

A STUDY OF LEARNING STYLES OF B.ED. TRAINEES OF INDIRA GANDHI NATIONAL OPEN UNIVERSITY (IGNOU)

P.K.Sahoo and Subhash Chandra

The present study attempts to study the learning styles of Open-Distance mode (ODL) B.Ed. students of the Indira Gandhi National Open University (IGNOU) and the relationship between different learning styles and response patterns of B.Ed. students of IGNOU. Descriptive survey method was used in this study. Grasha-Reichmann Learning Style Scale (1996) was used to determine the Learning Style of learners. Sample includes 150 final year B.Ed. trainees of IGNOU enrolled in UP. χ^2 test was used for testing the hypothesis of the study. The results of the study report that a large majority of students of ODL mode were found to be adopting Collaborative, Participant, Dependent, and Competitive learning styles. The response patterns of B.Ed. trainees and learning styles were found associated with each other. Students having Independent learning style were found to be significantly larger in numbers than those having dependent style while the numbers of students with Participant learning style were found to be significantly larger than those having avoidant style among distance mode B.Ed. trainees. The number of students having a Collaborative style were found to be approximately same as students with Competitive learning style.

KEYWORDS: Learning Styles, B.Ed. Trainees, IGNOU

INTRODUCTION

This is the age for global movement of Open Learning and Distance Education, with special emphasis on self-study. As a discipline, Open and Distance

P.K. Sahoo ✉

Professor, Department of Education, University of Allahabad, Allahabad, UP, INDIA
Email: pksahooald@rediffmail.com

Subhash Chandra

Research Scholar (JRF), Department of Education, University of Allahabad, Allahabad, U.P., INDIA
Email: subhash84au@gmail.com

Education is very young and evolving. The field is vast, ever growing with innovations, and the scope for study and research is unlimited. The emergence of Open and Distance Learning is the domain of education and training internationally, and with specific reference to India, was based on the philosophy and commitment of the provision for access and equity and increasing use of new educational technologies in the design, development and delivery of self-learning materials. UNESCO (2002) has defined Distance Education as an “educational process in which a significant proportion of the teaching is conducted by someone removed in space and/or time from the learner.” The gap between learners and institution is minimized through media and materials- print and non-print (audio, video and digital), radio programmes, TV programmes, audio-conferencing and Internet. Learners also learn through occasional meeting with tutors and with peer group. An open learning system may be defined as one in which the focus of learning is primarily on the students. The Open University represents an alternative approach to higher learning. It stands distinctively away from a highly formal, institutionalized and centrally administered system of education. The B.Ed. programme is a training programme for professional development of untrained experienced teachers working in government or government recognized schools. IGNOU launched its B.Ed. programme in 2001 and UPRTOU launched the similar programme in the year of 2003.

The concept of learning style was first presented by Dunn in 1960. Learning styles and cognitive styles are sometimes used interchangeably. Cognitive style is defined as the personal feature of the individual in using his mind, perceiving and using information. Learning style is similar to cognitive style, but is a more specific form of cognitive style. Grasha (1996) defines learning style as child's preferences in thinking and interaction with other children in different classroom environments and experiences. Learning styles are characteristic strengths and preferences of the learners for responding to the stimuli in environment and processing the information. It is a behavioural pattern developed for any new learning. This approach to learning emphasizes the fact that individuals perceive and process information in very different ways. A comprehensive definition for learning styles that has been adopted by leading theorists in the field is given by Keefe. According to Keefe (1979) the learning styles can be defined as “the composite of characteristic cognitive, affective and physiological factors that serve as relatively stable indicators of how a learner perceives, interacts with, and responds to the learning environment.”

According to Wikipedia, “Learning style is an individual natural or habitual pattern of acquiring and processing information in learning situations.” Learning styles are different ways that a person can learn. It's commonly believed that most people favour some particular method of

interacting with, taking in and processing stimuli of information. According to Encyclopaedic Dictionary of Education (2005), "Learning style refers to preferred mode of problem solving, thinking or learning used by an individual".

