhance the quality of semi-English pattern, we need to use some strategies and activities. The use of constructivism is strongly recommended by NCF 2005. NCF 2005 deals with the need that "future of a child has taken center stage to the near exclusion of the child's present." This is detrimental to the well-being of the child as well as the society and the nation.

The Objectives of this paper are 1)To study the philosophical principles of constructive approach. 2)To suggest activities for enhancement of semi-English pattern. 3)To define benefits of constructivist approach in semi-English pattern. This paper deals with the assimilation of semi-English pattern and constructivist approach. It also deals with the suggestion of activities with proper base of philosophical principles related to constructivist approach.

Key Words : semi-English, constructivist approach, activity, assimilation.

I.Introduction :

1.1Need of semi- English :

'The focus of our English Language Teaching (ELT) program and the role of English in our Educational system is been changing over the years. English language occupied every field of science, technology, economics, banking, space study, medicine, and engineering computer and so on. English is a language with profoundness. And to be the part of technology, the essential knowledge and command on

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

English is necessary. Further technology and much more trades, discipline needs the conceptual commanders. The foundation of tomorrow's future is based on the concept clearance of subjects like Science and Mathematics. It could be cleared from primary level. English is a language of higher education in much more perspectives. This language plays a vital role in the knowledge acquisition of a particular subject in English.

As we know that India is multilingual country and there is an impact of regional languages on the people. But it is not bad to use the language which is compatible to give us the knowledge which is not easily available in our regional language. Language policy has given unnecessary importance to English from last 40 years and it will be spread in future. We have to accept this disagreeable reality and need to draw strategies to get benefits of English and Marathi to our child. It means there is need to learn English and Marathi also. NFC 2005 has accepted English as subject and English as medium. The negative perspective of parents about Zilla parishad school and attraction about English Medium school decreases the enrollment of Zilla parishad school. The Global need of learning Math and Science in English languages the policy of semi-English medium has come into force. The term semi English means to teach Math and Science in English non English medium Schools.

Semi-English is a new trend in Zilla parishad school from 2009. In Maharashtra this pattern is granted in all non-semi-English medium schools. These types of schools are golden mean between English medium and non-English medium schools. In countries other than India like, Malaysia the semi-English pattern calls 'ETeMs' policy. It means Teaching of Mathematics and Science in English. In Semi-English pattern concepts of Mathematics and Science are learned through English language.

1.2 Semi English and constructivist approach :

In this policy of semi English medium, the government declared that school cannot appoint extra new teacher for this post. Means it is challenge for teachers to teach such students having background of Marathi mother tongue. It is also regional language in Maharashtra. The poor educational background of parents could not prove any help for their child's concept clearance. Teachers have to teach the child without any burden or force. If child learns himself with interest and innate curiosity the knowledge, construction process happens without any force. To be more successful in all above problems we have to enhance the semi-English pattern through constructivist approach. The educationalist, philosophers, psychologist like Jean Piaget, Jerome Bruner, Vygotsky, Gildataba are basic developer of the term constructivism. Constructivist learning is based on student's active participation in problem solving and critical thinking regarding a learning activity which they find relevant and engaging. Whenever there is need to solve the problem, we have to reconcile it with our previous experiences. While doing this, questions arrive, thinking process starts. We do relevant task and knowledge constructs. The use of constructivism is strongly recommended by NCF2005.

'The teaching of Mathematic should enhance the child's recourses to think and reason to visualize and handle abstraction to formulate and solve problems. This broad spectrum of aim can be covered by teaching relevant and important mathematics embedded in the child's experience. The teaching of science should be recast so that it enables children to examine and analyze every day experiences'(NCF2005).To enhance the quality of semi English pattern we need to use some strategies. Through appropriate planning and administration of those strategies teaching learning process will be joyful and fruitful.

This paper deals with the assimilation of Semi-English pattern and constructivist approach. It also deals with the suggestion of activities with proper base of philosophical principles related to constructivist approach.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

The objectives of the study are :

1)   To study the philosophical principles of constructive approach.

2)   To suggest activities for enhancement of semi-English pattern.

3)   To define benefits of constructivist approach in semi-English pattern.

2. Philosophical Principles of constructivist approach:

The constructivist approach deals with its philosophical principles. Before suggesting activities, let's have a glance on these principles. These principles are elaborated with the view of semi English pattern.

1)Learning is an active process:

Learning is an active process. While creating new knowledge mental and physical activity takes place. It is child centered process. So it is necessary that child should be active to do something for problem solving. Learning takes place by getting knowledge through sensory modes. It is task and process oriented approach.

2)Learning involves language:

Language influences learning. While processing activity, transmission of thoughts are occurs. Within discussion language becomes media. We can get responses though oral and in written form. By asking of questions, argumentation occurs through language. For Semi English pattern English language would be use.

3)The democratic environment helps to generate knowledge:

Democratic environment gives birth to critical and free thinking. An individual, who is not active participate, involves in activity. Child can think and do his task without botheration.

4)Motivation is necessary component:

In constructivist approach trial and error, failure occurs many times. Sometimes students get disappoint and try to quit. On this precise time the motivational role of teacher starts. Motivation encourages learners for thinking and problem solving.

5)Learning is a social activity:

Social view develops through group acceptance. There is interaction between human beings. Activity through forming group is vantage to socialization. Inactive students participate in their peer group. The fear of error becomes lessen.

6)Learning is contextual:

It is necessary to keep in mind the previous knowledge of child while designing of learning activities or learning experiences and group formation. That could help child to construct knowledge. It is not happen to learn isolated facts. We learn in relationship to what else we know.

7)It takes time to learn:

Learning needs time. It composites with many exiguous parts of activity. Assimilation of previous and new knowledge occurs in constructivist learning. So the process takes time. Researcher suggested activities which are related to these principles and those could be useful for enhancement of semi English pattern.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:-	ISSN 2349-638x
Department Of Education,Shivaji University,Kolhapur (Maharashtra)	Impact Factor 2.147

3. Enhancement through constructivist activities:

Constructivist approach is different from the traditional theory of teaching-learning thinking. In traditional way, teaching was without considering the individuality of child. His role is changed from passive to active. Child learns without any botheration. Child creates new knowledge through previous ideas, experiences which he has. But the constructivist approach deals with development of individual difference. Self-learning, joyful learning, creative learning is some of the aspects of constructivist approach.

From the below flow chart, we can understand the process of knowledge construction through activities.
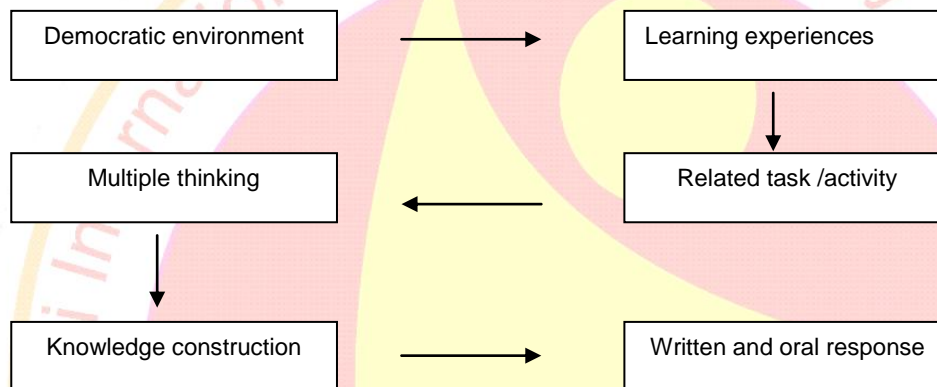
(Fig. 1 : Flow chart of knowledge construction)

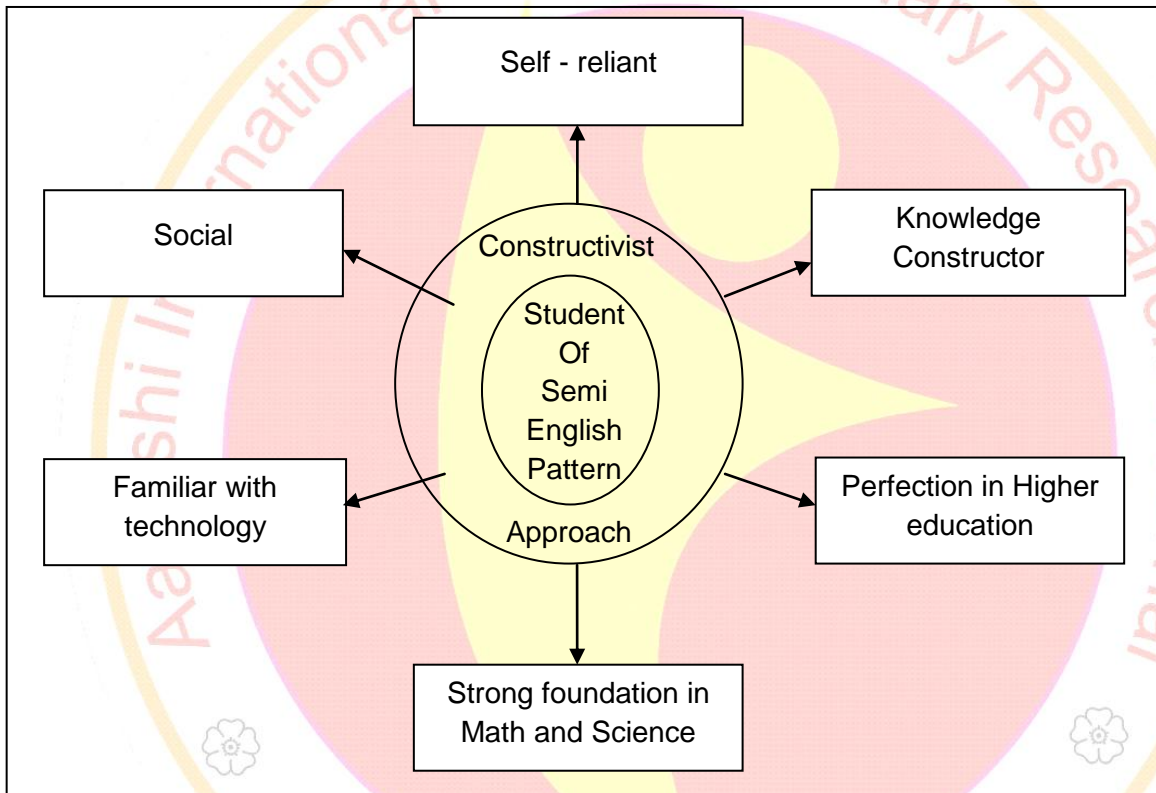**Constructivist Activities for the enhancement of Semi English pattern :**

No.	Activity	Explanation	Example
1.	Planning/designing of learning experiences	The learning experiences are designed by teacher. The arrangement of experiences should plan and designed before starting of every term of year. There should be variety in learning experiences. The previous knowledge of student are important while designing of learning experiences.	*Riddle : Find the hidden geometrical shapes *Experience the different touch/test/sounds.
2.	Digital classroom	The classroom with digitalization means use of colorful charts like diagrams, puzzles with the help of electronic technology and computer designing. It could prove joyful environment for knowledge creator. It also deals the charts with food for mental and physical activity. The classroom floors could design with the patterns for indoor activity. The pattern would be related to	* Math : Solve the number puzzles. * Science : Classify the animals, trees in their category. *Logic puzzles shape Puzzles, algebra puzzles.

Page97

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:-	ISSN 2349-638x
Department Of Education,Shivaji University,Kolhapur (Maharashtra)	Impact Factor 2.147

		mathematical and science concepts. Student constructs his knowledge in group or individually with the help of child friendly learning materials.	
3.	Use of ICT	Through this activity, student and teacher can individually or in group can use information technology for satisfy their innate curiosity. The use of projector, computer, internet, games, online offline exam are included with regular teaching aids.	*Online jigsaw puzzles. *Preparing of own diagram of any system or function. *Use of teleconference and video conference.
4.	Math-Science fair	Fair is most loving thing for each age child. This is non-competitive problem solving event. It gives teachers an opportunity to have their students to do the related task for problem solving with a particular goal in mind.	*Use of abacus *Solve number square pattern. *Mini Sudoku *Science experiment. Books.
5.	Fun time	This activity could arrange once in a month. On the fun time, student would be perfect in that month's learned and unlearned concepts that will able to utilize that through game.	*Jigsaw, Preparation of puzzles. *Mathematics and science workshop.
6.	ABL (activity based learning)	It is based on doing some hands on experiments and activity. By providing the best learning friendly material, it would be joyful and long lasting. With the help of child friendly aids student constructs the knowledge. ABL project is not developed for particular Semi English pattern by government. But we can adopt some important task by good translation without lesion any objectives.	*Milestone. *Activities in peer group. *Role play, e.g. air. Shopkeeper & customer. *Find the angles in things.
7.	Experimentation	The activity is related with both Mathematics and Science. The activities given in the book or designed by teachers are included here. In this activity, students individually perform an experiment and then come together as class to discuss the results. If there is extra room is available in school, it can be convert in science and math lab.	*Project – Pollution Project – *Measurement tools from past and present. *Experiment day – Science workshop.
8.	Discussion	By creating brain twister situations in democratic environment, teacher could encourage students to conceive	*Good habit – Bad habit *Measurement

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

		and discuss on problem. Teachers would be the motivator in discussion. The most essential topic, instance could be discussed.	

4. General benefits of constructivist approach in Semi English Pattern :

NCF2005 deals with the need that-future of a child have taken center stage to the near exclusion of the child's present**.**

(Fig. : 2, Benefit of constructivist activities for Semi English Pattern)

The assimilation of Semi English Policy and constructivist approach would enhance the quality of semi English pattern. Constructivist approach is child centered approach. The suggested activities are not only beneficial for the teaching learning process but also could enrich the future of student from semi English pattern. In future, whenever, there is any difficulty, trouble occurred; the student could solve it without taking burden of problem. He will find the reason behind circumstances by his constituted knowledge building nature.

Students are actively involves in the process of problem solving. They became knowledge constructor of their own. They would able to solve his problem with or without holding others hand. Due to integration of semi English pattern and constructivist approach the foundation for Science and Mathematics of students will be strengthen. That will built them perfect for their higher education. Knowledge of Math and Science teaching through English language with the help of experimentation, use of ICT will build them familiar with technology. Through group discussion, acceptance of failure, patience, and collaborative task will create them as social.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

In this knowledge constructing process, the role of a teacher will be not traditional. The teacher's prime job is to motivate students. He will also facilitator, mentor and guide. In the process of new knowledge constructing students may get failure and depression. That instance, he may quit the task. Here the teacher's job is to motivate him. All activities will be appear in positive result through democratic environment which teacher will serve in a well-planned classroom. The prosperous classrooms with teaching aids and multitude learning experience will prove the enhancement of semi English pattern.

Conclusion :

- The assimilation of semi English pattern with the constructivist approach will prove eminent. The activities which are suggested will defiantly enhance the quality of Semi English Pattern.
- The studies of philosophical principles of constructivism are proved as foundation in suggestion of activity for enhancement of semi English pattern.
- The activities like planning of learning experiences, digital classroom, use of ICT, Math, Science fair, fun time, ABL, experimentation, discussion are suggested.
- The use of constructivist approach in semi English pattern would auxiliary beneficial for the perfect future development. Pupil would imbibe with further qualities:
  - Self-reliant
  - Knowledge constructor
  - Perfection in Higher education
  - Strong foundation in Math and Science
  - Familiar in technology
  - Social

Children learn in a variety of ways. Education system is for the child's all round development.This development is depend upon the child's participation in learning process. Constructivist approach is child centered approach. Semi English is newly launched educational trend. To enhance the new pattern, the assimilation of Semi English and constructivist approach will be beneficial.

References

MSCERT (2016). Activity Based learning, Retrieved 26 February, 2016, from
www.mscert.org.in/vikas/content/activity

Guiding Principles of Constructuvist thinking.(2002).Retrieved on February
26,2016,from http://www.hi.is/~joner/eaps/wh_consy.htm

Miranda Y.(2005). Failure of ETeMS:The Teaching Courseware Factor. Retrieved on20
January, 2016,from http://www.researchgate.net/publication/28093171

NCERT.(2012). NATIONAL CURRICULUMN FRAME WORK 2005.Delhi:NCERT.
Retrieved on February25, 2016, from
http://www.ncert.nic.in/rightside/links/pdf/framework/nf2005.pdf.

पानसे,र.,जानेवारी(२०१६).रचनावादी शिक्षणाची तत्त्वे व शिक्षणव्यवहार.*जीवनशिक्षण*.अंक
१०.पान नं.(५—८).

वीरकर,स.,सूर्यवंशी,ज.,आंबेकर,स.,गायकवाड.क.,गायकवाड.र.,कुंभार,र.,कुटे,म.
(२००३).आशययुक्त अध्यापन पध्दती(English).नाशिक:में.प्रिटोरियम'गिताई'.

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

VYGOTSKY'S THEORY & CONSTRUCTIVISM

Mrs. Rayte T.D.
M.A, M.Ed SET
Asst. Prof.
Shree Santkrupa Institute of Education (M.Ed)
Ghogaon
Mob no.9730177810

 Abstract

Constructivist theorists have extended the traditional focus on individual learning to address collaborative & social dimension of learning .
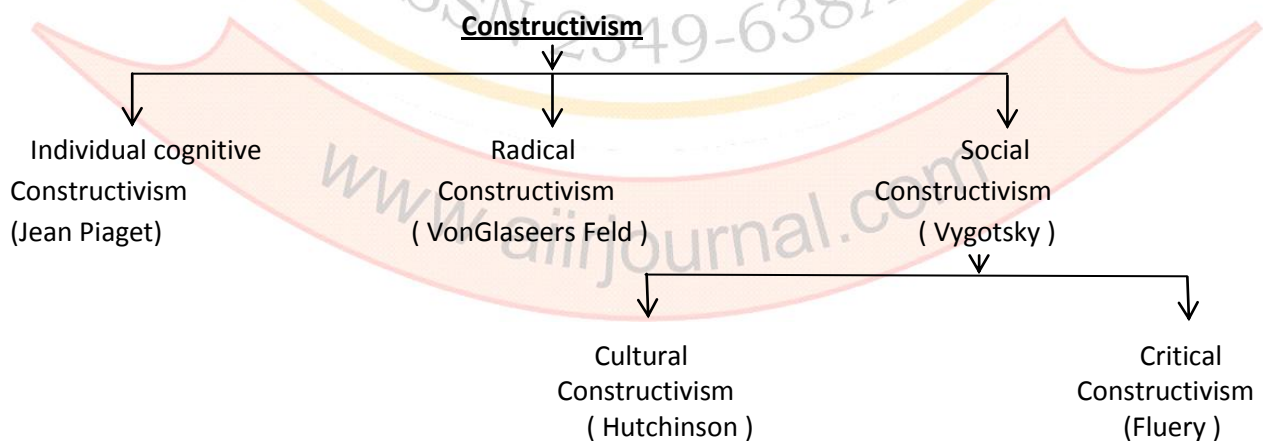
Vygotsky's constructivist theory which is often called social Constructivism. According to Vygotsky, the culture gives the child the cognitive tools needed for development. Social development theory argues that social interaction precedes development consciousness and cognition are the end product of socialization and social behavior Vygotsky's theory plays important role in the constructivist classroom.

According to Vygotsky, language and Social, cultural context are tools which develop knowledge. Also Vygotsky explained two major themes, one of them is More Knowledgeable Other (MKO) & another is Zone of Proximal Development (ZPD).

Introduction-

Constructivism is the label given to a set of theories about learning which fall somewhere between cognitive& humanistic view. If behaviorism treats the organism as a black box, cognitive theoryrecognises the importance of the mind in making sense of the material with which it is presented. Nevertheless, it still presupposes that the role of the learning is primarily to assimilate whatever the teacher presents. But constructivism suggests that the learner is much more actively involved in a joint enterprise with the teacher of creating new meanings.

According to Constructivism, learners construct their own understanding & knowledge of the world using their prior knowledge, through experiencing & reflecting on those experiences. The teacher is a facilitator of learning & helps, guides & assists the learners in their knowledge construction process. Constructivism takes on different philosophical meanings with different theorists & contexts , the common threads of constructivism that run across all its variations are the nature of knowing and the active role of the learner.

Constructivism

Individual cognitive Constructivism (Jean Piaget)

Radical Constructivism (VonGlaseers Feld)

Social Constructivism (Vygotsky)

Cultural Constructivism (Hutchinson)

Critical Constructivism (Fluery)

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Social   Constructivism has been introduced by levVygotsky who believed that culture and social interactions are essential factors in shaping knowledge.

