REFERENCES

Anderson, L. W. & Ching, Min. (1987). Affective Teacher Education. Dunkin Michael J. (Eds.). The International Encyclopedia of Teaching and Teacher Education. New York : Pergamon Press.

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.

Best, J. W., Khan, J. V. (2006). Research in Education. New Delhi : Prentice Hall of India Private Limited.

Bhandarkar, K. M. (2006). Statistics in Education. Hyderabad : Neelkamal Publication Pvt. Ltd.

Biddle, B. J., Good, T. L. & Goodson, I. F. (1997). International Handbook of Teachers and Teaching. Dordrecht : Kluwer Academic Publishers

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.

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.

Smilkstein, Rita. (2003). We are born to Learn.United State of America: Pearson

Education,Inc.

Steele. M.M.(2005).Teaching students with learning Disabilities: Constructivism or behaviourism. Journal of Current issues in Education.Vol.8. Retrieved from http://cie.asu.edu/volume8.

Wittrock, M, Krathol,D & Anderson, L. (2001). Taxonomy for learning teaching and assessing.United State of America: Addison Weseley Longman, Inc.

Wilson, Bob (1987). Training technology programme : Vol. 1, The systematic design of training courses. Lancashire, Parthenon Publishing.

Wittrock, M. C. (Eds.) (1986). Handbook of Research on Teaching (3rd ed.). New York : Macmillan Publishing Company.

Appendix-A

Rating Scale used for Effectiveness of Computer Multimedia Package

Component	Nature of Criteria	Scale of Rating				
		0	1	2	3	4
Process of Knowledge Construction	Component					
	Sequence					
	Correlation					
	Interlinking					
	Overall Concept mapping					
Abilities required for Knowledge Construction	Checking & Preparing readiness for Children					
	Attention					
	Presenting Auditory/ Visual segment					
	Decoding Previous Knowledge Construction					
	Activation of Previous Knowledge Construction					
Teacher Tasks for Knowledge Construction of Pupils	Use of Teaching material to Learning Material					
	Facilitating					
	Questioning					
	Use of maximum Resources					
	Creation of Learning Environment					

Component	Nature of Criteria	Scale of Rating				
		0	1	2	3	4
Change in Role of Teacher	Talk in forms of Critical Questioning					
	Facilitator					
	Avoiding orders, threats, and Punishments					
	Organization of Conversation					
	Teaching for Understanding					
Change in Teaching Approach of Your Subject	Group Activity					
	Questioning					
	Learning Resources					
	Learning Plan					
	Product to Process					

Appendix- B

Check List for evaluation of developed Computer Multimedia Package

Name the Teacher:

Name of the College:

Qualification:

Signature\

Dear Teacher,

Under the UGC major research project myself Dr .N. R. Sapre doing research work on **"Development of Computer Multimedia Package for enabling Student teachers and Teacher educators for Constructivist Classroom".**

For this study researcher develop a Computer Multimedia Package(CMP) in the form of Module designs which involves Text, Audios, related Videos and PPT related to Constructivist approach.

As a teacher educator Please make an Evaluation regarding Technical aspects, Multimedia graphics, Adaptability, Instructional content, Screen elements, Teacher and Learner support material and age appropriateness of the Computer Multimedia Package with the help of Check List.

Sr. No.	Nature of response	Yes	No
Instructional Content			
1	Information is accurate, complete, and current and accurately represents the topic.		
2	Content of CMP is presented clearly (Text, Pictorial, Graphical, Auditory and Videos information are presented clearly).		
3	Facts are come from reliable sources which are clearly identified.		
4	Content and Context are consistent with the theme.		
5	Content moves learners beyond the basics and encourages higher level of thinking.		
6	Content engaged the students in applying what they learn		
Screen Elements:			
7	Titles, text areas and navigation buttons are easy to understand.		
Multimedia Graphics: (Audio, Video and PPT)			
08	Background and text are pleasing, compatible and easy to read.		
09	Graphics are Consistent, appropriate and designed to optimize learning.		
10	Colors and Colors scheme are used in an effective way.		
11	Animation and Videos are complimentary to learning.		