A few definitions are noticed in Internet glossaries:-

- The manner, in which a learner perceives, interacts with and responds the learning environment. Components of learning style are the cognitive, affective and physiological elements, all of which may be strongly influenced by person's cultural background.
- A preferential mode, through which a subject likes to master learning, solve problems, thinks or simply react in pedagogical situation.
- A consistent pattern of behaviour and performance by which an individual approaches educational experiences, learning styles is derived from cultural socialization and individual personality as well as from the broader influence of human development.
- Learning styles reflect the underlying courses of learning behaviour. They help in determining educational conditions under which the learner is most likely to learn. These are the 'clues' which reveal how the learners mind relate and responds to the world. Learning styles are often related to cognitive, affective and physiological domains.

Grasha and Reichmann (1974) identified 6 different learning styles i.e. Independent, Avoidant, Collaborative, Dependent, Competitive and Participant learning styles. These are discussed as follows:

1. Independent Style: Independent students prefer independent study; self paced instruction, and would prefer to work alone on course projects than with other students. They like to think for themselves and are confident in their learning abilities. They prefer to learn content that they feel is important. They are confident learners that don't have the need to confer with others.
2. Dependent Style: Dependent learners look to the teacher and to peers as a source of structure and guidance and prefer authority figure to tell them what to do. They show little intellectual curiosity and who learn only what is required.
3. Competitive Style: Competitive student learn in order to perform better than their peers do. They see the classroom as a win-lose situation in which they must win. They like to be the centre for attention and to receive recognition for their accomplishments in class.
4. Collaborative Style: Collaborative learners learn through sharing and cooperating with the teacher and their peers. They prefer

lecturers with small group discussion and group projects.

5. **Avoidant Style:** Avoidant learners are not enthusiastic about learning content and attending class. They are reluctant to learn and uninterested in class activities. They do not enjoy learning and generally try to avoid it all costs. Do not participate with teachers and students in classroom. They are uninterested and overwhelmed by what goes on in class. They may not even want to attend class.
6. **Participant Style:** Participant learners are eager to learn and enjoy classroom activities and discussion. They took responsibility for their learning, and are eager to do as much class work as possible. They are highly motivated to meet the teachers' expectations. They are good citizen in class. Enjoy going to class and take part in as much of the course activities as possible. Typically, they are eager to do as much of the required and optional course requirements as they can.

REVIEW OF RELATED LITERATURE

Aggarwal (1987), conducted a study to compare the learning styles of high creative and low creative students at +2 stage belonging to different types of institutions. A self-prepared learning style tool was used. A descriptive survey method was used. Results showed that the high creative students were found having flexible learning style, visual learning style, field independent learning style, and environment oriented learning style as compared to low creative students, who preferred non-flexible learning style, aural learning style, field dependent learning style, and environment free learning style. High and low creative students in all were found having preferred individualistic v/s non-individualistic learning style; short attention span v/s long attention span learning style and motivation centred v/s motivation non-centred learning style equally.

Verma, (1992), studied achievement, motivation, anxiety and learning style in relation to ecological variables like age, gender, caste, residence and SES of parents. Gender made differences in achievement, motivation and anxiety, residence in learning style and parent's educational level in motivation.

Gunawardena, Jayatilleke and Lekamge (1996), studied on 'Learning styles of the Open University students of Sri Lanka. The learning style that emerged as the dominant style in the entire population consisting of both B.Sc. & PGDE students was that of Assimilator. This was followed by both the converger and Diverger learning styles. The least frequent style was that of accommodator. The pattern is similar for both males & females.

Stemler (1997), while working in the area recommended that learner control in multimedia should be designed to accommodate the different abilities and styles of learners.