Vygotsky's theory explains following views.-

a) Language is the main tool which develops knowledge.
b) Learning cannot separated from a social context.
c) More knowledgeable Other (MKO)
d) Zone of Proximal Development (ZPD)

a)Language is the main tool which develops knowledge. - Language is the main toolin knowledge construction , which promotes thinking develops reasoning, supports problem solving perception and cultural activities like reading & writing. According to Vygotsky, social and cultural contexts are important in develop.

b)Learning cannot separated from a social context- Vygotsky introduced the social aspectof learning into constructivism.It places greater emphasis on the social environment in which the learner and learning is embedded and believes in socio-genesis of knowledge. Social interaction plays a fundamental role in the process of cognitive development. Vygotsky felt social learning precedes development. He states Every function in the child's cultural development appears twice first, on the social level and later on the individual level, first between people & then inside the child.

c)More Knowledgeable Other (MKO) - The MKO is somewhat self-explanatory , it refers to someone who has a better understand or a higher ability level than the learner with respect to a particular task process or concept. The key to MKOs is that they must have more knowledge about the topic being learner does. Example –

Any student who doesn't know how to make PPT. He decides to ask teacher or ICT experts. Using the steps he prepares PPT.

The MKO is generally the teacher or person of higher intellect and learning ability.

d)Zone of Proximal Development (ZPD) - Vygotsk's zone of proximal Development (ZPD) is probably his best known concept. Vygotsky believed that potential for cognitive development depends upon zone of proximal Development. The ZPD is the distance between a student's ability to perform a task under adult guidance and with peer collaboration and the student's ability solving the problem independently
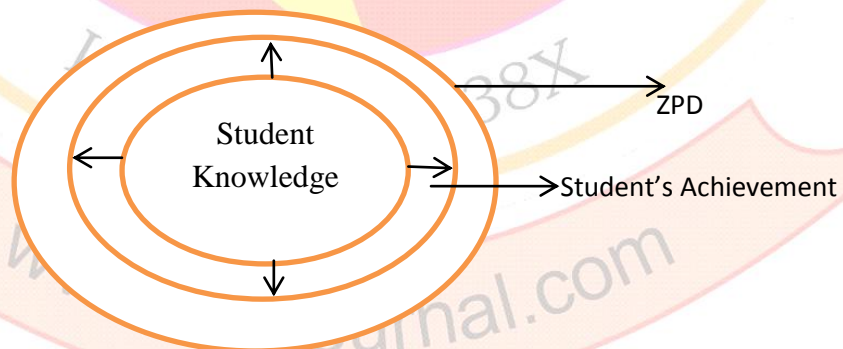
White circle – What that student can learn unaided   ZPD – area of potential where learning takes place

- **Educational Implementation –**
1) The role of the teacher is one of a mediator for the child's cognitive development.
2) Teacher must use teacher resources, worksheets lesson plan and rubrics all in a combined attempt to aid the student's progress.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

3) Teacher continues to grow child's abilities to solve problems independently.

4) More knowledgeable other (MKO) goes hand in hand with ZPD,although in a more remedial sense.

5) Teacher use collaborative learning method , co-operative learning, programmed learning, brain storming in the constructivist classroom.

6) The learners are considered to be central in the learning process.

7) Constructivist classroom is a site where information is absorbed and knowledge is built by the learner.

8) The teachers support the learner by means of suggestions that arise out of ordinary activities by challenge that inspire creativity and with project that allow for learning information.

9) Personal computers provide individual students with tools to experiment and build their own pace.

10) The assessment tool in a constructivist classroom is in a portfolio format that has been designed by the learner.

11) Teacher needs to provide many opportunities that allow children to develop language ex-language games, group discussion.

Conclusion –

Vygotsky's theory plays important role in the constructivist classroom.Vygotsky has developed a sociocultural approach to cognitive development. Vygotsky's theory guides in develop constructivist classroom. Social constructivism provides important tools such as language social context to constructivist classroom.

Social constructivist theory focuses on one's own learning.

Acknowledge-

I am feeling to glad present the paper. To complete the paper many persons are help me. Firstly I am thankful to department of education ,who gave us chance to express my thoughts I really thankful to my friends and colleagues. I also thankful to Mr.Jadhav Hindurao Who typed this paper. I also thankful to librarian. At last I really thankful all of them who help me.

Bibliography

Chauhan S.S.(1978)' ' Advanced Educational Psychology' , Vikas Publishing House ; New delhi

Liu C.H. & Matthews, R(2005), 'Vygotsky'sPhilopophy: Constructivism and its criticism examined' International Education Journal

Mangal S.K. (1995), 'Advanced Educational Psychology; Prentice Hall of India Pvt – Lid: New Delhi

ShrivastavaKumkum (2008), ' Traditional& constructivist Educational Perspectives; India Journal of Teacher Education Anweshika, NCTE : New Delhi

Steffe& Gale (1995); ' constructivism in Education' LowrenceErbaum Associates : New Jersy

Zainuddin R. &A .Ahemed (2008), ' Pedagogy In the light of constructivism' India Journal of Reacher Education Ahweshika , NCTE : New Delhi

www.simplypsychology.org/Vygotsky.html
www.learning theories.com/Vygotskys
social-learning-theory.html
https://en.wikipedia.org/Wiki/Lev-Vygotsky
www.thirteen.org
www.Ucdoer.ie

Page103

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal) website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749) Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- Department Of Education,Shivaji University,Kolhapur (Maharashtra) | ISSN 2349-638x Impact Factor 2.147 |

DEVELOPMENT OF CO - OPERATIVE TEACHING - LEARNING STRATEGIES FOR THE CONSTRUCTION OF KNOWLEDGE OF CONCEPTS IN MATHEMATICS AT SECONDARY LEVEL STUDENTS AND COMPARATIVE STUDY OF ITS EFFECTIVENESS.

Dr.Yuvaraj Y. Pawar
Smt.Putalaben Shah College Of Education Sangli.
Rajwada Paga Chowk Sangli.416416 (Maharashtra)
E-mail Id-yuvarajypawar@gmail.com
Mob. No.09405547393

Abstract

In our Secondary Schools traditional methods of teaching-learning are used Students are become only passive listeners and teacher is provider of knowledge. Students are required to memorize this knowledge generally in the form of laws, formulae or theory and reproduce the same in the examinations. But now a days our education system tried to free from behaviorist approach .National Curriculum Framework (2005) is based on the Constructivist approach .Constructivism is relatively new paradigm. According to the constructivist approach drastic Changes are take place in the education system .Important changes have been happening in the curriculum, teaching, learning, textbooks, assessment, role of the teacher and students. The constructivist thinking has been considered important to achieve the objectives of learning to live together, learning to learn, learning to know and learning to be (Delores Commission, 1996).

Any new reform which is proposed to introduce should have the sound research base .This is the responsibility of the person associated in this field to conduct researches on the different aspects of constructivist approach. The researcher has conducted a study in the same area .The researcher developed Co-operative teaching learning strategies and studied their effectiveness in Mathematics.

Key Words- Co-operative Teaching Learning Strategies, Knowledge Construction,   Constructivism, Concepts.

Introduction:

Constructivism is a relatively new paradigm which takes into account subjective contextual and pluralistic nature of knowledge. According to constructivist approach learners construct knowledge in the social and cultural context in which they are embedded. The knowledge can be expressed in a number of language and symbol forms .

The National Curriculum Framework (2005) also recommends that curriculum should help learners to become constructors of knowledge and emphasizes the active role of teachers in relation to the process of knowledge construction .Learners construct knowledge while engaged in the process of learning and the teachers role is to engage them in the process of learning through well chosen tasks and questions. "Active engagement involves enquiry, exploration , questioning, debates, application and reflection leading to theory building and creation of ideas .Schools must provide opportunities to question ,enquire, debate, reflect, and arrive at concepts or create new ideas" .(NCF2005,p.16)

According to constructivist approach drastic changes are take place in the education system. Important changes have been happening in the curriculum, teaching, learning, textbooks,

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

assessment, role of the teacher and students. Mathematics is one of the compulsory and important subject in the school curriculum .Curriculum of the mathematics is reconstructed according to NCF.2005

- **Main assumptions of constructivism are as follows**-
  1. Knowledge is dynamic (not static).
  2. Pupil constructs his own knowledge.
  3. Learning is activity based process.
  4. Learning is experience based process.
  5. Learning is context based.
  6. Learning is individual as well as social activity.
  7. Group members can help for learning.

     According to above assumptions the whole education process is changed. Learning becomes more focused. According to the principles of constructivism, changes are suggested in teaching learning strategies ,role of the teacher & evaluations system. But school teachers are not mentally ready to adopt the constructivist approach. So that researcher decided to work on that problem. The present study is undertaken to guide Mathematics teachers how to select the appropriate strategy for particular concept in day to day teaching learning process. It also aims how to evaluate students performance according to constructivist approach. The study also deals with to guide teacher educators to prepare lesson plans.

- **Need And Importance Of The Study**

     Present Text-books are prepared according to the constructivist approach. So the present study needs for the following reasons.
  - i)   To train Secondary school teachers for constructivist approach.
  - ii)   To plan the lessons according to constructivist approach.
  - iii)   To prepare test for the assessment of students according to constructivist approach.
  - iv)   To develop the higher level thinking abilities among the students.
  - v)   To know the process of students knowledge construction.
  - vi)   To know how the student learn within the group.
  - vii)   To develop social skills among the students.
  - viii) To find out the co-operative teaching- learning strategy which is useful for the knowledge construction of any concept.

- **Statement Of The Problem**

Development of co-operative teaching-learning strategies for the construction of knowledge of concepts in Mathematics at secondary level students and comparative study of its effectiveness.

- **Objectives Of The Study**

     To study the comparative effectiveness of co-operative learning – teaching strategies developed for the knowledge construction of concept -proportion selected from the ninth standard Algebra subject.

- **Hypothesis Of The Study**

   Research Hypotheses
  1. There is significant improvement of the students in the knowledge construction in the Algebra subject by using the strategy of Think pair share than the conventional method.

2. There is significant improvement of the students in the knowledge construction in the Algebra subject by using the strategy of Jigsaw than the conventional method.

3. There is significant improvement of the students in the knowledge construction in the Algebra subject by using the strategy of Jigsaw than the Think pair share.

- **Null Hypotheses -**

    There is no significant difference among the mean performance of group 'A', 'B' and that of group 'C' in the post test about to test knowledge construction of concept proportion.

1. There is no significant difference among the mean performance of group 'A', and group 'B' in the post test about to test knowledge construction of concept proportion.

2. There is no significant difference among the mean performance of group 'B', and group 'C' in the post test about to test knowledge construction of concept proportion

3. There is no significant difference among the mean performance of group 'C', and group 'A' in the post test about to test knowledge construction of concept proportion

- **Scope And Delimitations Of The Study.**

- **Scope of the study**

    Scope of the study are as follows

    1. The present study has its scope in secondary level Marathi Medium schools in the State of Maharashtra where all the text books are used which is prepared by Maharashtra state secondary & Higher secondary Education Board Pune.

    2. The present study was restricted to the population of the urban as well as rural area Marathi Medium School.

    3. Co-operative teaching - learning strategy which is prepared by the researcher is useful for all the teachers who are teaching Algebra at Ninth standard students.

- **Delimitations of the study**

    1. The present study was limited only to the students of Ninth standard in the Maharashtra state.

    2. The present study was restricted to only aided Marathi Medium Schools.

    3. The present study was limited to only nine concepts of Algebra subject of Ninth standard.

    4. The present study was related to only Think pair share and Jigsaw strategies.

    5. The size of the sample of the present study was ninety students out of one hundred and fifty students of L. G. R. Purohit Kanya Prashala Sangli.

    6. The present study was restricted only to urban area that is Sangli city.

    7. The present study was restricted to only educational year 2014-2015.

- **Procedure Of The Study And Method Followed**

- **Research Method and Design**

    According to the nature of the present study the researcher adopted Experimental Method for conducting research. The researcher considered the merits and demerits of all the three types of true experimental designs and decided to select post Test only Equivalent Group Design.

    Researcher has made some modifications in the present design, Instead of two groups researcher select three groups for the convenience.

Page 106

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Group	Pre Test	Treatment	Post Test
Control Group (Group A)	-	-	0_1
Experimental Group (Group B)	-	×	0_2
Experimental Group (Group C)	-	×	0_3

x – Treatment

0_1, 0_2, 0_3 – Post Test

This design is one of the most effective in minimizing the threats to experimental validity.

- **Sample Selection**

    For the present study, the researcher selected the sample from Late G. R. Purohit Kanya Prashala, Sangli for the convenience and feasibility.

    Ninety students out of one hundred and fifty students were selected randomly for the study.

    Size of Sample = 90 students.

    Group A (control group) = 30 students.

    Group B (Experimental group) = 30 students.

    Group C (Experimental group) = 30 students.

The whole procedure of sample selection is given in the thesis.

- **Variables in the study**
    1. Independent Variable

        Co-operative learning – teaching strategy.
    2. Dependent variable

        Knowledge construction of various selected concepts.

- **Tools Used For Data Collection-**

    In the present study researcher used the following tools for the data collection.
    1) Observation Schedule
    2) Rating Scale
    3) Post Tests
    4) Concept Maps

- <u>**Procedure Of The Study**</u>

    The researcher made three groups. Group A was assigned as control group. Group B was assigned as experimental group. Group C was also assigned as experimental group

    Group 'A' was taught by using conventional method, Group 'B' was taught by using Think Pair Share strategy and Group 'C' was taught by using Jigsaw strategy.

    All the three groups taught by researcher himself. The experiment commenced on 19th June 2014 and lasted for 21 day till 12th August 2014. Total 21 days the experiment was conducted. Before giving treatment to the both experimental groups, researcher took practice of co-operative learning of both groups. Two trained observers were appointed to observe the group activity. By using observation schedule the performance of the students were observed. Also one trained observer was appointed to observe the researchers teaching. Researcher prepared five point rating scale for lesson observation. Researcher taught all the selected nine concepts to three groups. After the treatment post tests were administered to all three groups. Lastly researcher administered cumulative post test and after the one month of experiment researcher administered retention test.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

The student's performance were assessed by using answer keys and data were obtained. Also researcher told to the students to draw the concept maps of Unit Ratio and proportion.

The students performance were assessed & qualitative data were obtained.

- **Analysis And Interpretation Of Data**

The obtained data were analyzed by using descriptive and inferential statistics in the light of research objectives. In the present study three groups were compared with each other so the researcher used F – test (ANOVA) for analyzing the data. Researcher also used t- test for analyzing the data, t-test was used to know the significance of difference between the mean scores of the students of group 'A' & 'B', Group 'B' & 'C' group 'C' & 'A' for comparing the mean score of all three groups graphs were used. On the basis of analysis and interpretations of data the conclusions were drawn.

- **Null Hypothesis 1**-

There is no significant difference among the mean performance of group 'A', 'B' and that of group 'C' in the post test about to test knowledge construction of concept proportion.

Analysis of Variance(ANOVA)

Sources of Variance	Degrees Of Freedom (df)	Square of Scores(ss)	Mean of the Scores(MS)	F-Value	Significance
Between Group	2	463.09	231.55		
Within Group	87	2962.87	34.06	6.79	Significant
Total	89	3425.96			

For 0.01 level of significance F value =4.98   For0.05 level of significance F value =3.15

Calculated F Value is greater than Table Value So Null Hypothesis is Rejected.

- **Null Hypothesis 2**

There is no significant difference among the mean performance of group 'A', and group 'B' in the post test about to test knowledge construction of concept proportion.

t-value

Group	Total No.	Mean	Standard Deviation	Degrees Of Freedom	t-value	Significance
A	30	10.27	6.46	29	3.20	Significant
B	30	14.5	5.06			

For 0.01 level of significance t- value =2.76   For 0.05 level of significance t- value =2.04

Calculated t-value is greater than Table Value So Null Hypothesis is rejected.

- **Null Hypothesis 3**-

There is no significant difference among the mean performance of group 'B', and group 'C' in the post test about to test knowledge construction of concept proportion

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- Department Of Education,Shivaji University,Kolhapur (Maharashtra) | ISSN 2349-638x Impact Factor 2.147 |

- **t-value**

Group	Total No.	Mean	Standard Deviation	Degrees Of Freedom	t-value	Significance
B	30	14.5	5.06	29	0.86	Not Significant
C	30	15.5	5.90			

For 0.01 level of significance t- value =2.76   For 0.05 level of significance t- value =2.04

Calculated t-value is less than Table Value, So Null Hypothesis is accepted

- **Null Hypothesis 4-**

There is no significant difference among the mean performance of group 'C', and group 'A' in the post test about to test knowledge construction of concept proportion

- **t-value**

Group	Total No.	Mean	Standard Deviation	Degrees Of Freedom	t-value	Significance
C	30	15.50	5.90	29	3.35	Significant
A	30	10.27	6.46			

For 0.01 level of significance t- value is 2.76   For 0.05 level of significance t- value is 2.04

Calculated t-value is greater than Table Value, So Null Hypothesis is rejected.

- **Results-**

1. Think Pair Share strategy and Jigsaw strategy are equally effective for construction of knowledge of concept proportion .
2. Think Pair Share Strategy is more effective than Conventional method for construction of knowledge of concept proportion
3. Jigsaw Strategy is more effective than Conventional method for construction of knowledge of concept proportion

- **Concluding Remarks-**

Researcher has developed & studied the effectiveness of co-operative teaching – learning strategy for the construction of knowledge of various concepts of Algebra at 9th standard. The study shows that Jigsaw &Think pair share strategy are equally effective for the construction of knowledge of concept Proportion.

It can be concluded that establishment of Thinker Friendly classrooms is necessary for developing higher order thinking of the students. Hence the teacher should give proper time to think the answer of the questions posed by the teachers, give opportunity to observe and motivate the students for problem solving for the all round development of the students. It is necessary for them to create new knowledge by themselves.

References:

Aggarwal, R. S. (2012). Foundation Mathematics for class 7 & 8 (ICSE

Board). New Delhi: Goyal Brothers Prakashan.

Best, J. W., & Kahn, J. V. (2005). Research in Education. (9th ed.). New

Delhi : Printice Hall of India private Limited.

Bhimasankaram, C. V. (1978). Mathematics Education. Bombay : Book Field centre.

Bhoodev, singh. (1988). Teaching Learning Strategies And Mathematical

Creativity. Delhi: Mittal Publication.

Biswajit, Behara. (2009, March). Problem Solving Skills in Mathematics

 Learning. EDUTRACK, p.34-36.

Buch, M. B. (Ed.) (1997). fifth Survey of Educational Research. New

Delhi : National Council of Educational Research and Traning, 1997.

Cindy, E. Hmelo – Silver, clark, A. chinn, carol, k. k. Chan, & Angela,

M. O. Donnell. (Eds) (2013). The International Handbook of

Collaborative Learning. New York : Routledge Taylor & Francis Group.

Chandra, S. S. & sharma, R. K. (2002). Research In Education. New

Delhi: Atlantic Publishers And Distributors.

Deepa, R. P, & Sadananthan M. (2012, May). Attitude of Secondary

School Teachers Towards Co-operative Learning. EDUTRAKC, 34 – 36.

Deaki'n University. (2012). Critical thinking. Retrieved, June,20, 2013,from

http://www.deakin.edu.au/-data/assets/pdf-e/0012/51222/critical- thinking.pdf

ICT PEDAGOGY INTEGRATION IN THE FIELD OF TEACHING AND LEARNING: ISSUES AND CHALLENGES

Smt. J. N. Shinde,[a]

Research Scholar,

Dept. Of Education,

Shivaji University, Kolhapur

nitinsonaje@yahoo.co.in

Dr. T. B. Naik,[b]

Research Guide,

S.M.T. Government College of Education,

Kolhapur

vikarant_tarsing_naik@yahoo.co.in

Abstract:

Teaching is becoming one of the most challenging professions where knowledge is expanding rapidly and modern technologies are demanding that the teachers to learn how to use these technologies in their teaching. Implementing the ICT – pedagogy integration in teaching and learning are highly complex and possibly one of the challenging tasks. Knowledge and skill of ICT has to be inculcated into pedagogy in such a way that its implementation can improve learning. This paper focuses on issues and challenges relating to ICT pedagogy integration in the field of teaching and learning integration.

