

The Perception of B.Ed. Students on Printed Self-Learning Material and Learning Style in ODL

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Abstract: *The present study discusses the perception of B.Ed. students of the Indira Gandhi National Open University (IGNOU) on self learning print materials (SLMs) and their learning style in Open and Distance Learning (ODL) system. 100 B.Ed. students (50 male and 50 female) were selected purposively from the Delhi Region who had enrolled in the B.Ed. programme of IGNOU in January 2011 and January 2012 sessions. Descriptive survey method has been employed to conduct the present study. Two separate questionnaires based on 5-point rating scales: one on perception of students on SLM, and the other on learning style of students in ODL have been used to collect the data. The data was analysed by using both parametric and non-parametric statistics. The study found a strong positive correlation (0.57) among the scores of students in their perception on SLM and learning style. No significant difference was observed between the male and female students both in their scores in learning style as well as, on the perception scale. The teaching experience of the students did not influence either their learning style or perception. The number of male and female students who had scored above or below the desired average scores either in the scale of learning style in ODL or in their perception on SLM did not differ significantly.*

Keywords: Open and distance learning (ODL), Self-learning material (SLM), Course team model, Bachelor of education (B.Ed.), Indira Gandhi National Open University (IGNOU)

Introduction

Two systems of education prevail in most of the countries of the world. One is the conventional system of education and the other is the Open and Distance Learning (ODL) system. Keeping in view the learning needs of emerging the world over, the ODL system is becoming more popular. Though the aims of both the education systems are similar, but the operations, media used, curriculum development, teaching/learning transaction and philosophy in the ODL system differs from the conventional system of education. Therefore, no comparisons can be made between both the systems of education as they have their own strengths and weaknesses.

In the conventional system, teaching-learning deliberations are made face-to-face in a classroom situation. Students discuss their problems by direct interaction with the teachers and the peers, whereas in ODL, a well defined system works in which the teachers, learners, counsellors, and other supporting staff work at a distance. In this system, students are provided self-learning material and learning support services for facilitating

their study. Information and Communication Technology (ICT) plays a crucial role in the ODL system for transacting curriculum. Students clarify their doubts and understand learning concepts by participating in teleconferencing, interactive radio counselling, and also share their views online with the teachers and academic counsellors. Besides, face-to-face interaction is also another part of the ODL system. During the week-ends and the vacation period, students interact with academic counsellors at their study centers and share their learning difficulties with counsellor and peer group and resolve other academic issues. Workshops, vivid laboratory and computer related activities are also organised in practical-oriented and professional courses.

Though various academic activities are organised in the ODL system, still, the printed Self Learning Material (SLM) plays a vital role for transacting the curriculum. An equivalence to classroom teaching (the foremost role of the teacher) at the open universities is undoubtedly development of (or teaching through) SLMs; all other tasks centre around this main task (Gunawardene, 1992; Olcott and Wright, 1995). Developing quality SLM for distance learners is a challenge. The style of writing, language use, activity and self assessment, and interactivity makes the material learner friendly. The learners enjoy reading the material and the interactivity of the printed SLM provide them a feeling of being taught by an invisible teacher. A variety of course development models have been adopted by distance teaching universities. The most commonly adopted one is the course team (CT) model, followed at the Open University (UK), Athabasca University (Canada), and Deakin University (Australia). The CT model comprises academics (subject experts), media experts, educational technologists, editors, graphic designers, counsellors, course coordinators, and writers with varying levels of responsibilities (Garg et al., 2006). IGNOU also follows the CT model with specifically coordinator-writer-editor model, non-IGNOU editor-coordinator model, in-house faculty model, and collaborative workshop model (Panda, 2000 & 2006) for developing SLM.

The end users of the material are the learners pursuing their study at a distance. In this study, the perception of learners on SLM has been analysed and discussed. The learning style of the students in ODL is also another aspect which has been dealt within this paper.

Review of Literature

Many studies have been conducted on the development of SLM, its interactivity and style of writing, and the user comments and learning style. Let us review, a few major studies related to the present research study.