Diaz and Cartnal (1999) had done a comparison between student learning styles in online distance learning & an equivalent on-campus-class. In this study GRSLSS was used as a tool. Correlational analysis revealed that on-campus students displayed collaborative tendencies that were positively related to their needs to be competitive and to be good class citizens. Thus, on-campus students appeared to favour collaborative styles to the extent that it helped them to obtain the rewards of the class. In contrast, online students were willing and able to embrace collaborative teaching styles if the instructor made it clear that this was expected, and gave them form and guidance for meeting this expectation. Online students appeared to be driven more by intrinsic motives and clearly not by the reward structure of the class. Local health education students enrolled in an online class are likely to have different learning styles than equivalent on-campus students. Online students were more independent and on-campus students more dependent, in their styles as learners. The on-campus students seemed to match the profile of traditional students who are willing to work in class provided they could obtain rewards for working with others, and for meeting teacher expectations. Online students appeared to be driven more by intrinsic motives and clearly not by the reward structure of the class.

Bates and Leary (2001), in their paper supporting a range of learning styles using a Taxonomy-based Design Framework Approach, share the result of a UK research programme evaluating computer based learning software and determine its suitability in supporting the different learning styles of users. Design taxonomy is proposed as that helps designers build software to target multiple specific learning styles.

Hede and Hede (2002), in their research mentioned that providing multiple views of the same information in multimedia to cater to the different styles of learning, and utilization of variety of media types which permits information to be presented in ways that allow learner to focus on materials that support their particular style of learning are some of the alternatives available for multimedia designer.

Bureck, Malmstrom and Peppers (2003), compared 13 students in the online section versus 16 in the face-to-face section of a computer science course and found significant difference in learning styles between online students (tended to have the converger learning style) and their traditional counterparts (were more likely to have the assimilator leaning style).

Felder and Brent (2005), suggested that assessing the learning style profile of a class with an instrument such as the Myers- Briggs Type Indicator, the Kolb Learning Style Inventory, or the Index of Learning Styles without being overly concerned about which students have which preferences- can provide additional support for effective instructional design.

Manochehr (2006), compared online learning versus traditional instructor-

based learning, based on students learning styles, and showed that the learning style in traditional learning was irrelevant but in online learning it was very important. Students with learning styles assimilator and converger did better with the online learning method while students with learning styles, Accommodator and Diverger received better results with traditional instructor -based learning.

From the above references it is observed that most of the learning styles are co-relational type. Learning styles have been compared with instructional methods, teaching styles, achievement of pupils in general and in particular with content area. Gender has also been a variable in some studies. Thus, almost all of the researches are related to learning, classroom, and pupil's characteristics and teacher's instructional mode. It is also observed that no study has been conducted on the learning style of B.Ed. students of open universities of Indian subcontinent. The present study is a humble attempt to explore different learning styles of students coming from different institutions. The investigators are very much hopeful that it would contribute significantly to the existing knowledge regarding the learners, study behaviour and style of learning, adopted by distance mode students in India.

NEED AND SIGNIFICANCE

The B.Ed. programme offered by IGNOU is of innovative nature. It incorporates self-instructional material and information technology along with interactive personal contact programmes. It aims at developing understanding and competencies required by practicing teachers for effective teaching-learning process at the secondary stage. The programme is essentially a judicious mix of theoretical and practical courses to develop the practicing teacher's knowledge, skills, understanding and attitudes. Illustrations and cases of relevant situations and need-based activities comprise the core of each course of the programme. Messick (1976) writes, "...that differences in style of learning and thinking also require the attention of educators & researchers. Concern about differences in prior learning and achievement and in level of social and cognitive development is not enough. We must move beyond these differences in context and level of learning to more suitable differences in the process of cognition and creative thinking to find effective basis for individualized education." It seems quite evident that students may be effectively characterized in terms of learning styles. Learning styles encompass the perceptual as well as intellectual functioning of a learner comprehensively. A study on learning styles shall facilitate understanding various process issues in teaching -learning process of distance education. Such a study will help in determining the methods of teaching that are more effective for distance learners with varied cognitive characteristics.