Keywords: ICT, Pedagogy, Integration, Digital era, Skill

1.1 Introduction:

With the advancement of Information and Communication Technology (ICT), the world is shrinking at a rapid pace. Today, ICT serves as a major factor in changing the global economy. One of the fundamental functions of education is to help the people to find their way in the society by equipping them with enabling necessary skills, knowledge, and competencies and it is a continuous processes. The traditional three R's-literacy (**R**eading, w**R**iting, and a**R**ithmetic) is challenged by an unprecedented rapid creation and dissemination of knowledge and information, Kwadwo (2007). ICT provides a powerful tool which can help in transforming the present isolated, teacher centred and text bound classrooms into technology enriched, student-focused and interactive knowledge environments. Development in technology has changed the world outside the classroom which is more eye catching and interesting for a student. Hence, the importance of ICT is gaining the place in school curricula. The major objective of ICT in curricula is developing skills, knowledge, and understanding in the use of ICT in everyday life. ICT tools enable students to access, share, analyze, and present information gained from a variety of sources and in many different ways. To achieve these objectives, a teacher plays a pivotal role. Hence, knowledge of ICT and skills to use it has gained enormous importance and teachers are expected to know to integrate ICT into the subject areas to make learning more meaningful.

This paper focuses on issues relating to ICT pedagogy integration in the field of teaching and learning.

1.1.1 Pedagogy:

Pedagogy is described as the science / theory or art / practice of teaching that makes a difference in the intellectual and social development of students. It is essentially a combination of knowledge and skills required for effective teaching. The most important aspect of imparting technology in the curriculum is pedagogy.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- Department Of Education,Shivaji University,Kolhapur (Maharashtra) | ISSN 2349-638x Impact Factor 2.147 |

1.1.2 Importance of ICT in Education:

India recognized the importance of ICT in education ever since the dawn of its independence. Different policies have been formulated for the integration of ICT in education. Few of these are,

- Computer Literacy and Studies in Schools (CLASS),
- Information and Communication Technology in Schools (2004),
- The Information Technology Act (2000),
- The Science and Technology Policy (2001),
- National Task Force on Information Technology and Software Development (1998),
- ICT Policy in School Education (2009).

Taking into account the efforts being made by the government, it can be said that India is heading towards ICT-pedagogy integration.

1.1.3 ICT in Digital Era:

ICTs can help to meet the educational requirements of the digital era, only if all attempts to use ICT in education are derived by sound pedagogical principles. To achieve this, ICT-pedagogy integration is essential, since technology, on its own, will not bring about the desired changes in students learning. For 21st century, it is a need to develop technology savvy teachers who are able to prepare students by providing meaningful education through the integration of technology with healthy blending of the cult of traditional pedagogy with the impress of the cult of ultra-modern ICT inputs. Carlson and Gadio (2002) states "Educational technology is not, and never will be, transformative on its own, it requires teachers who can integrate technology into the curriculum and use it to improve student learning."

1.1.4 Integration of ICT into Teaching and Learning:

Wang and Woo (2007), stated that the integrating ICT into teaching and learning is as old as other technologies such as radios or televisions. Earle (2002) define ICT integration is a process of using any ICT tool to enhance student learning. It is more of a process rather than a product and hence, the technologies must be pedagogically sound and go beyond information retrieval to problem solving.

Pedagogy tends to be placed over technology and this aligns with UNESCO's (2005) postulation about ICT-pedagogy integration, "Mere mastering the hardware and software skills is not enough, teachers need to realize how to organize the classroom to structure the learning tasks so that ICT resources become automatic and natural response to the requirements for learning environments in the same way as teachers use markers and whiteboards in the classroom."

1.2 Methodology:

1.2.1 Pedagogy Associated with Education:

The context of learning is significant because learning is circumstantial and situational specific. The teacher's role in web-based or online teaching has been very different from the role in formal education, with terms like facilitator and the ways of interaction. The online teacher will need to arrange a range of activities to engage the students, and a range of roles that he or she will fulfil. In web based teaching, the teacher would be engaged in preparation and organization of instructional materials based on the same kind of assumptions about learners that are held by textbook authors.

Page112

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | **ISSN 2349-638x** |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | **Impact Factor 2.147** |

1.2.2 Pedagogical Reasoning:

The processes of planning, teaching, assessing and evaluating, and the knowledge needed for these processes, are described in Shulman's model of pedagogical reasoning (Shulman,1987). Accordingly, teachers' knowledge bases include the following categories of knowledge:

- Content knowledge.
- General pedagogical knowledge,
- Curriculum knowledge,
- Pedagogical content knowledge with special amalgam of content and pedagogy,
- Knowledge of learners and their characteristics,
- Knowledge of educational contexts,
- Knowledge of educational ends, purpose and values and their philosophical and historical grounds.

1.2.3 Factors Influencing Teachers Decisions to Use ICT in Classroom:

Numbers of factors are influencing the teacher's decision to use ICT in the classroom. Some of these are stated by Rastogi Anita and Malhotra Smriti (2013) are as follows,

- individual skill, attitude and access to resources,
- quality of software and hardware,
- attitude towards technology,
- competence and ease of use,
- educational and self-efficacy beliefs,
- incentives to change,
- support and collegiality in the school,
- school and national policies, and
- commitment to professional learning and formal training.

1.2.4 Techno-pedagogy a Skill:

In the present era, it is must to every teacher that they should know how to use technology, pedagogy and subject area content effectively in their classroom teaching. This way teacher integrates technology that has the potential to bring change in the education process. Hence, attitude and self-efficacy towards technology play an important role. In techno-pedagogy, there are three areas of knowledge, namely: content, pedagogy, and technology, (Khirwadkar, 2009),

- Content (C) is the subject matter that is to be taught.
- Technology (T) encircles modern technologies such as computer, internet, digital video, overhead projectors, blackboards, books, etc.
- Pedagogy (P) describes the collected practices, processes, strategies, procedures, and methods of teaching and learning including the knowledge about the aims of instruction, assessment, and student learning.

1.2.5 Pedagogical Approaches towards Use of Technology:

There are three approaches proposed by UNESCO (2005), in a conventional education system, viz., teacher centred, learner centred and a combination of these two approaches.

- **Teacher Centred Approach:** The focus is on the teacher as the source of knowledge. The teacher tends to be active while the learner is expected to receive the knowledge being dispensed rather passively. The teacher talks, the learner listens. The teacher acts, the learner watches. This

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

approach is convenient for large size of class.

- **Learner Centred Approach:** The emphasis is on the learner as knowledge seeker, with the teacher as facilitator and guide. The learner tends to be active, talking and doing things in the process of learning. The teacher designs and manages the setting as well as the process for learning. This is convenient for small size of class.

- **Combination of Teacher and Learner Centred Approach:** This method attempts to strike a balance between the teacher as the main source of knowledge, on one side, and the learner as an active seeker of knowledge, on other side. It is highly interactive, with the focus on shifting alternately between teacher and learner at different point of time.

1.2.6 Pedagogical Integration of ICT into Teaching and Learning:

For effective integration of ICT in teaching and learning, both teachers and students need to demonstrate a set of competencies related to IT skills and pedagogical knowledge. Bernard Bahati, (2010) identified 12 most competencies that they should acquire and make use of ICT as follows,

i. To know how to use the internet for information and resources in the preparation of classes,
ii. To know websites (portals, web pages, electronic magazines, dictionaries, search engines, etc.) related to their specialty,
iii. To elaborate and to use presentations to explain topics in class,
iv. To know how to use specific computer programs in their professional field,
v. To design a personal website to support their face to face classes,
vi. To know how to use the main tools of the internet to communicate,
vii. To guide the students in the use of ICT,
viii. To know collaborative working strategies mediated by ICT,
ix. To design online tutorship to follow students learning,
x. To know the use of virtual platform to design activities which are complementary to the face-to-face activities,
xi. To design multimedia resources for their academic use,
xii. To collaborate with other teachers in their specialty through ICT.

Karsenti (2009) summarizes the required student's competencies to effectively involved in the process of pedagogical ICT integration and groups these competencies into three categories as follows,

A. General competencies:
- Knowledge of different parts of the computer,
- Familiarization with basic software,
- Use of interactive software to create and save text, tables, annotations, objects, copy and paste images,
- E-mail communication.

B. Capacity to use ICT for academic activities:
- Knowledge and use of search engines,
- Use of ICTs for research,
- Navigation on the websites containing educational resources,
- Download document,
- Creation of resource materials.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:-	**ISSN 2349-638x**
Department Of Education,Shivaji University,Kolhapur (Maharashtra)	**Impact Factor 2.147**

C. Capacity to use ICT for other learning purposes:

- Use of other ICT resources (digital camera, and slides overhead projector) to teach the whole class,
- Use of Office software (Word, Excel, PowerPoint) for professional purposes to create and adapt educational resources, writing reports, planning working time, data recording and miscellaneous notes, etc.,
- Using generic software to create resources for self-learning,
- Software for creating webpage, drawing, etc.,

1.2.7 Challenges to Pedagogical Integration of ICT in Teaching and Learning:

The factors that prevent teachers from making full use of ICT are grouped into two broad categories viz, institution level challenges and human level challenges, (Mojgan A., *et.al.* (2009). Some of the major challenges are summarised as below.

- **Institution level challenges:** These barriers includes, lack of necessary software and ICT facilities, poor maintenance, insecure ICT facilities and resources, lack of vision, plan, and framework about the integration of ICT in teaching and learning, lack of enough time, big class sizes, lack of real commitment and involvement of top management, poor internet access and connectivity, lack of technical support, poor and unreliable electricity supply.

- **Human level challenges:** These barriers are divided into two levels.

Teacher's level: It includes, lack of confidence and experience with ICTs, individual resistance to change, lack of adequate mastery of language, lack of teachers competencies and expertise in using ICT in pedagogical practices, lack of effective training and staff development,

Student's level: Lack of experience with ICT due to educational background, lack of adequate mastery of language, lack of competencies and skills in using ICTs, lack of competencies and skills in using ICTs in learning activities.

1.3 Conclusion:

Education plays a vital role in enriching the society and human resource. Teacher must adapt, change and be familiar with using emerging technologies that can encourage student participation. In order to capitalize on the potential of new technology, particularly ICT as a learning tool there is a need of the professional development of teachers which allows teachers to construct professional knowledge about pedagogy, content, and technology with the creation of constructivist learning environments. Teaching with use of modern technical facilities enhances student's knowledge and improves the teaching-learning process in this fast changing complex world.

1.4 Acknowledge:

Authors duly acknowledge Prof. (Mrs.) Pratibha Patankar, Head, Dept of Education, Shivaji University, Kolhapur and her department team for their help.

1.5 References:

Bernard Bahati, (2010). Is ICT Being Integrated Pedagogically into Teaching and Learning Events at Kigali Institute of Education (KIE)?, Unpublished research report of Master of Education, University of the Witwatersrand

Carlson, S. and Gadio, T. (2002). Teacher Professional Development in the Use of Technology in UNESCO and Academy for Educational Development (AED), Technologies for Education: Potentials, Parameters, and

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Prospects, Paris and Washington DC: UNESCO.

Karsenti, T. (Ed.). (2009). Pedagogical Use of ICT: Teaching and Reflecting Strategies, Ottawa, Canada: IDRC (International Development Research Centre).

Khirwadkar, A. (2007). Integration of ICT in Education: Pedagogical Issues, Faculty of Education Review: A Bi-Annual International Journal of Education vol. 1 No. 1 p. 85-103, retrieved on Dec 10, 2015 http://www.journal.au.edu/edu_journal /jan2007/article06_vol1no1.pdf.

Koehler, M. J. and Mishra, P. (2009). What is Technological Pedagogical Content Knowledge? Contemporary Issues in Technology and Teacher Education, 9(1), 60-70.

Kwadwo Gyambrah, M. (2007). E-Learning Technologies and Its Application in Higher Education: A Descriptive Comparison of Germany, United Kingdom and United States, Inaugural-Dissertation, PhD Dissertation, Maximilians-Universität München.

Mojgan, A., Kamariah, A. B., Wong, S. L., Bahaman, A.S., and Foo Say F. (2009). Factors Affecting Teachers Use of Information and Communication Technology, International Journal of Instruction, January 2009, Vol.2, No.1.

Rastogi Anita, Malhotra Smriti, (2013). ICT Skills and Attitude as Determinants of ICT Pedagogy Integration, European Academic Research, Vol. I, Issue 3, June 2013

Shulman, L. (1987). Knowledge and Teaching: Foundations of the New Reform, Harvard Educational Review, 57, pp. 1–22.

UNESCO, (2005). Regional Guidelines on Teacher Development for Pedagogy Technology Integration, Based on a Series of Workshops in Pedagogy Technology Integration, UNESCO Asia and Pacific Regional Bureau for Education.

Wang, Q.Y. and Woo, H.L. (2007). Systematic planning for ICT integration in topic learning. Educational Technology and Society, 10(1), 148–156.
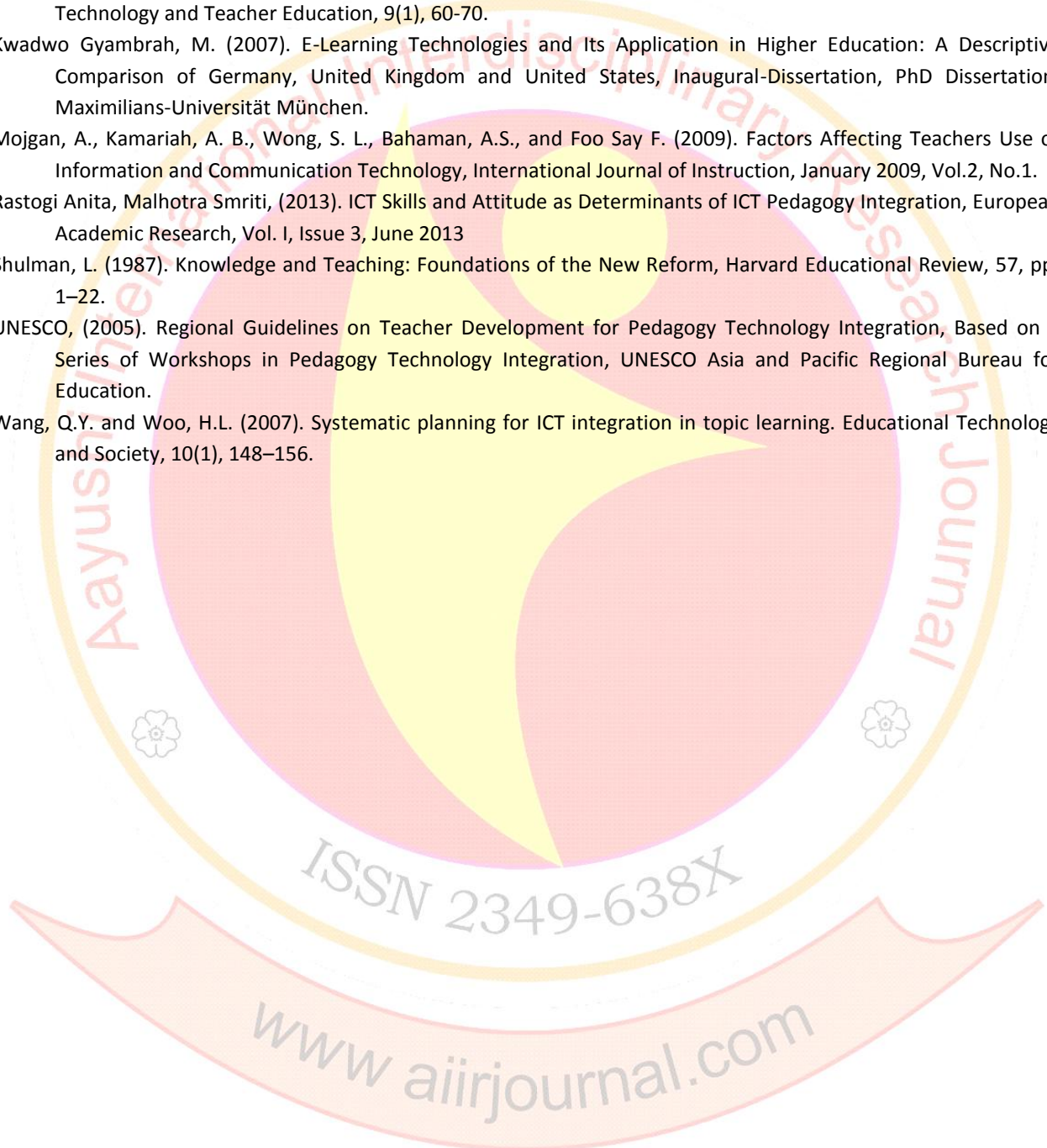
EFFECTIVENESS OF CONSTRUCTIVISM PEDAGOGY PROGRAMS IN MATHEMATICS SUBJECT

Ranjit Hanmantarao Desai
Assist- Teacher.   MSc (Maths) M.Ed. (SET.NET)
Gur. D.J.Sardeshapande Adhyapak Vidhyalay,
Kowali -Rajapur, Tal- Rajapur Dist. –Ratnagiri
Ph. No. - 9028069229
Email. – ranjit_mscmed@rediffmail.com

Abstract

Education means to develop internal ability with mental, emotional and active development in students to make them capable and live responsibly by implementing different action oriented programs. Research Objectives are to implement real action oriented programs for second std. students in experimental group and to check effectiveness of action oriented programs carried out on second std. Students. Significance of the study is This research helps students to increase interest in maths, creative thinking, critical thinking , logical thinking and analytical thinking . Research methodology is Experimental Research method has been used for this study along with in this them Equal Research Design is used.

Research sampling is Zilha parishad vishwanath vidhyalay school Rajapur dist Ratnagiri has been selected for this research by Incidental Sampling Method and 42 students are selected by Purposive Sampling Method. Null hypothesis of this study are Achievement level of students after implementation patternlised games will have no change and Achievement level of students after implementation patternlised model will have no change . In this research second std. students have been selected by arranging them in descending order of their marks which they obtained in first std. second term exam of maths subject. These students are divided in three equal groups. One of these three groups have been taught by Inductive Teaching Method, second group is taught by patternalised game and third group by patternalised model. All other situations are same for all three groups. After that achievements test has been given to all three groups. observation has been done by classifying scores by using percentage. Graph, t- test and (0-20) – poor, (21-40) – bad, (41-60)- good, (61-80) – better , (81-100) – excellent these scales are used in rating scale for analysis and meaning. By analysis information (0-40) – low, (41-60) – Medium, (61-100)- More scales are divided and then conclusion has been derived.

Observations and interpretation for this study are Mean of score obtained after application of Inductive Teaching Method is 42%. which means, Mean of score obtained after application of Inductive Teaching Method is good and Mean of score obtained after application of patternalised games is 83%.which means , Mean of score obtained after application of patternalised game is excellent. Mean of score obtained after application of patternalised model is 92%. which Means, Mean of score obtained after application of patternalised model is excellent. By using Gratte t -test table df = 13 and in 0.01 level the value of t = 3.01 and calculate valve of t = 12.07 calculate of valve t = 12.57 is grater than table value of t= 3.01 Which means, research hypothesis accepted and null hypothesis is rejected and second experiment df -13, and in 0.01 level the value of t = 3.01 and calculate value of t = 9.05 is grater than table value of t= 3.01 . Which means the research hypothesis is accepted and null hypothesis is rejected . conclusions of research are Achievement level of students after appling patternalised game has increased. Achievement level of students after appling patternlised model has increased and Achievement level of students has increased by constructivism pedagogy programs in mathematics subject

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

1) Introduction:-

Education means to develop internal ability with mental, emotional and active development in students to make them capable and live responsibly by implementing different action oriented programs. It gives chance for development their internal ability which helps to develop qualitative development in per-primary students. Intern knowledge and skill achieved by action, experiences, games and models has been taken new content of pattern for learning.

2) Research Objectives:-

1) To prepare constructivism pedagogy programs of content pattern for pre-primary students.
2) To teach second std. Students of control group by using inductive teaching method of teaching
3) To implement real constructivism pedagogy programs for second std. students in experimental group
4) To check effectiveness of constructivism pedagogy programs carried out on second std. Students.

3) Significance of the study:-

1) This study gives the students an opportunity of learning through action, play, experiences healthy atmosphere by this method.
2) This research helps the teachers to start new content of pattern effectively.
3) This research helps students to increase interest in math's, creative thinking, critical thinking, logical thinking and analytical thinking.
4) This research helps students to solve the sums of pattern and create sums on pattern.
5) By getting an opportunity of learning according they own ability, interest and capacity, they can easily understand and apply the knowledge of pattern content.