Sr. No.	Nature of response	Yes	No
Technical Aspects:			
12	All links work properly.		
13	Clear and Complete directions are available for access or installation.		
14	Users are able to access CMP with ease.		
Accessibility:			
15	Hyperlinks are clear.		
16	Paragraphs and sections have clear and accurate information headings.		
17	Clear and Clean fonts are used consistently.		
Teacher and Learner support material			
18	Provides various ways to reach technical support.		
19	During the use of CMP, there was evidence of learning gains. It supplies information to teacher and students on how it measures student learning.		
20	CMP provides additional sources such as Bibliographies which are suitable to Constructivist approach.		
Age Appropriateness:			
21	Reading level is appropriate for target audience.		
22	Product is suitable for the age.		
23	Directions are clear and complete enough for students to performed required task.		

Appendix- C

Teaching Plan Evaluation Criteria- Check List

Sr. No.	Nature of response	Yes	No
ILPE(Investigating Learners Previous Knowledge)			
1	A resource provided for preparing a central idea of the content in a pupils mind.		
2	An activity provided for preparing a central idea of the content in a pupils mind.		
3	An activity provided for determination of previous experiences related to the central idea of the content.		
4	An activity provided for expression of thoughts among each pupil.		
5	Resources provided for presentation of comparative information after peer pupils discussed.		
6	An activity provided for expression of self experiences of each pupil related to the central idea of the content.		
7	An activity provided for solving the problem related to the content.		

Planning for Concept Learning			
8	List of all concepts from content.		
9	Classification of concepts with respect to teaching inductively/ Deductively.		
10	Definition/ Description of each concept.		
11	Presentation of examples having similarities to concept (Positive examples.)		
12	Presentation of examples having contradictions to concept (Negative examples.)		
13	Provision of activities for preparing criteria of each concept.		
14	Provision of activities for exploring no of examples from pupils.		
Concept Teaching by Inductive method			
15	Provision of resources to find the Positive examples related to concept.		
16	Provision of resources to find the Negative examples related to concept.		
17	Provision of activities for preparing the characteristics of Negative examples.		
18	Provision of activities for pupils to generate lists of related to the concept.		
19	Definition of Concept.		

Directed Discussion			
20	Questions based on the textual content.		
21	Questions based on situations included in the textual content.		
22	Questions based on relations among the main character included in the text.		
23	Questions based on the various facts included in the text.		
24	Questions based on the list of the story/ Central theme/ main Goal/ Main points.		
25	Questions based on values reflected in the content.		
26	Questions based on types of Literature/ Nature of subject/ Types of history.		
Exploratory Discussion			
27	Questions related to discussions based on similarities and differences with content.		
28	Rising of issue based questions for discussing both / many sides of the issue.		
29	Provision of resources to guide the discussion.		
30	Provision of activities for getting the contradictory information from pupils with respect to the content.		
31	Provision of activities to pupils to suggest some solutions to the problem from content.		

32	Provision of resources to pupils for developing a feeling of self involvement in the raised problem.		
33	Provision of activities to pupils for conducting peer group discussion.		
Reflective Discussion			
34	Provision of discussion activities for preparing solution to the raised problems.		
35	Questions for identifying the nature and structure of the content.		
36	Provision of activities for acquainting the nature and structure of content.		
37	Questions for understanding the characteristics of the learned content.		
38	Provision of Group activities for acquainting the nature and structure of content.		
39	Provision of time for reflection.		
40	Provision of time for oral expression.		

Appendix - D

LIST OF THE EXERTS

1. Dr. A. N. Joshi, Nashik
2. Shri. Ramesh Panase, Wai
3. V.C. Deshpande, Aapancha, Pune
4. Chitra Sohani, Pune
5. Suman Karandikar, Pune.
6. Sheela Koltakar, Pune
7. Suchita Padalkar, Srujanananda, Kolhapur
8. Mr. Dandekar, Chikalgaon
9. Dr. Rajashri Bam, Sangamner
10. Teachers of Marathi, English, History and Science Subject of Lokmanya Tilak Highschool, Chikhalgaon

Appendix- E

LIST OF QUESTIONS

1. Make a Concept Map for 'Process of Knowledge Construction?
2. Which are the abilities required to teachers for Knowledge Construction?
3. Which are the teacher tasks used by the teacher for Knowledge Construction of pupils?
4. Which are the changes to be required in the Role of Teacher with respect to Knowledge Construction of pupils?
5. In which manner you will change your teaching approach with respect to your subject?

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Appendix -F

Hard Copy of Computer Multimedia Package for Enabling Teacher-Educators and Student-Teachers for Constructivist Classroom