OBJECTIVES OF THE STUDY

The objectives of this study are:

1. To study the pattern of Learning Styles of Open-Distance mode B.Ed. students of IGNOU.
2. To study the relationship between different learning styles and response patterns of B.Ed. students of IGNOU.

HYPOTHESES OF THE STUDY

The hypotheses of the study are stated in null form

1. Response patterns of students and independent and dependent learning styles are not significantly associated with each other.
2. Response patterns of students and avoidant and participant learning styles are not significantly associated with each other.
3. Response patterns of students and collaborative and competitive learning styles are not significantly associated with each other.

RESEARCH METHODOLOGY

A Descriptive survey method was used in this study.

PURPOSE POPULATION AND SAMPLE

Population of the study consisted of all the second year B.Ed. trainees enrolled in programme study centres of IGNOU in Uttar Pradesh. 150 final year B.Ed. trainees were selected by purposive sampling method. Two programme study centres of IGNOU viz. Ewing Christian College, Allahabad & R.B.D. College, Bijnore were selected for data collection purpose (75 trainees from each study centre). The Data were collected from the sample respondents available in the programme study centre's towards completions of second year programme.

TOOL USED

Grasha-Reichmann Learning Style Scale (GRLSS) (1996) was used to determine the Learning Style of learners of B.Ed. course of IGNOU. It was developed by Grasha-Riechmann (1996) and it is applicable for high school and college level students. The kind of interaction of students with their teachers and peer groups or friends are part of the learning style dimension of this inventory. It focuses more on students' preferences for the learning environment. The questionnaire is a 60 item self-evaluation inventory scored using a 5-point Likert scale, with the average score for each style ranked according to its percentile position in comparison with the general norm.

The validity of the inventory is good and reliability is medium. GRSLSS's

reliability is high in the competitive dimension and average in the other dimensions. Grasha-Riechmann learning style is based on the social interaction model. In this learning style, there are three dimensions related to the social interaction in the classroom: learners' attitudes and decisions about learning, learners' opinions about their teachers, and learners' reactions about the methods used in the learning. Diaz and Carnal (1999) argued that in determining the learning preferences of learners in higher educational level, Grasha-Reichmann learning styles were the most appropriate tools and they also related this situation to various reasons. First, Grasha-Reichmann learning style is one of the few tools that were developed to determine learning styles of learners in higher educational level. Second, Grasha-Reichmann learning styles focus on learner-teacher, learner-learner, and learner-content interactions. Also Grasha-Reichmann learning styles pay attention to needs of learners, assist instructional designs and curriculum development activities, and help in the creation of optimal teaching-learning environment.

DATA ANALYSIS

Learning Styles of trainees were determined accordingly to GRLSS scale. Percentage analysis of the different learning styles and weightage given to each are represented in Table 1 and graphically represented in Figure 1.

Table 1

Percentage Analysis and Rank of the Different Learning Styles.

S.No.	ITEM	WEIGHTAGE	PERCENTAGE (%)	RANK
1.	Collaborative Learning Style	43.53	87.00	I
2.	Participant Learning Style	41.93	83.80	II
3.	Independent Learning Style	41.83	83.60	III
4.	Dependent Learning Style	40.28	80.60	IV
5.	Competitive Learning Style	35.87	71.80	V
6.	Avoidant Learning Style	23.27	46.60	VI