4) Research Methodology:-

Experimental Research method has been used for this study along with in this design them Equal Research Design is used. Students have been divided in three equal groups. Among them one group is controlled group which is taught by inductive teaching method, the second group is first experimental group which is taught by using patternalised games and the third group is second experimental group which is taught by using patternalised model.

5) Research Sampling:-

Zilha parishad vishwanath vidhyalay school Rajapur dist Ratnagiri has been selected for this research by Incidental Sampling Method and 42 students are selected by Purposive Sampling Method. Scores obtained in second term examination of 1st std. 42 students in previous year has been considered the students are divided in three equal groups. Thus there are 14 students in each group.

6) Hypothesis of Research:-

1) Achievement level of students after implementation Patternlised Games will increase.
2) Achievement level of students after implementation Patternlised Model will increase.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

7) Process of Research:-

I)   Forty two students form Zilha parishad Vishwanath vidhyalaya Rajapur dist- Ratnagiri have been selected by Purposive Sampling Method.

II)   **Games prepared on this pattern content as follows.**

1) Repeat action one clap, two claps, three claps again and again
2) Take tarn to right then left again right and left accordingly
3) Jump inside the circle and outside the circle repeatedly
4) Take a round to yourself first from Right side and second from left side and repeat again and again.
5) Prepare pattern by using various sounds of birds, animals etc.
6) Prepare patter by using various dancing steps.
7) Prepare pattern by using various hand and foot movements

III)   **Patternalised Model is prepare as follows**:-

a) Instruments: Big wooden shelf, 50 small squares of plywood, 1 to 50 numbers card , photos of birds, animals , fruits, flowers etc,

b) Process of Preparing the model:-

    i)   Take big wood shelf and fix the cylindrical spicks to proper box type pocket in same distances in straight line

    ii)   Paste number cards, photos of animals, fruits, birds, flowers on wooden square

c) **Diagram of model:-**
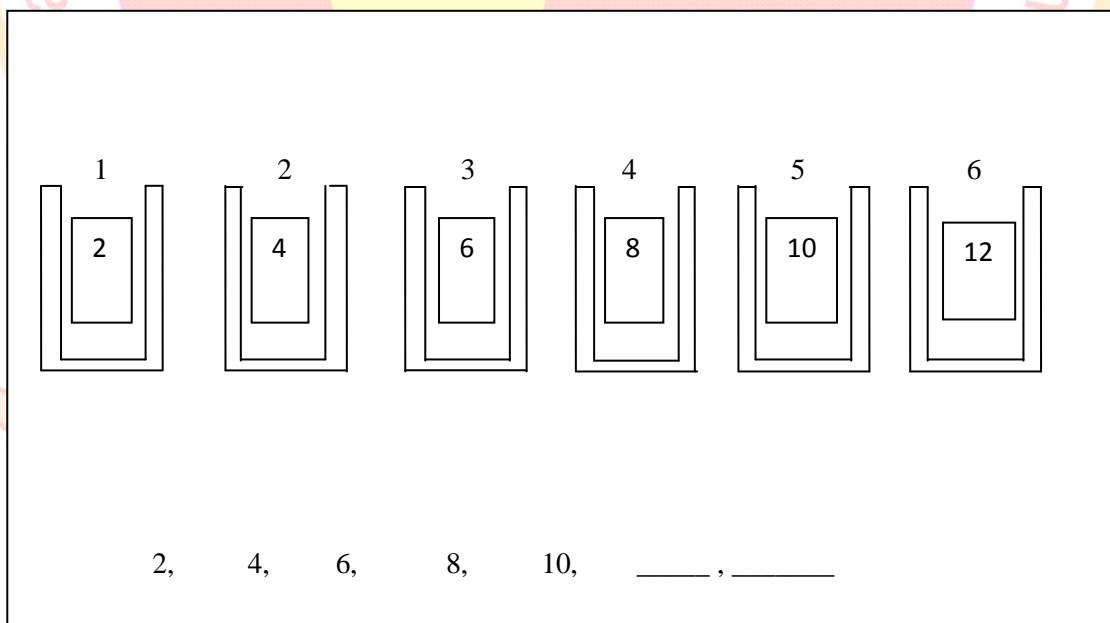
Use Of Model:-

    Insert that wooden square of various numbers card, photos of birds, animals, fruits, flowers in that wooden pocket and prepare various patterns.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

IV) In this research second std. students have been selected by arranging them in descending order of their marks which they obtained in first std. second term exam of math's subject. These students are divided in three equal groups. One of these three groups have been taught by Inductive Teaching Method, second group is taught by patternalised game and third group by patternalised model. All other situations are same for all three groups. After that achievements test has been given to all three groups. Observation has been done by classifying scores by using percentage. Graph, t- test and (0-20) – poor, (21-40) – bad, (41-60)- good, (61-80) – better , (81-100) – excellent these scales are used in rating scale for analysis and meaning. By analysis information   (0-40) – low, (41-60) – Medium, (61-100)- More scales are divided and then conclusion has been derived.

8) Data Analysis:-

I) **Analysis of control group (Inductive Teaching Method), Experimental group I (Patternalised game), experimental group-II (patternlised model) :-**

Mean of control group (Inductive Teaching method)	Mean of Exp group (I) patternalised games	Mean of Exp Group- II patternalised model
42%	83%	92%
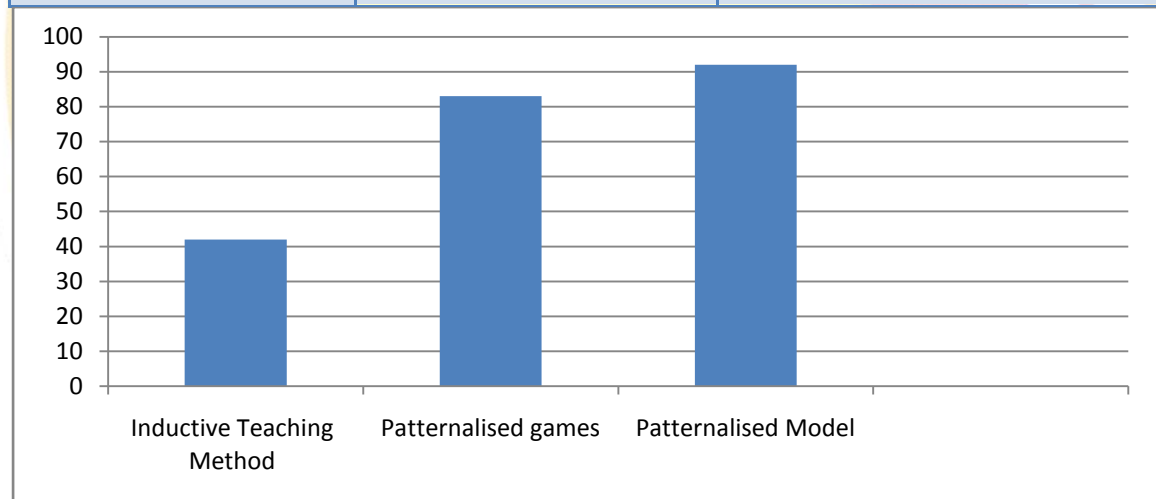
Observations and interpretation:-

i) Mean of score obtained after application of Inductive Teaching Method is 42%. Which means , Mean of score obtained after application of Inductive Teaching Method is good.

ii) Mean of score obtained after application of Patternalised Games is 83%. Which means, Mean of score obtained after application of Patternalised Game is excellent

iii) Mean of score obtained after application of Patternalised Model is 92%.Which means, Mean of score obtained after application of Patternalised Model is excellent.

iv) Differences of mean between scores as obtained after application of Inductive Teaching Method and use of Patternalised Games is 41%. Which means, differences between score obtained after application of Inductive Teaching Method and use Patternalised Games is good

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

v) Differences of mean between score obtained after application of Inductive Teaching Method and Patternalised Model is 50%. Which means, differences between score obtained after application of Inductive Teaching Method and use Patternalised Model is good

vi) Analysis of Data by using test:-

A) Experiment – I

Experiment	Sample N	Mean (%)	Standard Devotion	Degree of Freedom df=(N-1)	Calculate t-value	Table t- value In (0.01) Level
Control Group Inductive Teaching Method	14	42	21.4	13	9.05	3.01
patternalised games	14	83				

Observation and analysis:-

By using Gratte t- tert table df -13, and in 0.01 level the value of t = 3.01 and calculate value of t = 9.05 is grater than table value of t= 3.01

Which means the research hypothesis is accepted and null hypothesis is rejected.

Therefore achievement level of students after implementation patternlised games has been increased.

B) Experiment – II

Experiment	Sample N	Mean %	Standard Devotion	Degree of Freedom df=N-1	Calculate t-valve	Table t- value In(0.01) Level
Control group teaching inductive method	14	42	6.8	13	12.07	3.01
Experiment group II patternalised model	14	92				

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Observation & analysis:-

By suing Gratte t -test table df = 13 and in 0.01 level the value of t = 3.01 and calculate valve of t = 12.07 calculate of valve t = 12.57 is grater than table value of t= 3.01

Which means, research hypothesis accepted and null hypothesis is rejected therefore achievement level of students after implementation patternalised model has been increased.

9) Research conclusion:-

A) **General conclusions of Research:-**
1) Percentage of mean obtained is less after Inductive Teaching Method.
2) Percentage of mean obtained after applying games on pattern in more
3) Percentage of mean obtained applying model on pattern is more
4) Mean obtained after applying patternalised games is more than that of Inductive Teaching Method
5) Mean obtained after applying patternalised model of more than that an Inductive Teaching Method
6) Mean obtained after applying patternalised model of more that of patternalised games
B) **Specific conclusions of research**:-
1) Achievement level of students after applying patternalised game has increased.
2) Achievement level of students after applying patternlised model has increased.
3) Achievement level of students has increased by action oriented programs.

10) Recommendations of research:-

1) Recommendations for government

1) To help school by providing supported material magazines, books for self study of pattern.
2) Provide advanced and latest method of using various facilities like computer, internet, printer for collection information.
3) Provide economic facilities to school teacher to prepare patternlised models.
4) Prepare handbook having prepared information games on patterns and patternlised model.
5) Arrange workshops, practical's, seminars at cluster, taluka and district level for teacher to give information of activity, Project selection evaluation tools and related pattern content.

2) Recommendations for principal:-

1) Arrange workshops and provide material to teacher for preparing patternlised models.
2) Encouragement should be given to teachers to express patterns content in building decoration, talking walls, sitting arrangement charts in classroom and outside the classroom.
3) Prepare planning of field trip to explain pattern in things & animals, birds and in plants. Be aware about proper implementation of above activities.
4) Give guidance and encouragement to innovative teacher to prepare new games on pattern and patternlised models.
5) Make available reference material, magazines and newspapers in school library for students to understand pattern content by self evaluating method.

Page122

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal) website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749) Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

6) Try to give more periods to pattern content while preparing annual planning.
7) Principal should give encouragement to students to prepare patternlised models and arrange exhibition of models and give awards to them.
8) Ask students to prepare games on pattern in school competition & give awards,

3) Recommendations for teachers:-

1) Teachers should prepare various patternlised models and should use them in teaching in the classroom
2) Teacher should motivate and guide students to use pattenalised models prepare by teachers in self learning.
3) Teachers should prepare teaching structure depending on games on patterns made by teaching.
4) Teacher should provide small opportunities to play small games on pattern form beginning of the year. So that it will be easy for the teachers to teach pattern content and also easy to students to learn pattern content.
5) Teacher should encourage student to identify pattern present in plants things, animals, and birds in environment.
6) Teachers should encourage students to observe pattern in sitting arrangement in the classroom changed for every week.
7) Teacher should involve pattern content in classroom decoration, talking walls and in charts
8) Teacher should encourage students to observe pattern in picture showed by teacher in every week or by pictures painted on board.
9) Activity and project should be prepared by students in the school based on pattern.
10) Teacher should help students to use reference material available in the school library.

4) Recommendations for students:-

1) Students should arrange games on pattern and patternlised models by self learning method.
2) Students should prepare list of patterns form reference books. Magazines, newspapers available in library and also collect cutting on pattern.
3) Students should identify the pattern in school environment, talking walls and in classroom charts.
4) Students should ask teacher to guide to identify the pattern present in daily incidence, animals, birds, and plants.
5) Everybody should participate in competition of preparing games on patters and patternlised models.
6) Students should present innovative models by himself in Math's and Science exhibition.
7) Students should prepare various projects and activities related to pattern content.

This research useful for understanding the content pattern after using games. As pattern and patternalised model in day to day life application creates interest in math's subject. This research also useful to developed skill, core elements, competency and all round development of students.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

संदर्भग्रंथ सूची

कदम, चा.पा. (१९९०)ः शैक्षणिक मूल्यमापन आणि संख्याशास्त्र, विद्या प्रकाशन, पुणे.

ढांडेकर, वा.ना. (२००७)ः शैक्षणिक मूल्यमापन, अनमोल प्रकाशन, पुणे.

भिवला, डी.एन. (१९९८)ः मापन व संख्याशास्त्र, विद्या प्रकाशन, पुणे.

मुळे आणि उमाठे(१९८७)ः शैक्षणिक संशोधनाची मूलतत्वे,शिक्षक साहित्य निर्मिती मंडळ, नागपूर.

पंडीत, आणि श्रीम.समिनी (१९९२)ः शैक्षणिक कृतिसंशोधन, विद्या प्रकाशन, पुणे.

गंगाधर कायढे – पाटील (२००८)ः सामाजिक संशोधन, फडके प्रकाशन, पुणे.

जगताप, ह.ना. (१९९७)ः गणित अध्यापन पध्दती, विद्या प्रकाशन, पुणे.

पानसे, र. (२०१०)ः रचनावादी शिक्षण, रीच प्रिंट.

घोरमोड, के.यु. शैक्षणिक संशोधनाची मूलतत्वे, विद्या प्रकाशन, नागपूर.

कदम, चा.पा., आणि बोंढार्डे, कै. (१९९८)ः गणित अध्यापन पध्दती, नित्यनूतन प्रकाशन, पुणे.

राष्ट्रीय अभ्यासक्रम आराखडा (२००५)ः राष्ट्रीय शैक्षणिक संशोधन व प्रशिक्षण परिषढ, नवी दिल्ली.

राज्य अभ्यासक्रम आराखडा (२०१०)ः महाराष्ट्र राज्य शैक्षणिक संशोधन व प्रशिक्षण परिषढ, पुणे.

महाराष्ट्र राज्य पाठयपुस्तक निर्मिती अभ्यासक्रम संशोधन मंडळ (२०१०)ः गणित पाठयपुस्तक , इ.२री,एससीईआरटी, पुणे.

प्राथमिक शिक्षणा अभ्यासक्रम, हस्तपुस्तिका पाठयपुस्तक (२००४)ः महाराष्ट्र राज्य शैक्षणिक संशोधन व प्रशिक्षण परिषढ, पुणे.

प्राथमिक शिक्षणा अभ्यासक्रम , हस्तपुस्तिका पाठयपुस्तक (२०१२)ः महाराष्ट्र राज्य शैक्षणिक संशोधन व प्रशिक्षण परिषढ, पुणे.

Buch, M.B.(1988-92).Fifth Survey of Research in Education & Training, New Delhi: NCERT.

ROLE OF THE TEACHER IN CONSTRUCTIVIST CLASSROOM

Ms. Suvarna Shivajirao Kamble

Shivaji University Kolhapur

sskamble26@gmail.com

8087445387

Abstract

The classroom management strategies well-suited to constructivist classroom are not unusual, but they are ones that enable teachers to create safe and caring environment in which learners are the focus. In constructivist classroom, the teaching learning strategies seem to be laid down by learners' needs, not by the teacher's beliefs and preferences. Teachers are more like mentors, creating situations that facilitate learning. Teachers share their control with their learners, and learners are expected to control themselves. A change from instructionist to constructivist approach suggests a refocus and redefinition of roles.

In constructivist classroom, the role of the teacher (planning, organizing, control and evaluation) take on a new meaning. Instead of planning a lesson, the teacher needs to engage more in strategizing the lesson. This means that the teacher needs to consider what strategies could be used to create collaborative learning environments, what strategies would facilitate the construction of new knowledge, etc. Organising move from organizing learning material or the transmission of new knowledge, to contemplating ways in which the class could be grouped so that co-operative learning, team learning, etc. could be acquired. Control as teacher directed moves to created emphasis on group control and locating greater power in the hand of learners to exercise self-discipline. Evaluation in the form of external examination and testing is replaced with ideas such as self-assessment, peer-assessment, diagnostic assessment, etc.

Thus, a change from instructionist to constructivist approach purposes a new range of classroom management principles and processes.

Keywords: Constructivist, Classroom Management

What is Constructivism?

In constructivism, there are 10 basic learning principles.

1. Learning is a process of structuring meaning in an active way.
2. Learning includes conceptual changing
3. Learning is a reconstruction for developing students' apprehension to more complex and effective mode
4. Learning is subjective.
5. Learning is internalization of students'learning with different symbols, graphics, metaphors and models.
6. Learning is shaped with situations and the condition of environment. Thanks to this, students learn solving problems such as real life problems instead of making exercises.
7. Learning is social process. It means that learning develops with help of communication such as sharing their perspective, exchanging of information and solving problems collaboratedly

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

8. Learning is an emotional process because mind and emotion are associated with each other so the nature of learning are affected from these items: the student's ideas about his abilities, the clearness of learning goals, personal expectations and motivation for learning. The appropriateness of learning to students development in terms of difficulties, its association with student's need or real life is important in learning process.

9. Learning is developmental and is affected from person's physical, social, emotional and logical development.

10. Learning is student-centred and learning focuses on student's interests and needs not teacher's need or lesson book's needs.

11. Finally, learning doesn't start at definite time or doesn't finish at definite time. In contrast it continues in a permanent way.

Comparison between traditional and constructivist classroom

Traditional classroom –

1. Curriculum begins with the parts of the whole. Emphasizes basic skills.
2. Strict adherence to fixed curriculum is highly valued.
3. Learning is based on repetition.
4. Teachers disseminate information to learners; learners are recipients of knowledge
5. Teacher's role is directive, rooted in authority.
6. Assessment is through testing, correct answers.
7. Knowledge is seen as inert.
8. Learners work primarily alone.

Constructivist classroom-

1. Curriculum emphasizes big concepts, beginning with the whole and expanding to include the parts.
2. Pursuit of learner questions and interest is valued.
3. Learning is interactive, building on what the learner already knows.
4. Teachers have a dialogue with learners, helping learners construct their own knowledge.
5. Teacher's role is interactive, rooted in negotiation.
6. Assessment includes learner works, observations, and points of view, as well as tests. Process is as important as product.
7. Knowledge is seen as a dynamic, ever changing with our experiences.
8. Learners work primarily groups.

Characteristics of a Constructivist Approach

1. Learners construct their own knowledge beginning with what they already know, exploring what needs to be known next and determining the quality and effectiveness of their pursuit through authentic assessment and application.
2. All learning begins in doubt about the validity of an idea. The goal of doubt is the restoration of belief.
3. Learning takes place in the personal zone of cognitive development between what is already known, what is not known and what is desired to be known.
4. Learning is achieved best through a socially interactive process.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

5. Learning is best achieved when the undertaking is consistent with the stages of human development.

6. Learning is an experience based process of inquiring, discovering, exploring, doing and undergoing.

7. The process of coming to know is neither random nor eclectic, it has structure (Bruner, Bloom).

8. Learning proceeds in spiralling fashion including laddering, scaffolding, weaving and dialogism.

9. Cognitive development occurs in a socio-cultural context – the social milieu of individual achievement and the interaction between the learner and adults as well as his/her peers in culturally valued activities.

10. The interactive process in coming to know needs to be guided by structured cognitive and affective taxonomies.

Characteristic Features of Constructivist Classroom Management

Constructivism has enjoyed an element of educational popularity in recent years. In contemporary educational contexts, constructivism is the term used to describe student-centered, student-controlled, process-driven, loosely structured, and highly interactive instructional practices (Rowe 2006: 1; Johnson 2009: 92; Ala-Mutka 2009: 5).

Constructivism defines learning as a process of active knowledge construction and not as passive knowledge absorption (Stanley2009: 100). In line with this, the goal-oriented rational model of management and organisation and the cause and effect understanding of management which is imbued with the values of the mechanistic worldview, have been questioned over time (Black 1999: 37).

For example, patriarchal institutions such as political empires, the institutional church, the nation state and the modern corporation appear to be profoundly affected by what has happened in the development of human process.