Sparkes (1998) suggests that learners may take any approach to learning, to some extent as a matter of preference and to some extent dependent on the task at hand. Some learners by their approach and style are holistic learners (like to take an overview of a subject first and then fill in the details and concepts in their own way), some learners are aerialists (need step-by-step guidance), some are visualisers, verbalisers, and doers. With a typical mix of learners, attempts should be made to serve each preferred learning style in the ODL system. Isman (2004) reported that the learning style and the role of the students in distance education based upon the constructivist approach are: (i) learners use appropriate technology to interact collaboratively with each other and the teacher, and use feedback

and consultation to develop and refine their knowledge, skills, and attitudes; (ii) learn to solve problems through assessment, data collection, and developing and implementing strategies using relevant information; and (iii) promote life-long learning and know how to access and use information. Studying the learning style of IGNOU B.Ed. students, Sahoo and Chandra (2013) reported that, 'a large majority of learners of the ODL mode were found to be adopting collaborative, participant, dependent, and competitive learning styles. The response patterns and learning styles of B.Ed. trainees were found associated with each other. Learners with an independent learning style were found to be significantly large in numbers than those with a dependent style while the number of learners with participant learning style were found to be significantly larger than those with an avoidant style among distance mode B.Ed. trainees. The number of learners with a collaborative style were found to be approximately the same as the learners with competitive learning style'. Petersen (2004) stated that, 'it is best to go for a combination of learning methods (blended learning). It encourages the learner's learning and minimises the risk of dropouts. Both the teacher and the learner are challenged in ODL by new roles, functions and tasks they need to perform. In ODL, teachers have to be clear in their goals and methods when developing learning material and learners have to take more responsibility for their learning. It takes time for the learner to learn in this environment'.

Ojo and Olakulehin (2006) while studying 'attitude and perception of students to open and distance learning in Nigeria' reported that the 'study material received in ODL is of better quality than the lecture notes received in the conventional system (55 per cent)', and 'the material provided in ODL is self-sufficient for the study of the students (81.7 per cent)'. In a study on 'How Do Distance Learners Perceive the Role of Objectives in Self-Learning Materials?', Mishra (2005) found that the learners 'indicated their strong preference for use of objectives in the study material that corroborates the views of instructional designers and course writers on objectives in study materials', 'the learners were aware of the importance of objectives in their learning process and read them frequently though not always before assessment tasks', and 'learners use objectives as a measure of their understanding of the study materials, and consider it as a motivator to learn'. In an other study, Mishra and Gaba (1999) investigated the 'use of activities in self-learning materials by distance learners'. The result revealed that 'learners use activities heavily and depend on them as facilitators of learning. They use the open space, objectives, introduction, structure, etc. provided in the self-learning materials'. In a study conducted by Essel et al., (2005), on 'Effect of Distance Learner-Perception of Course Materials on Access to Learning for Professional Development', reported that, content of the course helps the learners acquire relevant knowledge (82 per cent), examples cited in the SLM were familiar (83 per cent), assessment activities were easy to understand (61 per cent) and helped them in learning (78 per cent), programme material has been designed in a clear and helpful manner (55 per cent), activities in the course book were well structured (59 per cent), the language used in the course material was clear, easy and appropriate (64 per cent), and learners were able to use their experience in learning (92 per cent). Contradicting this, Osei (2010), reported that 'the major concerns in ODL and SLM, however, were regarding the provision of prompt feedback on assignments by facilitators, lack of enough study facilities to help students with their programme and difficulty they experienced with learning materials that were not self explanatory. Addressing these concerns will improve students' distance learning experiences and enhance students learning through/via distance'.

To sum up the review of related studies, it can be stated that development of self-learning material is a challenging task for any teacher. The learners in the ODL system who use this material for their study also exhibit various styles of learning for completing this task. The perception of learners about SLM shed light on the way curriculum is designed and SLMs are developed. To get an insight into the concept an attempt has been made in this study to investigate the 'perception on self-learning material and learning style of B.Ed. distance learners.