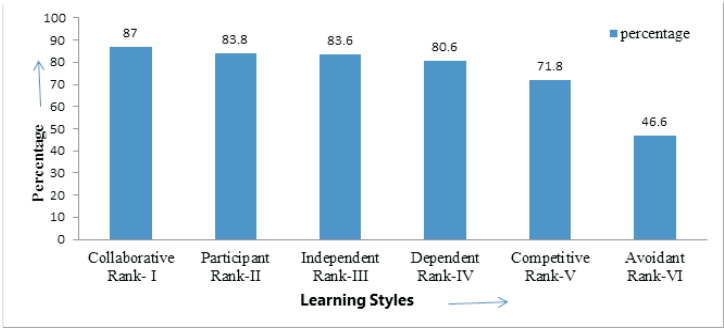


Figure 1 Ranking of Learning Styles Adopted by IGNOU B.Ed. Students

It can be observed from Table 1 and Figure 1 that a large majority of students of ODL mode (71.8% to 87%) were found to be adopt collaborative learning style, participant learning style, independent learning style, dependent learning style, and competitive learning style in order. Very less number of students were of avoidant learning style nature (46.6%). While three learning styles viz. collaborative, participant and independent learning style were adopted by a large segment of students (83.6 to 87%). Other learning styles like dependent and competitive nature also co-existed among ODL mode students. As a whole it can be interpreted that mainly the ODL mode students of B.Ed. programme made use of different practices, which were of collaborative and participant nature. They were also of independent nature in adopting different kinds of learning tasks or learning experiences provided by IGNOU. At the same time they were also dependent on different learning resources provided by IGNOU and they adopted Competitive spirit in different kinds of instructional practices. As a whole a large majority of students were found to be of very active learners and thus did not adopt avoidant learning style.

In the next section, the findings have been discussed on the nature of response patterns towards different kinds of learning styles.

Table 2

χ^2 Test of Independence Between Independent and Dependent Learning Styles and Response Pattern of ODL Mode B.Ed. Students.

VARIABLE		Weightage		Total	χ^2
		High	Moderate		
Learning Style	Independent	129 (86.00)	21 (14.00)	150 (100)	28.43**
	Dependent	76 (50.67)	74 (49.33)	150 (100)	
Total		205	95	300	

Note: ** = Significant at .01 level. Figures in Parenthesis indicate percentages.

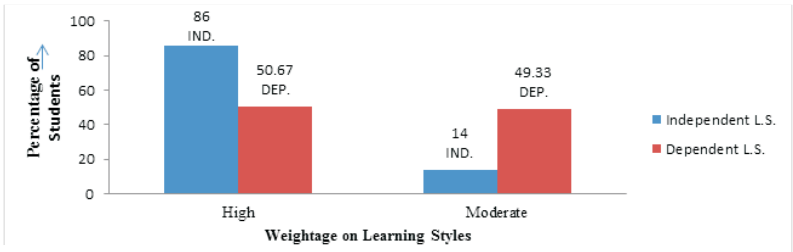


Figure 2 Independent and Dependent Learning styles of ODL mode B.Ed. Students

It can be noticed from Table 2 and Figure 2 that the calculated χ^2 value of independence between response pattern of B.Ed. trainees and the learning styles is found 28.43. The obtained value was greater than the table value (6.635) at 0.01 level of significance with one df. The observed value was found significant at 0.01 level. Hence the response pattern of B.Ed. trainees and Learning Styles were found associated with each other. In other words the percentages of students with independent and dependent learning styles were found to be different from each other. Independent learning style students were found to be significantly larger than that of dependent learning style among distance mode B.Ed. trainees.

Table 3

χ^2 Test of Independence Between Avoidant and Participant Learning Styles and Response Pattern of ODL Mode B.Ed. Students.

VARIABLE		Weightage		Total	χ^2
		High	Moderate		
Learning Style	Avoidant	12 (08)	138 (92)	150 (100)	56.54**
	Participant	87 (58)	63 (42)	150 (100)	
Total		99	201	300	

Note: ** = Significant at .01 level. Figures in Parenthesis indicate percentages.