In the instructionist school of thought, knowledge can achieve absolute and final certainty; the world is a dualistic world in which the mind is superior to the body; human beings are superior to nature; rational is superior to the irrational; male is superior to the female; and objectivity is superior to subjectivity (Black 1999: 38).

In a mechanistic worldview, leadership is equated with management and represents a symbol of authority, order and control, the powerful means of improving the performance of anything that the energetic manager touches.(Rees as cited by Black1999: 29).

The holistic worldview, in contrast, operates in a reverse direction. Leadership and management are situational variables. With reference to its characteristic features, and the view of knowledge, constructivist classroom management appears to be compatible with the beliefs and assumptions of the holistic worldview.

Constructivist classroom management can be characterised as fitting through the lens of evolving paradigm. Thus, constructivist classroom management has holistic and artistic features.

Emerging Trends and Challenges on Constructivist Classroom Management

The instructionist classroom is characterized by the teacher acting as the transmitter of knowledge, but in classrooms based on social constructivism, the teacher acts as a collaborator in the production of knowledge within the classroom. The idea is that when teachers facilitate learners to construct knowledge through social interaction, classroom interaction will increase through more

Page127

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal) website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749) Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

reflective discussion (Brophy and Alleman 1998: 56; Rowe 2006: 2; Martin 2009: 29).Especially in a social studies classroom, teachers and learners collaborate to develop rules, often formalizing them into a classroom constitution.

According to Brophy and Alleman's (1998:56) research discipline originates mostly from the individual, as teachers and learners share leadership roles. In raising the question of whether teachers can use established principles of classroom management, answer is a qualified yes, if implemented appropriately.

Teachers must focus on instructional goals rather than functioning primarily as disciplinarians (interesting to note is that most authors that deal with classroom management link it to *discipline and control* issues and do not see it in a broader perspective).

In a constructivist classroom, discipline is especially linked to moral and intellectual goals (DeVries 2002: 5). In order to promote autonomy and prevent an overbalance of heteronomy, constructivist teachers consciously monitor their interactions with children (DeVries2002: 5). The teachers need to engage in thoughtful analysis, to determine how to apply basic principles of good classroom management to engaging instructional innovations.

Their research makes clear that to ensure that the principles support the goals of constructivist or other non-instructionist approaches to teaching, teacher can-
(1) begin by identifying what learners are expected to do in order to engage optimally in learning activities, and
(2) work backward from this description of desirable learner roles to determine what forms of managerial instruction or assistance are needed (Brophy and Alleman 1998: 57) Dede (1996) argues that educational technologists have often stated that an effective way to integrate technology into the teaching and learning process is to follow a constructivist model.

Although teachers may have technical skills, they may not understand how constructivism translates into meaningful classroom practice (Dede 1996). When one integrates learner experiences with technology into the curriculum, the role of the teacher changes. The teacher no longer has to be in charge every minute, but can give some of the control over to the learners and the technology. If approached in a constructivist manner, the teacher's job becomes one of a facilitator or architect.

For this type of teaching to be successful, teachers need to give learners time to explore the material and construct meaning from the experience. Also, teachers sometimes, are concerned about such a shift; they worry about losing control, not fulfilling their role or being seen as less effective by parents, principals or supervisors. In a constructivist classroom, learners are more actively involved than in an instructionist classroom. They share ideas, ask questions, discuss concepts, and revise their ideas and misconceptions (Jonassen et al. 1996). Such activity involves collaboration, with occasional competition, among learners.

Collaborative environments can encourage the knowledge construction needed for more lasting learning.

The Role of the Teacher in Constructivist Classroom Management

The teacher is the key figure in promoting an environment within the classroom that is conducive to teaching and learning. Effective teaching and learning depends largely on the establishment of a sound relationship between the teachers and the learners in the classroom.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

A significant body of research suggests that academic achievement and behaviour are strongly influenced by the quality of teacher-learner relationships. Thus, positive teacher-learner relationships are fundamental in effecting the roles of the teacher in a constructivist classroom.

Classroom rules and procedures, alone, are not the only social tools in regulating and managing the learner behaviour. The roles of the teacher, as a classroom manager, seem to be in a state of transition – shifting from traditional/modern to constructivist/postmodern framework of thought.

However, the implementation of constructivist curriculum holds insightful implications for classroom management. It involves a whole new look at what teachers are supposed to do. This requires that teachers move from a traditional teacher centred classroom to a learner-centred classroom and that, this raises issues of classroom control and discipline and a change in the traditional teacher-leader role to shared leadership and new social interaction in the classroom, placing high demands on both teachers and learners on the creation and redefinition of classroom roles.

In the constructivist classroom, the teacher's role is to prompt and facilitate discussion. Thus, the teacher's main focus should be on guiding students by asking questions that will lead them to develop their own conclusions on the subject. Parker J. Palmer (1997) suggests that good teachers join self, subject, and students in the fabric of life because they teach from an integral and undivided self, they manifest in their own lives, and evoke in their students, a capacity for connectedness".

David Jonassen identified three major roles for facilitators to support students in constructivist learning environments:

- **Modeling**
- **Coaching**
- **Scaffolding**[3]

A brief description of the Jonassen major roles are:

Modeling – Jonassen describes Modeling as the most commonly used instructional strategy in CLEs. Two types of modeling exist: behavioural modeling of the overt performance and cognitive modeling of the covert cognitive processes. Behavioural modeling in Constructivist Learning Environments demonstrates how to perform the activities identified in the activity structure. Cognitive modeling articulates the reasoning (reflection-in-action) that learners should use while engaged in the activities.

Coaching – For Jonassen the role of coach is complex and inexact. She acknowledges that a good coach motivates learners, analyzes their performance, provides feedback and advice on the performance and how to learn about how to perform, and provokes reflection and articulation of what was learned. Moreover, she posits that coaching may be solicited by the learner. Students seeking help might press a "How am I Doing?" button. Or coaching may be unsolicited, when the coach observes the performance and provides encouragement, diagnosis, directions, and feedback. Coaching naturally and necessarily involves responses that are situated in the learner's task performance (Laffey, Tupper, Musser, & Wedman, 1997).

Scaffolding - Scaffolding is a more systemic approach to supporting the learner, focusing on the task, the environment, the teacher, and the learner. Scaffolding provides temporary frameworks to support learning and student performance beyond their capacities. The concept of scaffolding represents any kind of support for cognitive activity that is provided by an adult when the child and adult are performing the task together (Wood & Middleton, 1975).

Page129

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal) website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749) Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

The constructivist teacher is described as follows:

- The facilitator that needs to have faith in his or her learners.

- The teacher facilitates a process of learning in which students are encouraged to be responsible and autonomous

- He/she should see each child as a different person that can succeed in their own unique way;

- Encouraged to ask open-ended, probing questions that encourages the learner to share their knowledge and experiences with other members of the class schema;

- Is an encourager and moderator and helps children feel confident in whatever they can do;

- Provides a "meaningful path" for the learners by providing assistance to help learners create their own understanding;

- Provides the message that nobody is perfect, and it is alright to make mistakes;

- Needs to have open communication with each other, where they can share their problems, concerns and ideas;

- Use cognitive terminology such as classify, analyse, predict and create when framing tasks;

- Encourage learners to engage in dialogue both with the teacher and with one another;

- Seek elaboration of learners initial responses;

- Provide time for learners to construct relationships and create metaphors; and

- Nurture learners' curiosity through frequent use of the learning cycle model.

Conclusion

Constructivism has enjoyed an element of educational popularity in recent years and has a significant number of implications for classroom management, more specifically to the roles of the teacher in learner-centered classroom. Among others, it calls for a dramatic shift in classroom focus, away from the narrative model of teaching toward one that is much more complex and interactive. Also, the implementation process demands the management function of the teachers, principals, district officials and policy formulators coupled with their leadership style, consistent with the emergent paradigm. On the basis that many of the modernist assumptions on which instructionist classroom management is based, no longer hold in our world today (there is paradigmatic divide), this requires that classroom management in a learner-centred setting, be approached from a situational approach perspective.

References

Best J.W. & Kahn, J.V.(2003) Research in educational (9th ed.), new Delhi prentice hall of India Pvt. Ltd.

Barnett, R., Parry, G., & Coate, K. (2001). Conceptualising curriculum change. *Teaching in Higher Education, 6*(4), 435-449.

Bruner, J. (1996). *The process of education*. Cambridge, MA: Harvard University Press. Jacobs,

Buch , M.B.(Ed.) forth survey of researches in education new Delhi :NCERT

Bhatawadekar, S.(2008) retrieved from http://www.citehr.com/25619-quality-circles.html

Konnur P.V., Joshi A.N.(2009) retrieved from http://journal-archieves15.webs.com/271-277.pdf

Bhattacharya, S.K.(2006) Educational Technology. Chandigarh: Abhishek Publications

Devi , N.S. (2005) .Assessment of attitude towards teaching , Edu-tracks vol. 4.no.12, India : Neelkamal publications

National Curriculum Framework for Teacher Education (2009) New Delhi: National Council for Teacher Education

Verma, S.(2012); Curriculum planning and Development ;New Delhi: Astha publishers

Page130

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal) website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749) Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

VIEWING LEARNERS FROM DIFFERENT DIMENSIONS

Ms.Bhumika Mangrola

Lecturer,

Waymade College of Education,

Vallabh Vidyanagar 388 120

Contact No: 9879959977

bhumikamangrola3@gmail.com

Abstract

Each individual is different in various aspects of their life which includes physical, social, Intellectual and emotional as well. They have different needs as differences present among them, but it is not paid due attention in our education system. They all are considered as same pearls of a single necklace. It is very important for teacher to know the individual difference present in students. If it is not paid attention, child gets deviates from the regular teaching learning process. Teacher should understand the intelligence of each child and accordingly teacher has to use various methods, techniques and approaches in his/her teaching process. There are various ways of serving different learners with the use of group learning methods, task based methods, activities based method etc. These all together encompasses elements of Cooperative learning, a way to reach to leaner and help them in constructivism of knowledge. In the present study, the researcher has presented theoretical perspective of Cooperative learning and its benefits in the classroom learning.

Key Words: Individual Difference, Cooperative Learning, Constructivist, Learning Methods

Backdrop

In present education system learners are viewed as possessing single learning style or intelligence but in reality they are not exposed to other styles of learning which makes them recognised in other dimensions too. Exposing learner to single learning style restricts the development of students and also makes them stick to the use of single intelligence. To explore their skills and to make them globally competent, it is important to expand their potentialities and their intelligence in all dimensions. Learners do not possess only the quotient of intellect but they also have intelligence to deal with emotional imbalance or with social interactions effectively. If learners are provided with such opportunities where they develop other intelligence also then it would not be difficult for any learner to make their recognition in the society.

Initial concept of intelligence presented that learner possess a single intelligence which deals with the cognitive domain but now in the modern concept learners are not viewed only for their cognitive ability but also for their intelligence in various dimensions like interpersonal relationship, ability to recognise natural entities, creative ability and many more. With this concept, one of the psychologists, Dr.Haward Gardner has given the theory of Multiple Intelligence where each learner is viewed for his innate intelligence and then enhancing the level of possessed intelligence through environmental exposer in teaching learning. This theory has its practical applicability in school where with the acceptance of this concept learners are developed as a whole individual which leads to the attainment of the major goal of our education system i.e. Overall Development of Learners. Many school adopted Continuous and Comprehensive Evaluation to reach to the goal but without making them experienced for such environment how can we evaluate their performance. Every child is a star with some or the many hidden

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

abilities; the role of education is to bring it out so this is one way of knowing learners with different perspectives.

Now a day's people are talking about various pedagogical approaches and techniques to cater students need, in which participatory approach and constructivist approach has taken core area of application. Cooperative learning is also a way to reach out to the constructivism. There are basically three learning situations which can be designed within a classroom- Individualistic learning, Competitive learning and Cooperative learning. In Indian education the individualistic and competitive learning situations are predominantly focused upon. In these situations students are made to learn individually and then subjected to competition within the four walls of the classroom. In such a scenario somewhere we are focusing only on academic success and not overall excellence. As of now when the focus is shifting towards child centered education and constructivism, educationists have started taking note of cooperative learning and its inclusion in the transactional process.

Theoretical Perspective and Classroom Implications

Cooperative learning is a systematic pedagogical strategy in which small teams each with students of different levels of ability, use a variety of learning activities to improve their understanding of a subject. Each member of the team is responsible not only for learning what is taught but also for helping the team learn, thus creating an atmosphere of achievement, Students work through the assignment until all group members successfully understand and complete it. In cooperative learning, it is believed that learning best occursthrough reflecting inquiry with others who help the learner negotiate his or her own degree of potential under the best condition. In cooperative learning setting, students are encouraged to discuss challenging tasks and take part in problem solving activities in well-designed heterogeneous teams with the intention of subjecting them to diverse ideas and thus developing in them habits of minds such as objectivity and critical thinking. Cooperative learning makes students not only learn through experience but to feel and internalize different solution and strategies for facing and tackling problem in well-designed meaningful context set by the teacher who plays the role of an integrative rather than dominating teacher. Cooperative setting helps students feel more value in comparison with the situation in traditional system of teaching. They have the liberty to form their teams, assign one another roles, assess their partner, and even in some methods of cooperative learning negotiate the course objectives with teachers. Students are provided with different challenging activities, which encourage them to learn different solution to the problem at hand via critical thinking in a meaningful and reciprocal interaction. They also have opportunities to feel and enjoy the results of their shared learning in class wide discussion. In the ideal classroom all the three learning patterns i.e. Competitive, Individualistic and Cooperative learning should be appropriately used. All students should learn how to work cooperatively with others, compete for fun and enjoyment and work on their own. No aspects of teaching are more important than the appropriate use of different learning patterns. But, unfortunately, most students perceived school as predominantly competitive enterprises as for the past half century, competitive and individualistic learning patterns have dominated our education system. Competitive and individualistic learning situations instil in learners such value systems which form a part of the hidden curriculum beneath the surface of school life i.e. when students are exposed to such learning, the unknowingly, indirectly, involuntary acquired such values which are not a part of real school curriculum to be followed for the all-round development of the students.

Whenever students engaged in competitive efforts for the example, they learn the value of Commitment to getting more than others. In such type of learning Success depends on beating, defeating and getting more than other people, what is important is winning, not mastery or excellence.

Page132

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Students were thought that others are a threat to one's success. The values which students inherently learn when they are exposed to Individualistic experiences are Commitment to one's own self-interest. For such type of students success depends on one's own efforts. The pleasure of succeeding is personal and relevant to only oneself.

In contrast to these, the values inherently taught by cooperative efforts are commitment to own and other's success and well-being as well as to the common good. Success depends on joint efforts to achieve mutual goals. Facilitating, promoting and encouraging the success of others is a natural way of life. They thought the potential of other as a contributor to one's success.

Cooperative learning has all the essential ingredients that can bring about a qualitative change in education because it is based on new paradigm of teaching which considered that knowledge is constructed, discovered, transformed and extended by students. Education is a personal transaction among students and between teachers and students as they work together and that teacher efforts are aimed at developing students' competencies and talents. It assumes teaching to be a complex application of theory and research. Hence, it equally takes into consideration the cognitive as well as the affective domains of learning. It lays emphasis on the mastery of knowledge, comprehension, application analysis synthesis and evaluation of materials under cognitive domain as well as takes into account all the five major categories of affective domain which includes the manner in which we deal with things emotionally, such as feelings, values, appreciation, enthusiasm, motivation and attitudes.

The importance of cooperative learning goes much beyond maximizing outcomes such as achievement, positive attitudes towards subject areas, and the ability to think critically, although these are worthwhile outcomes. The elements of cooperative learning viz. teamwork through positive interdependence, communication, effective coordination, and division of labour by exhibiting individual accountability are keystone which characterizes most real life setting. The same is true about our school as school is considered to be a miniature society. It is time for schools to reflect the reality of adult life. Incorporating cooperative learning experiences in the classroom will both reinforce the skills necessary to cope with future courses and provide students with the qualifications that will make them employable.
As the Chinese proverb suggests:

"When I here I forget, when I see I remember, When I do I learn"

Adults and children learn by "doing" and it makes sense that instructor need to offer opportunities for students to participate in cooperative learning tasks.

Conclusion

One way in which educators could expand the amount of time learners are exposed to cooperative learning would be to implement it in the each class for a full year or any other learning area to allow time for the positive effects to become more noticeable. Another and likely more effective approach would be for the Education Department to implement cooperative learning programmes in schools by inviting schools to participate in pilot projects and by organizing workshops for teachers to conduct cooperative learning in their schools. Furthermore, in large classes it is often better to group the learners due to financial constraints, and lack of learning material. The key is to change the educational culture as a whole so that cooperative learning becomes the norm for all learners in all learning areas. The result would undoubtedly have a ripple effect beyond the walls of the school itself for example adolescents usually spend a lot of their free time with friends. Usually they learn to get along. In learning, team building can occur. This is an important social aspect needed to get tasks accomplished. Each day in business and industry, people are required to work together to get the job done. All too often the task is

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

too large for a single individual to accomplish. Therefore, cooperative team building can have positive effects in school, but also build cooperative skills that will assist the learner later in life.

References

Gardner, H.(1993). Multiple intelligences the theory in practice. New York: Basic Books, Herper Collins Publishers.

Janes, L.M., Koutsopanagos, C.L., Mason, D.S., and Villaranda, I.(2000) Improving student motivation through the use of engaged learning, cooperative learning and   multiple intelligences.

http://psychology.about.com/od/gindex/g/general-intelligence.htm

http://psychology.about.com/od/cognitivepsychology/p/intelligence.htm

CONSTRUCTIVIST PEDAGOGY APPROACH OF TEACHING NUMISMATICS

Miss. Afsana Harun Maneri

M.A, M.Ed.

Department of Education,

Shivaji University, Kolhapur

afsana80@gmail.com

Mo.No-8626069559

Abstract

Numismatics is the important part of history subject. Numismatics is the study of coins and money, of coins and coin-like objects. Coins help us to build up the history of the country in many ways. They give us the names of the kings who ruled at various times in different parts of the country. In many cases, the coins are the only information we have regarding the existence of certain kings. Without those coins, the very existence of those kings would have remained unknown.

Constructivism is an epistemology, or a theory, used to explain how people know what they know. Fundamentally, constructivism says that people construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences. Constructivism is a theory that asserts that learning is an activity that is individual to the learner. This theory hypothesizes that individuals will try to make sense of all information that they perceive, and that each individual will, therefore, "construct" their own meaning from that information. The paper will dealt with the following objectives such as the students will be able to: 1 Observe old coins and extract information like dates, names of rulers, the names of the countries issuing them etc.2. Realize the importance of coins as sources of History.3.To encourage the students to explore various knowledge of understanding coins.

Keywords: constructivist pedagogy, Numismatics

Numismatics is the important part of history subject. Numismatics is the study of coins and money, of coins and coin-like objects. Numismatics is an ancillary science to history that seeks to identify coins as to place, date, and government of issue so that the inscriptions, images, and other features of the coins can be used as evidence for political, economic, social, and cultural history.

Numismatics is the study of the collection of currency. This includes coins, tokens, paper money, and similar objects. But it is widely perceived as the study of coin collection. Coins help us to build up the history of the country in many ways. They give us the names of the kings who ruled at various times in different parts of the country. In many cases, the coins are the only information we have regarding the existence of certain kings. Without those coins, the very existence of those kings would have remained unknown.

Constructivism is an epistemology, or a theory, used to explain how people know what they know. Fundamentally, constructivism says that people construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences. Constructivism is a theory that asserts that learning is an activity that is individual to the learner. This theory hypothesizes that individuals will try to make sense of all information that they perceive, and that each individual will, therefore, "construct" their own meaning from that information. The objectives of this paper are

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

1. To observe old coins and extract information like dates, names of rulers, mints the names of the countries issuing them etc.
2. To realize the importance of coins as sources of History.
3. To encourage the students to explore various knowledge of understanding coins.
4. Describe the history of Indian currency and coins.

We know the meaning of Constructivist

The psychological roots of constructivism began with the developmental work of Jean Piaget (1896–1980), who developed a theory (the theory of genetic epistemology) that analogized the development of the mind to evolutionary biological development and highlighted the adaptive function of cognition.

Constructivist teachers encourage students to constantly assess how the activity is helping them gain understanding. By questioning themselves and their strategies, students in the constructivist classroom ideally become "expert learners." In comparison to behaviorism, the learner is not a blank slate, but instead brings past experiences and cultural factors to a situation and new information is constructed from prior next knowledge. The theory of constructivism is an approach to learning suggesting that children must construct their own understandings of the world in which they live.