Rationale of the Study

The ODL system is a most viable alternative to the conventional system of education. The suitability and quality of both the systems of education is a debatable issue. Keeping in view time, space, speed, pace, and convenience, the ODL system is more popular these days. The popularity of the ODL system is not only because it satisfies the needs of the learners with regard to time, space, speed and convenience but also because quality education is delivered/made accessible to the learners. Reporting on 'perspectives of quality distance education', Chaudhary (2006) stated that 'quality dimension of ODL system is more complex as it requires an integration of a large number of activities, processes and operations. Various academic and administrative units are involved in teaching, learning and evaluation. The ODL system, therefore, has to commit itself in maintaining high quality in pedagogy, content development as well as providing learner support services'.

As discussed earlier, the main task of any distance education institute is to develop quality self-learning material (Gunawardena, 1992; Olcott and Wright, 1995) and the SLM is the prime medium of instruction supported by other means of communication. Distance Education teachers claim that the SLM developed by them and supplied to the students are comprehensive, interactive, activity-based, self-pacing and self-assessing, and pedagogically sound. However, to maintain the quality of the SLMs, it is necessary to collect feedback periodically from the main stakeholders (learners) to assess the effectiveness of SLMs.

The learning style varies significantly from learner to learner. Though the basics of learning remain the same, the nature of practices, habits, preparation for exam, reading and writing content points, self-assessment, practice of activities, and referring to other materials are differ from learner to learner (Dey, 2013). As far as the learning style in ODL is concerned, a majority of the B.Ed. learners of the ODL mode, adopt collaborative, participant, dependent, and competitive learning styles (Sahoo and Chandra, 2013). For minimising the risk of dropouts, and encouraging learning, Petersen (2004), suggested, using a combination of learning methods (blended approach) in ODL. B.Ed. is a professional teacher education programme, where varieties of methods and modes such as, learning from the SLM, practice the activities, check the progress, practice of teaching and supervising teaching, conduct of school and workshop-based practicals, face-to-face contact, preparation of records, reports, projects, attending teleconferencing, interactive radio counselling, etc. are used to facilitate the teaching-learning process.

To conclude, it can be said that the perception of the ODL students on SLM and their learning style needs to be studied. The present study was conducted considering it to be the need of the hour.

Statement of the problem

“Perception of B.Ed. Students on Printed Self-Learning Material and Learning Style in ODL”

Operational definition of terms used

Terms used in the study are operationally defined as follows:

Self-learning material: It is a type of learning material specially designed and prepared for autonomous learning and self-assessment by the students enrolled in an academic programme in an ODL institute. In the present study, printed learning materials developed and supplied to IGNOU B.Ed. learners are termed as SLM.

Perception on SLM: In the present study, perception on SLM is defined as the attitude towards materials and style of use of SLMs by IGNOU B.Ed. learners.

Learning style: In the present study, learning style is defined as the nature and style of the learning practices of the B.Ed. learners. It may be defined as habit of reading the SLM, checking one’s own progress, conducting the given activities, using marginal space for writing important points, summarising the concept studied, etc.

B.Ed. learners in ODL: In the present study, the B.Ed. learners are those who are enrolled in the Bachelor of Education Programme offered through ODL mode by the Indira Gandhi National Open University.

Units and Blocks: A Unit/Block is a small part of a programme. If we analyse the constituent of a Unit/Block in a programme; it can be said that the Units are included in a Block, Blocks are included in a Course, and Courses are included in a Programme.

Delimitation of the study

- The present study is delimited to those IGNOU B.Ed. students only who have enrolled in the January, 2011 and 2012 sessions in the Delhi Region.
- The study is delimited to a purposive sample of 100 students.

Objectives

Objectives of the present study were:

- 1) to study the learning styles of learners pursuing their B.Ed. programme through the ODL system;
- 2) to study the difference between the scores of the learners with varied teaching experiences vis-a-vis their learning style;
- 3) to study the difference between the scores of the male and female learners vis-a-vis their learning style;
- 4) to study the perception of the learners on the printed SLM;
- 5) to study the difference between the scores of the learners with varied teaching experience on their perception of the printed SLM;
- 6) to study the difference between the scores of the male and female learners on their perception on the printed SLM;

- 7) to study the relationship between the scores of learning style and perception of the learners on the printed SLM;
- 8) to study few male and female learners scored above and below the average score through their learning style; and
- 9) to study few male and female learners scored above and below the average score through their perception on the printed SLM.