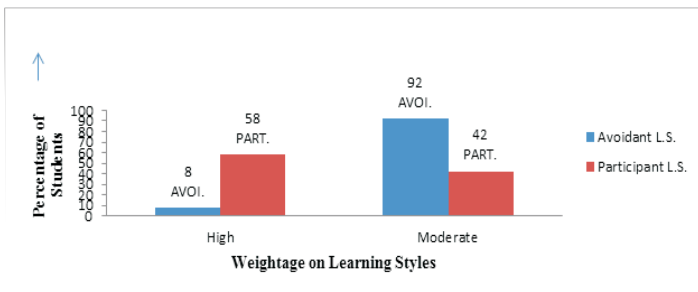


Figure 3 Avoidant and Participant Learning Styles of ODL mode B.Ed. Students

It can be noticed from Table 3 and Figure 3 that the calculated χ^2 value of independence between response pattern of B.Ed. trainees and the learning styles was found 56.54. The obtained value was greater than the table value (6.635) at .01 level of significance with one df. The observed value was found significant. Hence the response pattern of B.Ed. trainees and learning styles are associated with each other. In other words the percentage of students with avoidant and participant learning styles were found to be of different categories. Participant learning style students were found to be significantly larger than that of avoidant learning style among distance mode B.Ed. trainees.

Table 4

χ^2 Test of Independence Between Collaborative and Competitive Learning Styles and Response Pattern of ODL Mode B.Ed. Students.

VARIABLE		Weightage		Total	χ^2
		High	Moderate		
Learning Style	Collaborative	140 (93.33)	10 (6.67)	150 (100)	0.73 N.S.
	Competitive	135 (90.00)	15 (10.00)	150 (100)	
Total		275	25	300	

Note: N.S. = Not Significant. Figures in Parenthesis indicate percentages.

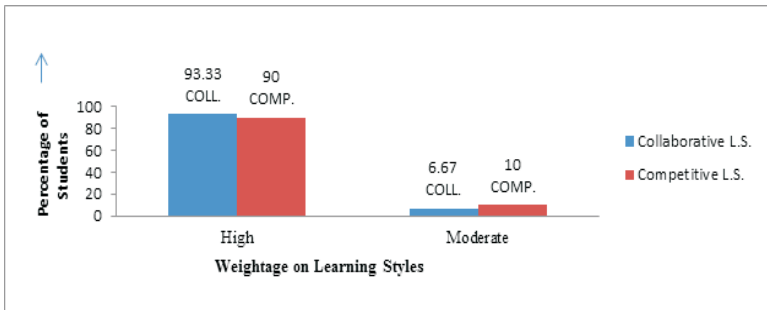


Figure 4 Collaborative and Competitive Learning styles of ODL Modes B.Ed. Students

It can be noticed from Table 4 and Figure 4 that the calculated χ^2 value of independence between response patterns of B.Ed. trainees and the learning styles was found 0.73. The obtained value was less than the table value (6.635) at .01 level of significance with one df. The observed value was not found significant. Hence the response pattern of B.Ed. trainees and Learning Styles were not associated with collaborative and competitive learning styles. In other words the percentage of students with collaborative and competitive learning styles was found to be of similar nature. Collaborative learning style students were found to be approximately similar to that of competitive

learning style student background. It can be observed from Figure 4 that collaborative learning style students (93.33%) were found to be approximately same as that of competitive learning style (90.00%) students. It can be said that the distance learners were of both collaborative as well as competitive nature.