An approach to learning in which learners are provided the opportunity to construct their own sense of what is being learned by building internal connection or relationship among the   ideas and facts being taught.

- Borich and Tombari (1997)

Jonassen (1991) talks about constructivism as follows: Constructivism, founded on Kantian beliefs, claims that reality is constructed by the knower based upon mental activity. Humans are perceivers and interpreters who construct their own reality through engaging in those mental activities...thinking is grounded in perception of physical and social experiences, which can only be comprehended by the mind. What the mind produces are mental models that explain to the knower what he or she has perceived.... We all conceive of the external reality somewhat differently, based on our unique set of experiences with the world and our beliefs about them. (p.10)

Students are not empty vessels that we can pore with our knowledge. Knowledge is situated inside the sole that they themselves have created actively (Bhogayata C., 2003). Teaching is not an easy task. Knowledge has to be generated by the students. Teacher can only facilitate students in doing so. The role of a teacher is as a facilitator. Knowledge should construct in student's mind. Construction of knowledge is affected by various factors. Constructivist teaching makes student's learning more meaningful and long lasting because it includes hands on experience on topic, collaborative learning, raising questions, and find their solutions, peer learning, acquiring new ways and methodologies, make student capable to develop their own pattern of learning, healthy discussions, compare and contrast methods, case study methods.etc.

Salient features of constructivist pedagogy

- Knowledge construction
- Assimilation of ideas
- Ill-structured and invention of knowledge
- Discovery and invention of knowledge
- Subjective evaluation

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

- Learning – centered education
- Collaboration learning
- Critical and reflective thinking
- Development of creativity.

Constructivist activities

- Experimentation: students individually perform an experiment and then come together as a class to discuss the results.
- Research projects: students research a topic and can present their findings to the class.
- Field trips. This allows students to put the concepts and ideas discussed in class in a real-world context. Field trips would often be followed by class discussions.
- Films. These provide visual context and thus bring another sense into the learning experience.
- Class discussions. This technique is used in all of the methods described above. It is one of the most important distinctions of constructivist teaching methods.[2]

Numismatics

Similarly, Numismatics (Latin: numisma, nomisma, "coin"; from the Greek) is the study or collection of currency, including coins, tokens, paper money, and related objects. While numismatists are often characterized as students or collectors of coins, the discipline also includes the broader study of money and other payment media used to resolve debts and the exchange of good.

A study of the Indian coins enlightens us a great deal regarding the history of ancient India. The Numismatic Society of India is doing a lot of useful work in this connection. We have at present a large number of coins found from various parts of India and dealing with the different aspects of ancient Indian history. Coins are of various metals: gold, silver and copper.

Importance of Coins:

Coins help us to build up the history of the country in many ways. They give us the names of the kings who ruled at various times in different parts of the country. In many cases, the coins are the only information we have regarding the existence of certain kings. Without those coins, the very existence of those kings would have remained unknown.

Many a time, the information from the coins can be used to corroborate the evidence from other sources such as the Puranas, etc. The coins also help us to fix up the chronology. Coins mention the year in which they are issued.

Everyone knows that money is defined as anything that is generally accepted as payment for goods and services and repayment of debts. The main uses of money for us are as a medium of exchange, a unit of account, and a store of value.

It would be interesting for us to know that the first documented coinage seems to have started with '**Punch Marked**' coins issued between the 7th-6th Century BC and 1st Century AD. You can classify the coin age into the following periods:

a. Ancient

b. Medival

c. Mughal

d. Late pre-colonial

e. British India

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

f. Republic India

g. Others

There are some ancient coins below, which were in circulation in our provincial states. They were issued by different states under various kings:

Now see the modern day coins here, which of course have undergone changes over a period of time:

Development of Numismatics awareness in School Students by the constructivism (5E)

- Engage
- Explore
- Explain
- Elaborate
- Evaluate.

- **(Vygotsky, Piaget And Montessori)**

Best practices

Geer,U.C. and David W. Rudge, Modern theories of learning claim the construction of knowledge occurs as students build understanding in light of experiences occurring in the world. Experience can occur within the context of various pedagogic modes within a classroom setting; moreover, the development of deep conceptual understanding of content and the processes of science – as informed by constructivist models of learning – stress the active participation of students in the process of constructing knowledge. This can

Page138

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal) website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749) Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

occur when students are engaged in learning tasks which tacitly or explicitly make them aware of this construction with deference to prior knowledge structures.

Constance K. & Barbara A. L. (1989), Children create new mathematical knowledge by reflecting on their physical and mental actions. Ideas are constructed or made meaningful when children integrate them into their existing structures of knowledge.

Jayeeta, B. (2015,) Constructivism is an epistemology, or a theory, used to explain how people know what they know. Fundamentally, constructivism says that people construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences. Constructivism is a theory that asserts that learning is an activity that is individual to the learner.

Senapaty, H.K, The student-centred learning has emerged based on cognitive learning research and the confluence of several theories that have developed our understanding of the nature and context of learning. In student-centred environment the learner interacts with other students, the teacher, information resources, and technology. The learner engages in authentic tasks in authentic contexts using authentic tools and is assessed through authentic performance. The environment provides the learner with coaching and scaffolding in developing knowledge and skills.

James. M. A, and et al, Teachers need to have a sound understanding of what constructivism means to evaluate its promise and to use it knowledgeably and effectively. This paper explicates some of the theoretical background of constructivism and then presents a detailed example in which a traditional classroom lesson and a constructivist version of the same lesson are described and analyzed.

Svein,S(2007), Constructivism is a term that should be used with caution. It is widely used in many disciplines. This entry is about constructivism in education. But even in the more limited area of education, it is obvious that the term constructivism is used with very different meanings. It is used to describe learning and teaching as well as curricula and assessment. It is also used in a more philosophical or epistemological meaning. This entry will try to describe some of these different meanings. It will take an historical perspective, since this may shed light on the development of the use of the term constructivism, and some of the origins for the current,
Somewhat confusing situation.

Kosambi,D.D(1981), wrote the fascinatingly wide range which the historical studies and generalizations of D. D. Kosambi cover is known to all his readers and it is indeed a measure of his great versatility that in no other area was the relationship between his 'basic' discipline and history as direct as in the study of coins. A Professor of Mathematics all through his teaching career and an acknowledged original contributor to statistical and genetically studies," Kosambi did not, however, let statistics alone dominate his numismatic research; his papers on the subject show him to be   equipped with not only the basic rigours of physically handling coins but also his capacity to use, in his attempts to buttress his statistical findings, an impressive mass of literary data, and his familiarity with the latest research on coins, Indian and non-Indian.

Students Activities
- Collect different currency /coins and banknotes.
- Collect information related coins or related objects.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

- Rare Coin photographs collection.
- Visit to different coin collator and collect the information which is they have the coins.
- Indian Institute of Research in Numismatic Studies (IIRNS) visit to this website for about coin.
- Find out the information about that coin which gets in our surroundings (old coin).

Suggestions are given for Students, Teachers and Parents, these are as follows:

1) A focus on developing the students as 'historical detectives' by balancing teacher-directed and independent learning; this allowed pupils to get to grips with genuine historical questions related numismatics and issues, asking questions, researching the evidence, drawing conclusions and communicating the findings in a variety of media, including ICT.

2) Good use of visits to historical sites and of coin collectors by ensuring that students understood the context and knew what sorts of questions to pursue to get the most from the evidence.

3) A 'sense of adventure' which motivated the students, engaged them in their learning, opened their minds to what had happened in the past and, by comparing it to today, helped them to understand the relevance of what they were studying.

4) Opportunities for informed discussion and debate, enabling students to articulate and refine their views related numismatics.

5) The research skills developed through the study are transferable skills which are likely to be vocationally useful whether or not the student continues with the study of numismatics.

Conclusion

Constructivism is an epistemology, or a theory, used to explain how people know what they know. Fundamentally, constructivism says that people construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences. Constructivism is a theory that asserts that learning is an activity that is individual to the learner. This theory hypothesizes that individuals will try to make sense of all information that they perceive, and that each individual will, therefore, "construct" their own meaning from that information. Engage, explore, explain, elaborate, evaluate by develop the interest in the student for numismatics.

References

Aggiornamento, U. (2002). *Teaching local history in schools*.
    http://www.clio92.it/tesi/en/local_history.htm.(Accessed 24 February
    2003).

Best, J.W. and Kahn, J.V. (1996).*Research in Education* (IV Ed.) New Delhi: Prentice Hall of India Pvt.Ltd.

Best, J.W. and Kahn, J.V.(1996).*Research in Education* (VII Ed.) New Delhi: Prentice Hall of India Pvt.Ltd.

Carmen, A.B and Maria C. C.(2015) *Survey of Numismatic research 2008-2013;* Taormina.

Jayeeta,B. (2015), *Constructivist Approach to Learning–An Effective Approach of Teaching   Learning;* Vol-I, VI, , Pg.
    65-74 , Scholar Publications, Karimganj, Assam, India http://www.irjims.com

James. M. A, and et al, *Constructivism in Theory and Practice:* Toward A Better Understanding

Kosambi, D. D (1981).*Indian Numismatics:* Indian Council for Historical Research.

Michel ,C.(2009) *Preserving our heritage: Improving our environment*, Volume I, (http://europa.eu). Publications
    Office of the European Union, 2009.

Svein,S.(2007) *Constructivism and learning;* University of Oslo, Norway.

Wineburg, S.S. (1991a). *Historical problem solving*: A study of the cognitive processes used in the evaluation of
    documentary and pictorial evidence. Journal of Educational Psychology, 83 (1), 73-87.

Page140

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

STUDY OF EFFECTIVENESS OF ALL IN ONE SAMRUDDHA PUSTAK BASED ON CONSTRUCTIVISM FOR STUDENTS SUFFERING FROM HEAVY SCHOOL BAG

Mrs. Sarika Vikas Patil

(B.Sc.,B.Ed)

Asst. teacher,

BharatiVidyapeeth English Medium School,

Kadamwadi, Kolhapur.

Email ID :-sarikapatil952@gmail.com

Cell. 9881893693

Abstract

In this study, the use of "All in one SamruddhaPustak" based on constructivism instead of all the textbooks of all subjects is dealt with.

School textbook of 3rd Std including thirteen subjects of students interest which is designed according to month wise and not subject wise. "All in One Samruddha Pustak" helps to develop social constructivism among students and siace the book is designed in such a way thus number of pages of textbook are reduced but the content of the varios subjects of the 3rd standard is not compromised. After studying year planning of 3rd standard, it is divided into three equal parts as part I- July, August, September, Part – II – October, November, December, Part- III- January, February, March in June revision of last year syllabus and in April Annual Exam.

Three sets of textbooks were designed as part I, part II, Part III. So students have to carry only one textbook in that particular month which helps to reduces weight of heavy school bags.

During this research ill effects of heavy school bags were studied and give recommendations to solve the problem of heavy school bags.

Key Words –

1) "ALL IN ONE SAMRUDDHA PUSTAK"
2) HEAVY SCHOOL BAG

Introduction

Numerous school textbooks have been studied and it was found that academic textbooks were designed according to subject for example for English subject there is one textbook is use for whole academic year i.e. from June to April for particular standard which is based on that standard's syllabus. Students of that particular class have to carry different subject's textbook for whole year which overload them.

Research suggests that according to the national educational policies weight of school bag should be less than 10% of total weight of student. During this research it is found that reduction in weight of school bag can be made possible if textbook is set according to months which is based on constructivism.

Addition of innovative topics in the "All in One Samruddha Pustak" enables the students to correlate the subjects and learn the subjects from the interdisciplinary point of view and enable holistic learning. Experience which students received from reading of textbook, they reflecting on those

Page141

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

experiences. So to develop students' own understanding and knowledge of the world it is important to prepare a textbook based on constructivism wheren students after using this textbook show holistic academic growth in their studies. Students attendance increases due to this joyful teaching learning process.

❖ **Needs of Present Research**
1. To give joyful learning to students of 3rd standard by giving textbook based on constructivism.
2. Research explores problems of heavy school bag which include both physical and mental stress.
3. To develop holistic academic growth by giving single book for all subject same for three months.
4. To give stress less teaching aid which increase students interest and enable holistic learning.
5. To give activity based textbook which is useful for skill development of student and also useful for proper evaluation of student.

❖ **Importance of this Research**
1. Month wise textbook is a innovate initiative which is brought into present education system by giving "All in One Samruddha Pustak".
2. This textbook is learner centered textbook which helps to reduce overload of student by reducing pages of textbook which they carry for whole year.
3. New textbook after three months increases freshness, emphasixes curiosity and interest within student.
4. Inclusion of stories, poems improves reading of students.
5. This textbook is prepare month wise so it is useful for academic year planning of syllabus.
6. All in One Samruddha Pustak is useful to understand correlation between environment and studies.
7. This Innovation textbook helps teacher to give innovative teaching.
8. Work experience, drawing pages, project pages which included in this textbook helps to give skill based teaching.

❖ **Definitions of the terms in title** -
1. Effectiveness – Doing the right thing.
2. Suffering – Experience something bad.
3. Heavy – of great weight.

❖ **Objectives** –
1. To develop constructivism between students.
2. To reduce weight of heavy school bags.
3. To give evolution aid to teacher.
4. To give joyful learning experience to students.

❖ **Limitations** –
1. This research is limited only to Marathi medium students.
2. This research is limited only to third std. Students.
3. This research is limited to primary section

Page142

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

❖ **Methodology** –
1. For this research survey and experimental method was used.
2. For sample selection Purposive sampling method was used.
3. There are Marathi, English Medium schools in Kadamwadi area. Among that SamataVidyamandir, Bhosalewadi is selected for research from this school 3rdstd is selected for research.

❖ **Sample selection** –

Out of total schools in Kolhapur. Samata Vidyamandir, Kadamwadi, Kolhapur is selected from that school 3rd standard is selected for research total strength of class is 22 out of that girls are 12 and boys are 10

❖ Duration of study – 1 yr.
❖ Inclusive criteria – Both girls and boys
❖ Age Group – 8 to 10
❖ Tools –
1. All in one SamruddhaPustak
2. Year Planning of third standard

Procedure of Research –

Swami Vivekanands quotes. To improve teaching – learning process. It is important to unite students sole by teachers.

While working as a teacher I observed lot of problems of students. Students suffer from mental and physical stress in their educational life.

After discussion with pediatrician Dr. Suhas Kulkarni I came to know that students from primary section are suffering from lot of physical problems which are related with heavy school bags. Because of physical and mental stress they are unable to enjoy educational life. Students have lot of mental stress that they are always thinking about different subjects and they try to differentiate each subject. Between this research, I found that because of different subjects students feel that they have lot of burden of education. They are unable to correlate subjects they are studding in their daily life.

So as to obtain good result from education, I feel, there must be a correlation with education which students obtain from school and their surroundings. So to develop constructivism within student I prepare "All in Samruddha Pustak" by using year planning of third standard. I select three months syllabus of four main subjects English, Marathi, EVS, Maths. During research I observed that students are interested in subjects which are applicable and useful to decrease their mental stress like drawing, word experiences, poems, story, I always thought that a productive constructivist textbook consists of learner centeredactive instruction. In a classroom, the teacher provides innovative textbook to students which gives experiences that allow them to hypothesixe, predict, manipulate, objects, pose questions, research, investigate, imagine and invent. Educational curricula, teaching aids, textbooks and methods are changing. In a traditional curriculum a teacher transmits information to students who passively listen and acquire tacts. In a transactional curriculum students are actively involved in their learning to reach new understandings, for that I set constructivist textbook which is student centered textbook. To the four compulsory subjects I add students interest subject like Marathi stories, Poems, in Marathi, Hindi, General Knowledge, work Experience, Handwriting, My country, Dictionary. As All in one

Page143

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

SamruddhaPustak based on constructivism it engages students trust and invites them to participate in a constructivist process that allows them to be involved in decisions about their learning.

As total 13 subjects are included in one textbook it is easy to students to correlate each subject with the other subject and there is formation of constructivism and result which observed in students is they become independent to construct knowledge.

For the constructivism textbook is designed according to experieces which students received from surrounding, they transfer their observation into knowledge for ex. In month of June there is Rainy season. So in language subject there is description of surrounding, in environmental studiesthere is scientific study of rains. In Maths word problems based on seasonal fruits are given in one textbook like "All in one SamruddhaPustak" then students can use their knowledge of any subject to answer question of any subject so there is proper understanding. If students observ relation between surrounding and textbook then they will take interest in studies. They will improve their observation and will share their observation in class which they will correlate with subject then there is improvement in students educational standard.

Analysis

1. Qualitative analysis by comparing weight of school bags, mean
2. Graphical analysis

Table No. 1

Present textbook	All in One Samruddha Pustak
1. Marathi	1. Marathi
2. English	2. English
3. Environmental Studies	3. Maths
4. Maths	4. Environmental Studies
	5. Handwriting
	6. General Knowledge
	7. Marathi Poem
	8. Marathi stories
	9. Hindi songs
	10. My country
	11. Work experience
	12. Dictionary
	13. Drawing

Total subject – 4   Total Subject – 14

Total Pages – 416   Total   Pages – 170

Total Weight – 968 gram   Total Weight – 385 gram

968-385 = 565 gram.

Total reduction in weight = 565 gram

Page144

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- Department Of Education,Shivaji University,Kolhapur (Maharashtra) | ISSN 2349-638x Impact Factor 2.147 |

Table No. 2

1. Mean – In pre observation mean of weight of school bags of students.

$$\frac{\text{Sum of Weight of school bags}}{\text{Total Students}} = \frac{125.8}{22} = 5.7\text{kg}$$

2. Mean – In post observation mean of weight of school bags of students.

$$\frac{\text{Sum of Weight of school bags}}{\text{Total Students}} = \frac{47.5}{22} = 2.1\text{kg}$$

3. Difference of mean = 5.7 – 2.1 = 3.6 kg

Pre-observation and Post-observation

❖ Pre-observation
   a. In pre observation students feel studies as a burden
   b. Students unable to correlate between studies and Environment
   c. Students unable to develop own understanding
   d. Students only by heart question and answers without understanding.
   e. Students unable to create skill to use school knowledge into their daily routine life.
   f. Student never share their experiences or observations in school.

❖ Post-observation
   1. Students use stories, poem from textbook All in one SamruddhaPustak to reduce their mental stress.
   2. Students draw pictures in textbook which they observe in environment.
   3. Masks which students prepare in work experience period they use for their birthday celebration.
   4. In elocution competition students told stories from textbook.
   5. In quiz competition they use general knowledge my country subjects information.
   6. As content is interesting they take interest in reading and their reading is improve.
   7. As there is page for project work students use their skill to complete their project.
   8. Because of All in one Samruddha Pustak weight of heavy school bags reduces students experiences joyful teaching.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |
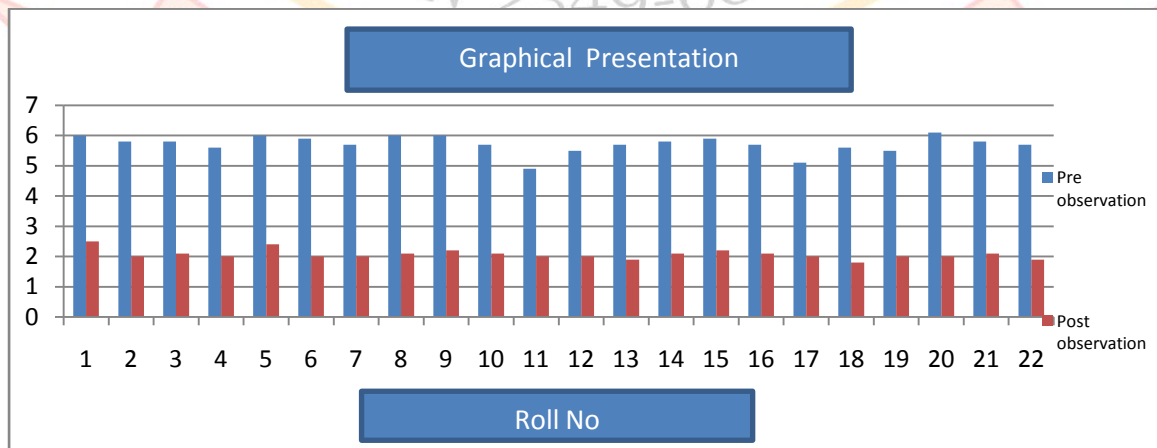
Conclusion –

       In present research pre observation and post observation of students were observed and analyzed then researcher come to conclusion that .