Hypotheses

- H₀₂: There is no significant difference between the scores of learners with five years and more than five years of teaching experience on their learning style.
- H₀₃: There is no significant difference between the scores of the male and female learners on their learning style.
- H₀₅: There is no significant difference between the scores of the learners with five years and more than five years of teaching experience on their perception of the SLM.
- H₀₆: There is no significant difference between the scores of the male and female learners on their perception of the SLM.
- H₇: There is positive correlation between the scores of learning style and perception of the learners on SLM.
- H₀₈: There is no significant difference between the number of male and female learners in their scores (above or below the desired average scores) in their learning style in ODL.
- H₀₉: There is no significant difference between the number of male and female learners in their scores (above or below the desired average scores) in their perception on the SLM.

Research Design

Research method

The descriptive survey method has been employed in this study. The researcher visited the respondents and administered the tests for collection of data. Data has been analysed by using both parametric and non-parametric statistical methods. The data has been placed in tabular and graphical forms for characterising the units of the data and its interpretation. On the basis of the objectives and the hypotheses, data has been analysed, interpreted and discussed.

Population

All those B.Ed. learners who were enrolled with the Indira Gandhi National Open University in the January 2011 and 2012 sessions in the Delhi Region were, the population of the study.

Sample

100 learners selected purposively for the study constituted the sample of the study. The ratio of male and female learners was 1:1 (50 male+50 female).

Tools used for data collection

For measuring perception on self learning materials and learning style of the B.Ed. students, structured questionnaires based on five point likert type rating scale have been used. The scale points were Strongly Agree (SA), Agree (A), Un-Decided (UD), Disagree (D), and Strongly Disagree (SD). Both positive and negative items are there in both the questionnaires. For scoring the positive items: The scores assigned to SA, A, UD, D, and SD are respectively 5, 4, 3, 2, & 1, and the reverse in case of negative items.

The total items in the perception questionnaire are 26 and in the learning style are 20. The highest score in the perception can be 130 and the lowest score can be 26 and in the learning style, the highest score can be 100 and the lowest score can be 20. The average desirable score for the questionnaire of perception on SLM will be 78 and the average desirable learning style in ODL score will be 60. Both the questionnaires were developed by the researcher and carefully modified by the experts in the concerned field. For understanding the operation of the tools, it was carefully tried out with a small sample of ODL B.Ed. learners.

Statistical techniques

Both parametric and non-parametric statistics have been used to analyse the data. Frequency count and percentage, measures of central tendency, measures of variability, product moment correlation, *t*-test, and chi-square test have been used for analysing the data.

Data Analysis and Interpretation

The demographic characterisations of the subject selected are as follows:

Table 1. Profile of the learners (in percentage)

Male				Female			
Enrollment		Education		Enrollment		Education	
2011	2012	UG	PG	2011	2012	UG	PG
14	36	16	34	11	39	14	36
Experience				Experience			
Up to 5 Years		Above 5 Years		Up to 5 years		Above 5 years	
30		20		25		25	

Table 1 showed that, out of the total sample (100) collected, 30 per cent learners were undergraduates and 70 per cent learners were postgraduates. Among them 55 per cent learners had up to five years of teaching experience and the rest 45 per cent had more than five years of teaching experience.