CONCLUSION

The study revealed that basically distance learners are of independent nature. However they adopted collaborative and participant behaviour in different kinds of instructional practices organized at study centre level, as well as at their own practicing schools. At the same time they were also dependent on various learning resources provided by IGNOU in the form of study materials, lectures, workshops and supervisors/mentors. Examination orientations also make them competitive in nature. Even though higher percentages of students were adopting positive learning styles, competitions in instructional practices were visible among ODL mode students. A large majority of students were very active participants in their study. However, a significant number of students were found to be of avoidant nature, which needs to be tackled through learning support services. Appropriate instructional support should be provided for strengthening active participation of ODL mode students in various kinds of instructional practices and self-learning process. The results regarding interrelationship between response patterns and learning styles revealed that the response patterns of independent learning style towards dependent learning style was significantly different from that of dependent learning style. Independent learning style students got higher weightage than that of their dependent learning style counterparts. The weightage towards participant learning style were of higher percentage than that avoidant learning style students. It indicates that large numbers of students were adopting participant learning style, whereas very less number of students adopted avoidant learning style. Even though the distance learners adopted collaborative learning style in different kinds of learning situations, they revealed competitive behaviour patterns in their studies. This is mainly due to student's orientation towards securing better grades and ranks in examinations. The study revealed that different kinds of learning styles co-existed among ODL mode B.Ed. trainees. Further studies should be conducted to study the impact of different instructional variables and background factors on learning styles of ODL mode students of different programmes.

REFERENCES

Agarwal, S. C. (1987). Learning styles among creative students. Allahabad: Central publishing House.

- Baykul, Y., Gürsel, M., Sulak, H., et al. (2010). A Validity and Reliability Study of Grasha-Riechmann Student Learning Style Scale. *International Journal of Human and Social Sciences* 5:3 2010. Retrieved April 08, 2013, from <http://www.waset.org/journals/ijhss/v5/v5-3-26.pdf>.
- Diaz, D.P., & Cartanal, R.B. (1999). Comparing Student Learning Styles in an Online Distance Learning Class and an Equivalent On-Campus Class. Retrieved April 08, 2013, from http://home.earthlink.net/~davidpdiaz/LTS/html_docs/grslss.htm.
- Garg, S., Panda, S., Murthy, C.R.K., & Mishra, S. (Eds.) (2006). *Open and Distance Education in global environment*. New Delhi: Viva Books Private Limited.
- Gunawardena, C. N., Jayatilleke, B. G., & Lekamge, G. D. (n.d.) Learning Styles of the Open University Students of Sri Lanka pp. 115-120. Retrieved April 8, 2013, from <http://www.jstor.org/stable/30220148>.
- Jain, M.K., & Aggarwal, J.C. (Eds.) (2008). *Development of Education System in India*. Encyclopedia of Education. Vol.(1). Delhi: Anshah publishing House.
- Kumar, S. (2011). *A study of Process of B.Ed. Programmes in Open Universities*. (Doctoral dissertation, University of Allahabad).
- Rai, P.N. (1999). *Research Introduction*. Agra: Lakshmi Narayan Agarwal Publication.
- Sahoo, P.K. (1994). *Open Learning System*. New Delhi: Uppal Publication.
- Sahoo, P.K. (1999). *Educational Technology in Distance Education*. New Delhi: Aravalli Publication.
- Sahoo, P.K., et al. (1999). *Case study of B.Ed. Programme of Kota Open University*. New Delhi: IGNOU, UNESCO chair project.
- Satyanaryan, R. (2004). *Student- Support Services and Open learning in an Open University*, New Delhi: Mittal Publication.
- Shastree, N.K. (2009). Bringing world closer: open and distance education system. *New Delhi: Association of Indian Universities. University News*, 47(19) May 11-17, 2009. pp. 16-23.
- Singh, M. (2011). *A study of impact of educational television on learning style and students achievement*. (M.Ed. dissertation, University of Allahabad).
- Thomas, P., & Logan, K. (2002). Learning Styles in Distance Education Students Learning to Program. 14th Workshop of the Psychology of Programming Interest Group, Brunel University, June 2002, www.ppig.org. In J. Kuljis, L. Baldwin & R. Scoble (Eds). *Proc. PPIG* 14 pp. 29-44. Retrieved April 08, 2013, from <http://www.ppig.org/papers/14th-logan.pdf>.
- Yadav, R.S. (2005). *Encyclopedic Dictionary of Education*. New Delhi: Shri Sai Printographers.