1. Research suggests that constructivist teaching is an effective way to teach. It encourages active and meaningful learning and promotes responsibility and autonomy.
2. Research suggests there is need of textbook like All in one SamruddhaPustak to develop educational standard.
3. By use of All in One Samruddha Pustak textbook confidence of students was in creased.
4. New textbook after three months develops freshness in studies.
5. Students are able to use their knowledge in their daily life.
6. It is possible to reduce weight of heavy school bags.

Recommendations –

1. Textbook will be set according to month not according to subject.
2. Some interesting subjects should be added in textbook to develop students interest
3. Innovation textbook should be given to teacher to develop innovative, constructive teaching.

References –

1. Wikipedia
2. Graham Nutall and social constructivist teaching
3. Wikitiom.com
4. http/www.mscert.org.in
5. gaaoDbaaolaoAcyaut¸ gaiNatI¸ manaaoivakasaP`akaSana¸ puNao.
6. mayaokrBaalacaMd`¸ P`ayaaogaSaaLoiSavaayaiva&anaP`aklp¸ manaaoivakasaP`akaSana¸ puNao
7. taMbaorajaIva¸ CaoTIsaIbaat ³palakaMsaazI maulamaM~´

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

PEDAGOGY & APPLICATION OF TEACHING ENGLISH GRAMMAR THROUGH COOPERATIVE LEARNING

Dr. P. B. Darade
Associate professor,
Acharya Jawadekar College of Education, Gargoti
Email: prabhadarade7571@gmail.com
Cell: 9422680421

Abstract:

Grammar is defined differently by different grammarians, scholars and schools of linguistics. Etymologically the word grammar is derived from Greek word Grammatical which means the art of writing. This Greek view of grammar is not accepted nowdays. Generally we use the word grammar for whole study of language. In Greek period Grammar was regarded as the branch of philosophy concerned with the art of writing, later it was regarded as set of rules in the form of textbook which tells about correct use of language. English grammar is taught at different levels of learning where the focus is on developing grammatical competence of students. Grammar and vocabulary are backbone and soul of communication. The pedagogy of teaching grammar has been discussed many times on account of How to teach? What method should be followed? Majority teachers agree that it should be taught inductively or deductively. There are critical issues and concerns to support inductive or deductive ways of teaching grammar. Mostly the issues are dealing with the stages of teaching i. e. Application of Inductive or deductive ways depends on the stage of teaching i.e. for primary stage or secondary stage or higher stage.

Key Words: Cognitive theory of language learning, Behaviorist theory of language learning, Grammatical Competence, Covert& Overt behavior, Phases of learning, Error Analysis, Conscious& unconscious learning, S- R. bond theory, Cooperative learning. Blended approach.

Introduction:

School teacher's view that grammar should be taught indirectly and inductively because they are trained to teach communication skill. School children are expected to acquire language through communication therefore grammar of English will be learnt later. Similarly, some school teachers advocate that grammar should be taught unconsciously, indirectly or covertly and not directly or consciously. These opinions determine the cognitive and behaviorist theories of language learning.Cognitivist think that let the child use the language first, do not correct the mistakes committed by the child. Mistake is not always mistakes. They advocate that frequent error correction hinders student's ability to use language. Therefore errors need to be tolerated for a particular phase of learning a language and corrected at the next phase of learning and student should use the corrected forms at the third phase of learning. On the other hand Behaviorist believes that errors must be corrected immediately because language learning is stimulus plus response and feedback. so instant correction of mistakes is necessary at the exact point of language learning. They support that learner should be made aware of errors committed by him and teacher should correct the errors and give prompt feedback to the student. Behaviorist advocates that if we do not correct the wrong structures used by the students they will cultivate wrong habit of using a language. Language learning is habit formation, if a student develop wrong language habit it will become his/her permanent behavior and it will be hard to change this habit later.

Page147

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)   website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)   Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:-	ISSN 2349-638x
Department Of Education,Shivaji University,Kolhapur (Maharashtra)	Impact Factor 2.147

Objectives:

(1)To examine the effect of cooperative learning on development of communicative competence in English Grammar.

(2) To test the overall effectiveness of cooperative learning on development of communicative competence of students in English.

Plan & Procedure:

Research Design: Randomized groups pretest, posttest design.

Randomly assigned	Pretest	Independent variable	Post test
1. Experimental group	$T_1 E$	Teaching through CLM	$T_2 E$
2. Control group	$T_1 C$	Teaching through CM	$T_2 C$

Sample Design

Arts		Science		Commerce	
Boys	Girls	Boys	Girls	Boys	Girls
10	10	10	10	10	10
20		20		20	
Control Group 30			Experimental Group 30		
Boys		Girls	Boys		Girls
18		12	14		16

The Experiment: In this study the researcher had taught English grammar using cooperative learning (mixed strategy i. e. combination of deductive & Inductive method). The students were divided into two groups of students having 30 students in each. The students were subdivided into homogeneous by gender norm & heterogeneous groups (4x5) (5x2) the experiment was continued for 30 days. Tense, Transformation of sentences, Parts of speech, Free and Guided Composition, Letter writing. Vocabulary tasks etc. had been taught using think pair share, group discussion, panel discussion, individual tasks, choral response, think pair square, Team solo, Blackboard share Roundtable, Leader share etc as Cooperative learning strategies. The pre and post test scores were calculated to compute the level of achievement in both control and Experimental group. The phases of the experiment conducted are as follow:

Sr. No.	Phase	Activity
1.	Pre treatment	Administration of pretest on group E and C: a) Achievement test constructed by the investigator b) Vocabulary test by H.C.Sinha and R.N. Gaur. c) Comprehension Test by H.C.Sinha and R.N. Gaur. d) Oral test constructed by the investigator.
2.	Treatment	a) The treatment was given for 30 days. The 9 topics from 9 units from YUVAKBHARATI a course book in English were selected. b) Experimental group was given experimental treatment i.e. teaching through cooperative learning method (CLM).

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

		c) Control Group was given control treatment i.e. teaching through conventional method (CM)
3.	**Post treatment**	Administration of post test on group E and C. $A_2 V_2 C_2 O_2$

Research Hypothesis

There is positive relationship between cooperative learning and development of vocabulary of students

Null Hypothesis

There is no significant difference between vocabulary of students in experimental group and control group

Variables

Independent Variable

Cooperative learning strategy& Conventional method

Dependent variable

Student's achievement scores

Attribute Variable

Age, gender, study habits, physical condition

Tools: In order to measure the effect of independent variable on dependent variable the investigator has used vocabulary test ($V_1 V_2$) of 150 marks. It was general standardized vocabulary test by H.C. Sinha and R.N. Gaur (1976) from Department of Education B. N. Chakavarty University, Kurukshetra. Achievement test of 80 marks had been used to measure the overall performance.

Major Findings

1. The level of significance of comprehension test at 0.01 level indicates that cooperative learning have had a positive effect on the development of reading comprehension and English Grammar.
2. Cooperative learning method had a positive impact on development of communication skills of students.
3. 66.66% students post test scores have been increased between 9.37% to 37.50% in grammar
4. The post test scores of students in note making have been increased from 25% to 87%.
5. The scores of students in summarizing have been increased from 12.5% to 75%.
6. In narration skill the scores have been increased from 12.5% to 75%.
7. In letter writing skill students have exhibited 12.5%to 75% increase.
8. In report writing skill students have increased their scores from 12.5% to 87.5%.
9. In essay writing skill students have scored good marks i.e. from 14.28% to 85.71%.

Conclusion:

There is significant difference between means of before & after treatment scores of experimental group and control group taught through CLM and CM. Therefore it was found that cooperative learning method (CLM) has had positive impact on the development of students' communicative competence in English.

References:

Agashe Lalita(2000). Learning through cooperative investigation. Pune:Pune Vidyarthigriha prakashan
Aronson. E. Blancy N. Stephen, C. Sikes J and snapp m (1978) The Jigsaw classroom: Beverly Hills C. A. Sage.

Page149

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal) website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749) Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Bhatia. K. K. (1996). New Techniques of Teaching English as a Foreign language. Jalandhar: New Academic publishing compancy.

Best. J. W. and Khan. J. v. (2007) Shicknatil Sansodhan. Pune: Nutan prakashan.

Bansibihari Pandit (2010) Shicknatil Sansodhan. Pune: Nutan prakashan.

Connor. J. D. (2009). Better English pronounciation London: Cambridge University press.

Campbell, D. T. and Stanley. I. C. (1966). Experimental and quasi experimental designs for research. Chicago: Rand Mcnally.

Gurav. H. K. (1991). Teaching Aspects of English language. Pune: Nutan prakashan.

George Yule (2008). The study of language. London: Cambridge University press.

Joyce Bruce and Marsha weil, Beverly showers (1992). Models of Teaching (4th rd). New Delhi: prentice – Hall of India private Limited, 29-52.

Jesa. M. (2005). Efficient English Teaching. New Delhi: APH publishing corporation, Ansari Roadm, Daryagani.

Johnson. D. Johnson, R. (1999). Learning together and alone: cooperative, competitive and Individualistic learning. Bosten: Allyn and Bacon.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

A STUDY ON EFFECT OF CONSTRUCTIVIST PEDAGOGY ON STUDENT ACHIEVEMENT IN SCIENCE AT SECONDARY LEVEL.

Dr. Sarjerao Pandurang Chavan

Shree Maharani Tarabai
Government College of
Education (B.Ed.), Shahupuri,
Kolhapur.
Email-sarjeraopchavan@rediffmail.com

Introduction :-

Constructivist learning is one strategy that can enable all the learners to construct valid knowledge. Learning in the constructivist framework contributes to Psychological, social and intellectual development of learners unlike other method of Instruction constructivist Pedagogy in science believes that learner can construct knowledge by active participation rather than acquiring knowledge by demonstration in the classroom and Learn to speak and act science participating in experimental discussion. In view of the aforesaid research evidences, question arises as to whether the constructivist approach has any impact on students "achievement in science".

Science has the ability to confuse and frustrate learner of all ages. If child has negative experience in science, that experience would affect his/ her achievement as well as attitude towards science during adulthood. The obvious question is whether students failure to learn science can be ascribed to problem of curriculum, problem of teaching or students. There are many possible reason as to why students fail in science, But most of the reason are related to curriculum and method of teaching rather than the students lack of capacity to learn. Traditional method of teaching make the learner to memorize information conduct well organize science experiments. The traditional teacher as information given and the text book guided classroom have failed to bring about the desired outcome of producing thinking students. Constructivist Pedagogy teaching practice in science classroom are intended to produce more challenging instruction for students and produce improved meaningful learning Research has shown constructivist based approach to promising and its positive effect have been found for both students performance and motivation constructivist pedagogy is a meta-learning strategy that can be used to develop students capacity to learn science independently, constructivist based instruction is believed to be an effective means for increasing students understanding of scientific skill and concepts.

Objective of the Study :-

1) To study the effect of constructivist approach on learning achievement in science of secondary school children.
2) To examine the different dimension of achievement in science of secondary school children.

Hypothesis of the Research study –

1) Students taught through constructivist approach will gain high achievement in science as compared to their counterparts taught through Traditional method of Teaching.
2) There is no significant different dimension of achievement in science of secondary school children.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Limitation of the Research Study :-

1) The study is limited to two urban school of Kolhapur.
2) The study is limited to class VIII students only.

Sample :-

　　　　Selecting the sample for the present study, the researcher had adopted the purposive sampling method. Two different urban school of Kolhapur city were purposively selected for the sake of convenience in conducting the experiment for the study, one section of each school of class VIII were taken as the experimental group and other one section of each school as the control group being selected randomly.

　　　　The experimental group consisting 50 students was given treatment in constructivist approach whereas the control group consisting 50 students was given treatment in Traditional method of teaching the sample was also further distributed according to gender both under experimental and control group.

Tools Used :-

　　　　In order to collect the relevant data for the present study. Two types of instructional tools were used in this present study. The constructivist approach followed by experimental group and Traditional method of teaching followed by control group. Experimental Teaching was based on constructivist learning model as describe by Yager the 5E model (Engage, Explore, Explain, Elaborate, Evaluate). Instruction consist of series of short lecture (10 minutes) in which to introduced new material (engage), followed by the formulation a problem or exercise (explore), Depending on the nature of task involved, students were given to solve these problem with member of their co-operative group this provided on opportunity for interaction with other classmate as they tried to make sense of the new information relevant to past experience or previous knowledge their consensus answer, misconception arises on sheet that was turned in (explain). Then proceeded to the (Elaborate) phases in which addressed misconceptions evidence arise by each group. Then listen carefully to students expanded concepts what they have learned and how they make connection it to the world around them. At the end evaluation 5E is an ongoing diagnostic process that allows determining whether the learner have attained understanding of discussed concept.

Table showing the difference in teaching method between the experimental group and control group.

Teaching Strategy

Experimental Group	Control Group
1) Students centered	1) Teacher Centered
2)Active learning through constructivist activities.	2) Passive learning through teacher lectures.
3) Constant Interaction among students.	3) No interaction among students.
4) Formal co-operation group	No co-operation group.

Page152

Published By:- Aayushi International Interdisciplinary Research Journal (AIIRJ) ISSN 2349-638x
Impact Factor 2.147 (Monthly journal)　　　website :- www.aiirjournal.com
Chief Editor:- Pramod P.Tandale (Mob.9922455749)　　Email id:- aiirjpramod@gmail.com

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

Experimental Design

The Experimental was set up according to the pre-test, post-test, quasi experimental design.

Randomly Sampling group	Pre-Test	Treatment	Post-Test
Experimental group	A1	Learning constructivist framework	A3
Control group	A2	Traditional method of teaching	A4

A1, A2 = Pretest of science ability test.   A3, A4 = Post-test of science ability test.

During the treatment process the experimental group participated in the constructivist approach and control group participated in the normal traditional method. The researcher himself taught to both group in each school separately. In experimental class in order to create the constructivist learning situation, the researcher followed 5E Teaching model and continuous students growth was measured through tests, observations etc. At the end of experiment the science achievement test was administrated to both groups in order to compare their achievement in science.

Analysis and Interpretation

The analysis was carried out using both descriptive and inferential statistics the hypothesis was tested at 0.05 level of significance. In order to determine the effect of constructivist approach, the data were analyzed taking in consideration the overall achievement score of students as well as different dimension of Science Ability Test (SAT).

Table- 1 Present, mean S.D. + Value of score for two groups.

Test	Group	Mean	S.D.	Df	t-value
Science Achievement test	Experimental group N=50	16.42	7.08		
	Control group N=50	14.03	7.22	242	1.23

Table- 2 Post- test mean SD and t-value of score on SAT for two groups.

Test	Group	Mean	S.D.	Df	t-value
Science Achievement test	Experimental group N=50	34.28	6.38		
	Control group N=50	22.72	7.18	242	8.37

Table-2 observe that experimental group achieved greater mean score (34.28) than that of the control group (22.72) after the intervention.

Experimental group outperformed the control group in science. Both the group were really different in their achievement performance in science. The t-test was applied the value of t-8.37 is found to be statistically significant at both 0.05 and 0.01 levels indicate there by significant difference in achievement in science of both the group favoring the experimental group. This result conclude that teaching learning through the constructivist approach has substantially improved the students achievement in science as compared to learning through traditional expository teaching methods.

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

Conference Organized By:-	ISSN 2349-638x
Department Of Education,Shivaji University,Kolhapur (Maharashtra)	Impact Factor 2.147

Conclusion

 Above result the proposed hypothesis.

1) Students self regulation and motivation to learn might improve their achievement.
2) Students self assessment and teacher regular maintenance of portfolio in the classroom.
3) Learner were exposed to variety of activities created by the teacher in the classroom.
4) Students collaboration in the classroom which might reduce their misconceptions.
5) Students ownership throughout the implementation of constructivist approach in the experimental group were empowered to take of their learning.

Reference:

Bayee R (1993) :   Instructional model for science education in developing biological literacy Colorado spring co.

Buch M.B. (1997) :   Fifth survey of Educational Research, NCERT, New Delhi.

Chavan D.K.(2010) :   Educational Research Proposal Insight Publication, Nasik

Dash B.N. (2005) :   Psychology of Teaching Learning Process, Dominant publication, New Delhi.

Best J.W. and :   Research in Education, Prentice Hall

Khan J.V. (2008)   of India, New Delhi.

Lord T (1999) :   A Comparison between traditional and constructivist teaching in environment science. Journal of Environmental science.

Yager R (1991) :   The constructivist learning model towards real reform in science education science teacher 58(6).

पाचोरा स्थित शिक्षाशास्त्र महाविद्यालयके प्रशिक्षणार्थीयोंके ज्ञानरचनावाद संकल्पना के बारें में जागृकता की जानकारी लेना।

राजपूत मानसिंग हरचंदसिंग

सहायक प्राध्यापक

सौ.सुमनताई पाटील शिक्षाशास्त्र महाविद्यालय

पाचोरा जि. जलगाँव

सारांश–

　　　　पाचोरा शहर मे स्थित शिक्षाशास्त्र महाविद्यालयके प्रशिक्षणार्थीयोंकी ज्ञान रचनावाद संकल्पनो ज्ञान के बारे मे जानकारी लेना यह अनुसंधानकर्ता का मुख्य उद्देश था। इस कार्य के लिये अनुसंधानकर्तानि पाचोरा स्थित सौ. सुमनताई पाटील शिक्षाशास्त्र महाविद्यालयके कुल छात्रों मे से उद्देशपूर्ण न्यादर्श चयन पध्दतीके आधार पर ३० छात्रों का चयन कर अनुसंधानकर्तांद्वारा स्वयःनिर्माण कीये गऐ प्रश्नपत्रिका के माध्यम से जानकारी लेकर उसका विश्लेषन किया है। इस कार्य के अंत मे शिक्षाशास्त्र महाविद्यालयके प्रशिक्षणार्थीयोंका ज्ञानरचनावाद का ज्ञान जागृकता प्रमाण मध्यम स्थितीमें है। तथा महिला प्रशिक्षणार्थी और पुरुष प्रशिक्षणार्थीयो के बीच ज्ञान रचनावादका ज्ञान और जागृकता के बारे मे बडा अंतर है। परिणाम हेतु बी. एड. प्रशिक्षणार्थीयो मे ज्ञान रचनावाद के ज्ञान और जागृकतामे वृध्दी लाने की जरुरत है।

प्रस्तावना–

　　　　२१ वी सदी यह विज्ञान का युग माना जाता है। जानकारी यह ज्ञान की नींव मानी जाती है। आज ज्ञानका विस्फोट हो रहा है, इसका मतलब है की ज्ञान की कक्षाऐं विस्तारीत रुप धारण कर रही है। परिणमत: ज्ञान की खोज, विस्तार, ज्ञानदान, ज्ञानसंकलन तथा उसकी संस्करण की विधी गतिमान युग मे अधिक गतीसे उभरकर सामने आरही है।

　　　　इन विविध विधीयों में १९८० दौरान पियाजे के सिध्दांतपर आधारीत जो ज्ञाननिर्माणकी विधी का उदय हुऑ है उसे ही ज्ञानरचनावाद कहते है।

　　　　इस विधी की विशेषता है की इसमें छात्र ज्ञान का निर्माण एवं रचना कर अध्ययन की क्रिया पूर्ण करता है। इसलिए वह पूर्वज्ञान, श्रध्दा, विश्वास, अनुभव तथा सिध्दांतका एकात्ममीकरण करता है और ज्ञान की शास्त्रीय रुपमें रचना अपने बुध्दीगत स्तर पर करता है।

　　　　ज्ञानरचनावाद के मुख्य तीन प्रकार है। इसमें बुध्दीगत रचनावाद, सामाजिक रचनावाद तथा मुलरचनावाद का अंतर्भाव होता है। ज्ञानरचनावाद यह एक पध्दती नही है, बलकी वह एक तात्विक दृष्टिकोण है। ऐसे दृष्टिकोण की जरुरत आजके छात्रकेंद्रित शिक्षाप्रणाली में है। शिक्षाशास्त्र विद्याशाखामें ज्ञानदान एवं ज्ञानग्रहण की नईनई विधीयां विकसीत हो रही है। और इस शाखा की उपाधि लेने वाले तथा कल के अध्यापक इन नईनई विधीयो के बारे मे पढते है । उसी आधारपर उत्तर महाराष्ट्र विश्व विद्यालय जलगाँव के वर्तमान शिक्षाशास्त्र उपाधी पाठयक्रम में भी ज्ञानरचनावादी दृष्टिकोण का अंतर्भाव किया गया है। इस हेतुके आधारपर अनुसंधान कर्तानि छात्रोंके बीच ज्ञानरचनावाद के बारे में कितनी जागृतता है इसका अध्ययन करने का विचार कीया और प्रस्तुत कार्य करने प्रयास भी किया है।

आवश्यकता एवं महत्व–

　　　　रचनावादी दृष्टिकोन से छात्रों के विविध क्षमता का मुल्याकन किया जाता है। ज्ञानरचनावाद इस संकल्पनासे अध्ययनकर्ता स्वयं के लिये व्यक्तिगत तथा सामुहिक स्तरपर ज्ञान का निर्माण करता है इसमें अध्ययनके पारिस्थितीक अनुभव को महत्व दिया जाता है छात्राकों खुद के ज्ञान को प्रगट करने के लिये ज्ञानवादी दृष्टिकोनको एक नई विधी माना जाता है । छात्रामें स्वयंम अध्ययन के आधारपर ज्ञानकी रचना करने की क्षमताओं का विकास मतलब ज्ञानवादी दृष्टिकोन कहलाता है। इस दृष्टिकोन के अनुसार छात्र उसके सामाजिक एवं सांस्कृतिक पार्श्वभुमी के अनुसार ज्ञान की विविध रचनाओ को निर्माण कर सकता है, इसलिए वहं विविध भाषा, सांकेतांक, चिन्ह तथा आकृतीयोंका मुख्यतौरपर इस्तमाल करता है।

संकल्पना आरेखन, समस्याओ का निराकरण, गुटकार्य, संबोध का स्पष्टीकरण, स्वयंशोधन तथा प्रकल्पनिर्माण ऐसी कई शैक्षणिक विधिओं इस्तेमाल कर छात्रोंको ज्ञानरचना का अवसर प्रदान होता है। इससे उन्हे चिरंतन एवं संपूर्ण ज्ञानप्राप्त होता है। इन सभी बातों को आधार मानकर प्रस्तुत अनुसंधानकार्यकी आवश्यकता अनुसंधानकर्ता को महसूस हुई है।

शिक्षाशास्त्र महाविद्यालयके प्रशिक्षणार्थी कल के माध्यमिक शिक्षा स्तरपर अध्यापक के रुपमे पहचाने जायेगें तथा माध्यमिक शिक्षास्तर पर के अध्यापकोंकी नियुक्ती उनके अध्यापन पध्दती के आधारपर होती है। उनके विविध अध्यापन पध्दतीयोंमें अध्यापन की विधियोंका ज्ञान उनके पाठ्यक्रमद्वारा उन्हें दिया जाता है, वर्तमान शिक्षाप्रणाली छात्रकेंद्रित है। इसलिये प्रशिक्षणद्वारा प्रशिक्षणार्थीयोंको छात्रकेंद्रित अध्यापन विधियोंका ज्ञान देणे पर ज्यादा जोर वर्तमान पाठयक्रममें नजर आता है। इसमेंसे स्वयंअध्ययन का केंद्रबिंदु के रुपमें पहचाने जानेवाली एक विधीदृष्टिकोन याने की ज्ञानरचनावाद भी इसमें शामील है। परंतु वर्तमान प्रशिक्षणार्थीयोंको इस ज्ञानरचनावादके बारे में कितनी जाणकारी और जागृकता है? इस सवाल का जबाब ढुँढने के उद्देशसे यह कार्य किया गया है।

उद्देश–

प्रस्तुत कार्य के लिऐ अनुसंधानकर्ता द्वारा तीन मुख्य उद्देश रखें गऐ है।
१ शिक्षाशास्त्र महाविद्यालयके प्रशिक्षणार्थीयो के ज्ञानरचनावाद की जागृकता जाणना।
२ शिक्षाशास्त्र महाविद्यालयके प्रशिक्षणार्थीयो मे से महिला प्रशिक्षणार्थीयो की ज्ञानरचनावाद की जागृकता जाणना।
३ शिक्षाशास्त्र महाविद्यालयके प्रशिक्षणार्थीयो मे से पुरुष प्रशिक्षणार्थीयो की ज्ञानरचनावाद की जागृकता जाणना।

अनुसंधान कार्यनिती–

प्रस्तुत कार्य के माध्यमसे अनुसंधानकर्ता शिक्षाशास्त्र महाविद्यालयमें प्रशिक्षणार्थीयोंकी ज्ञानरचनावाद के बारे में जागृता जाननी है, इसलिए कार्यपुर्ती हेतु अनुसंधानकर्तानि सर्वेक्षण अनुसंधान विधी का चयन किया है।

अनुसंधान कार्यकी व्यापकता एवं मर्यादा–

प्रस्तुत अनुसंधान कार्य जलगाँव जिले पाचोरा नगर तक सिमीत है। तथा पाचोरा स्थित शिक्षाशास्त्र महाविद्यालयमें पढ रहें प्रशिक्षणार्थीयो तक ही इस कार्यकी व्यापकता निहित है।

न्यादर्श प्रतिचयन–

प्रस्तुत अनुसंधान कार्य के लिऐ अनुसंधानकर्तानि जलगाँव जिले के पाचोरा नगरस्थित सौ.सुमनताई पाटील शिक्षाशास्त्र महाविद्यालयके ३० प्रशिक्षणार्थीयोका सहउद्देश पूर्ण प्रतिचयन विधी द्वारा चयन किया है।

अनुसंधान कार्य के साधन–

प्रस्तुत अनुसंधान कार्य के लिऐ अनुसंधानकर्तानि स्वनिर्माण संरचित प्रश्नावलीका बतौर साधन इस्तेमाल किया है।

अनुमान–

प्रस्तुत अनुसंधान कार्य के पश्चात कुछ मुख्य अनुमान सामने आये वह निचे दिये गऐ है।
१ कुल प्रतिसादकर्ताओ में से २०.०० प्रतिशत प्रतिसादकर्ता यह ज्ञानरचनावाद के बारे में पूर्णत: जागृत है।
२ कुल प्रतिसादकर्ताओ में से ४६.६६ प्रतिशत प्रतिसादकर्ता यह ज्ञानरचनावाद के बारे में मध्यम स्तरपर जागृत है।
३ कुल प्रतिसादकर्ताओ में से ३३.३३ प्रतिशत प्रतिसादकर्ता यह ज्ञानरचनावाद के बारे में निम्न प्रमाण में जागृत है।
४ कुल महिला प्रतिसादकर्ताओ में से २०.०० प्रतिशत प्रतिसादकर्ता यह ज्ञानरचनावाद के बारे में पूर्णत: जागृत है।
५ कुल महिला प्रतिसादकर्ताओ में से ४०.०० प्रतिशत प्रतिसादकर्ता यह ज्ञानरचनावाद के बारे में मध्यम स्तरपर जागृत है।
६ कुल महिला प्रतिसादकर्ताओ में से ४०.०० प्रतिशत प्रतिसादकर्ता यह ज्ञानरचनावाद के बारे में निम्न प्रमाण में जागृत है।

Interdisciplinary National Conference on Researches and Experiments in Constructivist Pedagogy

| Conference Organized By:- | ISSN 2349-638x |
| Department Of Education,Shivaji University,Kolhapur (Maharashtra) | Impact Factor 2.147 |

७ कुल पुरुष प्रतिसादकर्ताओ में से २०.०० प्रतिशत प्रतिसादकर्ता यह ज्ञानरचनावाद के बारे में पूर्णत: जागृत है।

८ कुल पुरुष प्रतिसादकर्ताओ में से ५३.३३ प्रतिशत प्रतिसादकर्ता यह ज्ञानरचनावाद के बारे में मध्यम स्तरपर जागृत है।

९ कुल पुरुष प्रतिसादकर्ताओ में से २६.६६ प्रतिशत प्रतिसादकर्ता यह ज्ञानरचनावाद के बारे में निम्न प्रमाण में जागृत है।

चर्चा–

शिक्षाशास्त्र महाविद्यालय के प्रशिक्षणार्थीयों में ज्ञानरचनावाद के बारे में जागृकता प्रस्तुत कार्यके माध्यमसे दिखकर आयी। पुरुष प्रशिक्षणार्थीयों में ज्ञानरचनावादके बारे में जागृकता औसत प्रमाण से अधिक प्रमाणमें दिखकर आती है। इसितरह महिला प्रशिक्षणार्थीयों में ज्ञानरचनावाद के बारे में जागृकता औसत प्रमाण से अधिक प्रमाणमें दिख कर आती है।

किंतु पुरुष एवं महिला प्रशिक्षणार्थीयों की तुलना की जाये तो ऐसा निष्पण होता है की पुरुष प्रशिक्षणार्थी महिला प्रशिक्षणार्थीयों से ज्ञानरचनावाद के बारें में अधिक प्रमाणमें जागृत है।

तथा ज्ञानरचनावाद के बारें में निम्न जागृकता का प्रमाण यह पुरुष प्रशिक्षणार्थीयों से ज्यादा महिला प्रशिक्षणार्थीयोंके अंदर है। इस चर्चा एवं तथ्यो आधार पर हम यह कह सकते है की शिक्षाशास्त्र महाविद्यालयके कुल प्रशिक्षणार्थीयों में पुरुश प्रशिक्षणार्थी ज्ञानरचनावाद के बारें में ज्यादा जागृत तथा जानकारी धारक है।

संदर्भ–

भंगाळे, शैलजा. और धांडे, पिंगला., (२०१६), *अध्ययनासाठी मुल्यनिधारिण*, जलगॉव : प्रशांत पब्लिकेशन्स.

सांगोलकर, अरुण., (२०११), *नवीन जागतिक समाजातील शिक्षणाचे विचारप्रवाह*, नाशिक : इनसाईट पब्लिकेशन्स.

दांडेकर, वा.ना., (१९८९), *शैक्षणिक मुल्यमापन व संख्याशास्त्र*, पुणे : श्रीविद्या प्रकाशन.

पाटील, गीतांजली., (२०१३), *सातत्यपूर्ण सर्वकंश मुल्यमापन, ज्ञानरचनावाद आणि शिक्षकाची भुमिका.* भारतीय शिक्षण, म.भा.शि.मं., मुंबई. पृ.२०.

मंडळामार्फत शिक्षकांसाठी आयोजित राज्यस्तरीय निबंध स्पर्धा २००९–२०१० या स्पर्धेतील प्रथम क्रंमाक प्राप्त निबंध., (२०१०), *माध्यमिक व उच्च माध्यमिक स्तराववर अध्ययन व अध्यापनात रचनावादाचा उपयोग.* शिक्षण संक्रमण, म.रा.मा.व उ.मा.शि.मं., पुणे. पृ.२४

DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY

AURANGABAD - 431 004, MAHARASHTRA, (INDIA)

NAAC Re-accredited With 'A' Grade

Telephone : [0240] 2403370
: (Mob.) 9422933582
Web-Site : www.bamu.ac.in
E-mail : head.education@bamu.ac.in
: shobhanajoshi99@gmail.com

Dr. Shobhana V. Joshi
Professor & Head

DEPARTMENT OF EDUCATION

Reference No. : Edu/Pre-Ph.D./ **395**

Date: 23/11/2019

PRE-PH.D. COURSE WORK IN EDUCATION COMPLETION CERTIFICATE

This is to certify that Mr./Mrs. *Pinjari Chirakhoddin Vajiroddin* with Examination Seat No. *1941* has successfully completed *Pre-Ph.D. Course Work* of sixteen (16) credits in the subject of Education during the First Academic Session of the year 2019-20.

He/She has secured **A++** grade with **8.20** Average Grade Point in this Pre-Ph.D. Course work.

Place: Aurangabad
Date: 23/11/2019

Dr. Shobhana V. Joshi
Professor & Head
Department of Education

VOLUME
4

MULTIDISCIPLINARY
RESEARCH TRENDS

ASSOCIATE EDITORS

DR. NARENDRA VINAYAKRAO HARNEY
DR. SHASHIKANT SITRE
DR. S. SARAVANAN
DR. GAURAV DUBEY
DR. T. CH ANIL KUMAR

CHIEF EDITORS

DR. MOHD. SHAIKHUL ASHRAF
LOVELEEN PARMAR

CO-EDITOR

DR. ANANT S. DESHPANDE

MULTIDISCIPLINARY RESEARCH TRENDS, VOLUME – 4

Edited by: Dr. Mohd. Shaikhul Ashraf, Loveleen Parmar, Dr. Narendra Vinayakrao Harney, Dr. Shashikant Sitre, Dr. S. Saravanan , Dr. Gaurav Dubey, Dr. T. CH Anil Kumar, Dr. Anant S. Deshpande

Text © *Editors*, 2022
Cover page ©RED'SHINE Studios, Inc, 2022

CHAPTER 15

Regional Revive in Educational & Vocational Problems of Muslim Minority People in Maharashtra State

Pinjari Chirakhoddin Vajiroddin [1], Dr. Raziya Patel [2]

ABSTRACT

In Indian Constitution has made a pledge seven decades ago to build an inclusive, plural and secular society which would equitably integrate its religious minorities while respecting their distinct identities and honoring difference. This is particularly true of sour largest minority community, Muslims, who constitute 14.23 per cent of the population in 2011.By the sachar committee observe in 2005 that Muslim minority community is lagging behind in socially, politically, economically and educationally backward. Muslim minorities are pursuing very poor life other than any other backward class in India. Only Education is the key tool for Evaluation of social Development in any society. When any society lagging behind in educationally that indicates in human development parameter's is very poor. Muslim Social exclusion can be seen in the form of segregation socially, politically, economically, culturally, educationally in Indian society. There is Urgent Need provide rectification through affirmative action. Religious minorities are the mostly poor section of the any other Indian society. Muslim minorities deserves social justice and equity as much as other disadvantaged groups including Dalit's and other class

KEYWORDS: *Muslim, minorities, educational and vocational, problems in Maharashtra.*

INTRODUCTION

India is large democratic country in the world and also second most populated country quite behind in china. India was known as very diverse population in basis of religion, cast, sect, and level but till it united. Hinduism is the major religion of India followed by Islam, Christianity, Sikhism and many other religious groups. The Muslims entered India in eighth century. In the beginning as traders, later as rulers the Indian Muslims have contributed to the socio cultural development of the nation The Muslims of India are the largest religious minority in the country and also the second largest Muslim community in the world after Indonesia. Muslims with 14.23 per cent of India's population are not only the largest minority community, but their presence is visible in all the states and union territories of the country. This largest minority community of the county has been moved to the lowest socio-economic stratum in post-independent India. They are even behind (and are continuously lagging behind) the Scheduled Castes in many folds of life. They are educationally most marginalized, economically poor and politically a powerless community in the country.

There is a urgent need for inclusion of Muslim minorities in the main stream of economic development of the Nation. The eleventh plan ensured the same. In this back drop, the present paper briefly

---

[1] Indian institute of Education kothrud, Pune Research Centre SPPU Pune

[2] Indian institute of Education kothrud, Pune Research Centre SPPU Pune

CHAPTER 11

Status of Muslim's Education and Profetion's in Regional Maharashtra: Problems And Concerns

Pinjari Chirakhoddin [1], Shaikh Mateen Latif [2]

Abstract

After the independence of India, Pakistan was created. Without partition, a large number of Muslims were absorbed into it and the rest became permanent in Bangladesh. Due to this, the number of Muslims in India decreased and they became a minority. They are deprived of the current education required by the changing social needs, which will lead to livelihoods and livelihoods. They are more inclined towards school education, because they are educationally backward compared to other communities due to their traditional focus of education. Because of showing interest, their life has become poor and the cause of it is their illiteracy. You can believe that backwardness, poverty, financial difficulty, social disparity, lack of self-confidence among them is only due to lack of education. The role of education is facilitating social and economic progress is well accepted today. Improvements in the functional and analytical ability of children and youth through education open up opportunities leading to both individual and group entitlements. The Indian Constitution is committed to the equality of citizen and the responsibility of the State to preserve, protect and the responsibility of the State to preserve, protect and assure the rights of minorities in matters of language, religion and culture. The United Nations Declaration on the Rights of Persons Belonging to National, Ethnic, Religious and Linguistic Minorities says that the promotion and protection of the rights of persons belonging to such minorities contribute to the political and social stability of the countries in which they live

Key Word: Muslim Education & profession, Regional Maharashtra, Minority problems & Concerns

Introduction:

Human beings study with the strength of their intellect. Always learning is the innate tendency of human beings to understand and take from experience. Human beings get the education of their world and surroundings from the society. The purpose of education is to develop the individual and the society. Through education, there is a positive change in the behaviour of the human body, mind, intellect and ethics. Education is a continuous process and the inherent qualities of the individual are developed through education. Human personality can also be shaped. All the inherent qualities, latent tendencies and working power of a person can be awakened only by education. The task of education is to develop the person's desire. Society is formed through the network of human relationships. Being a social animal, proper adjustment in the society and then the development of the individual are mutually

---

[1] Research Scholar, Indian Institute of Education, Savitribaiphule, Pune University

[2] Research Scholar, Department of Education Dr. Babasaheb Ambedkar Marathwada, University Aurangabad

CHAPTER 16

Present Status of Higher Education in Muslim Community

Shaikh Mateen Latif [1], Pinjari Chirakhoddin [2]

Abstract

The Indian Constitution is committed both to the idea of equality and to the preservation, protection and assurance of rights of minorities. The National Commission for Minorities in India has identified Muslims, Christians, Sikhs, Buddhists and Parsees which constitute 20.22% of the total population of the country as religious minorities, while Hindus are the majority group. Among these various minorities, Muslims occupy an important position in Indian community. It has also been reported that the dropout of the Muslim students from schools and other educational institutions is of higher rate. Girl's literacy among the Muslims is also significantly low and this is one of the important reasons of ignorance and illiteracy in Muslim community. Education remains a top priority in India and educating girls become further important in the country where women constitute fifty percent of human resources and are playing a vital role in shaping the economic, social, cultural and political fabric of the community. It revels from the present study that Muslim community in India is the most backward in terms of education as well as socio economic condition. It makes clear that the vision of Muslims is not towards modern education. The present study has identified the problems of Muslim's education in India and further address the proper suggestion and measures for improvement the status of Muslim Higher education.

Keywords: Muslim higher education, Literacy, economic, social, cultural, political

Introduction:

The role of education is facilitating social and economic progress is well accepted today. Improvements in the functional and analytical ability of children and youth through education open up opportunities leading to both individual and group entitlements. The Indian Constitution is committed to the equality of citizen and the responsibility of the State to preserve, protect and the responsibility of the State to preserve, protect and assure the rights of minorities in matters of language, religion and culture. The United Nations Declaration on the Rights of Persons Belonging to National, Ethnic, Religious and Linguistic Minorities says that the promotion and protection of the rights of persons belonging to such minorities contribute to the political and social stability of the countries in which they live. Meeting their aspirations and ensuring their rights acknowledge the dignity and equality of all individuals and furthers participatory development. The National Commission for Minorities in India has identified Muslims, Christians, Sikhs, Buddhists and Parsees constitute 20.22% of the total population of the country as religious minorities, while Hindus are the majority group. Among these various minorities, Muslims occupy an important position in Indian community. It is observable phenomenon that the

---

[1] Research Scholar, Department of Education Dr. Babasaheb Ambedkar Marathwada University Aurangabad
[2] Research Scholar, Indian Institute of Education, Savitribaiphule, Pune University

The Board of

infinity
Publication

Is hereby Awarding this Certificate to

Pinjari Chirakhoddin Vajiroddin

In recognition of the publication of the chapter

" REGIONAL REVIVE ON DEMOGRAPHIC & EDUCATIONAL STATUES OF MUSLIM & BUDDHIST MINORITY PEOPLE IN MAHARASHTRA STATE "

In the peer-reviewed edited book entitled
"CONVERGING PERSPECTIVES: MULTIDISCIPLINARY EXPLORATIONS IN CONTEMPORARY RESEARCH, VOLUME-1"
Edited by Manoj, Paramela Shankar Jogadande, Dr. J. Ahamed Meeran, Dr. Ashwini Khandekar, Dr. Sheetal M. Zalte, Mrs. Swapnali Kulkarni, Dr. Pushpa Mamoria, Dr. Aarti Sharma, Shruti Verma

Published in Category of Edited Book
May, 2023 (First Edition)
ISBN: 978-93-89476-28-6 | ISBN-10: 93-89476-28-3 | DIP: 18.10.9389476283 | DOI: 10.25215/9389476283

w w w . r e d s h i n e . c o . i n

Sruthi S
Founder,
Paradox Publications Guide House

REDSHINE · CERTIFIED