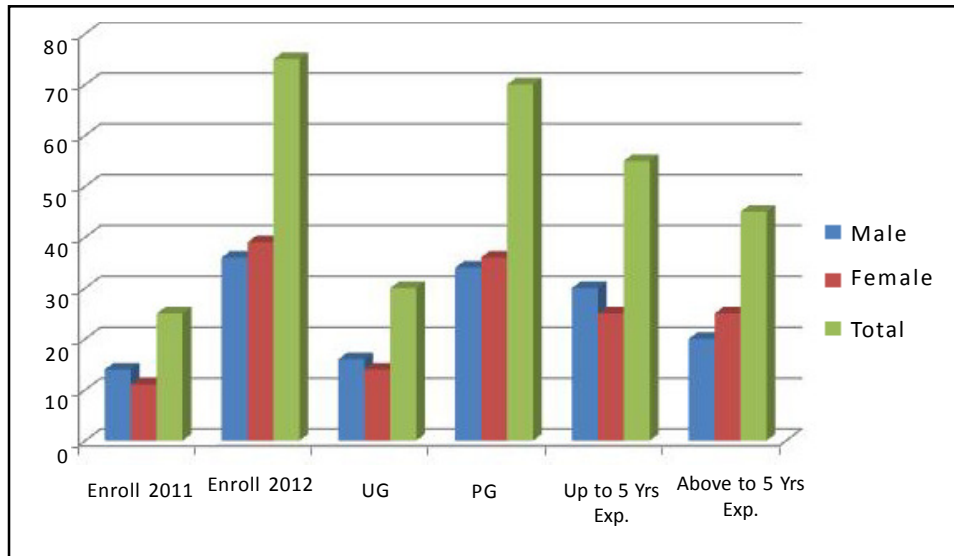


Figure 1. Profile of the learners (in percentage)

Table 2. Use of print SLM by the learners (in percentage)

SN	Items	Responses				
1	Frequency of reading SLM	Everyday	Once/twice a week	Whenever they get time	Before the TEE*	Rarely
	Response	3	13	64	18	2
2	SLM was	Easy and simple	Average difficulty	Difficult and complex	Confusing and ambiguous	
	Response	38	40	16	6	
3	Most interesting part of the SLM	Introduction	Content organisation	Check your progress	Activity	Let us sum up
	Response	14	53	8	5	20

*TEE – Term end examination

Table 2 characterised data related to the nature and use of SLM. The analysis of data revealed that 64 per cent of learners read the SLM whenever they got time. The other two revealing facts in this item are; reading SLM just before the term end examination (18 per cent), and once/twice in a week (13 per cent). Only 3 per cent learners read it daily. Regarding the SLM; 40 per cent learners reported that it is in average difficulty standard, whereas 38 per cent learners reported that the SLM was easy and simple to read and understand. For 16 per cent respondents the SLM was difficult to comprehend. Regarding the interesting part of the SLM, 53 per cent opined content and organisation, 20 per cent let us sum up, 14 per cent to the introduction part, and 8 and 5 per cent respectively to check your progress and activity.

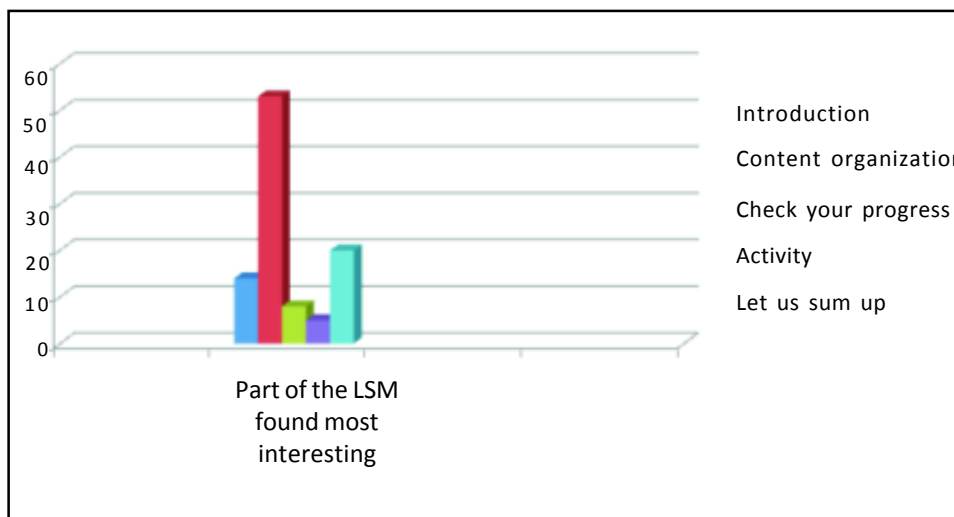
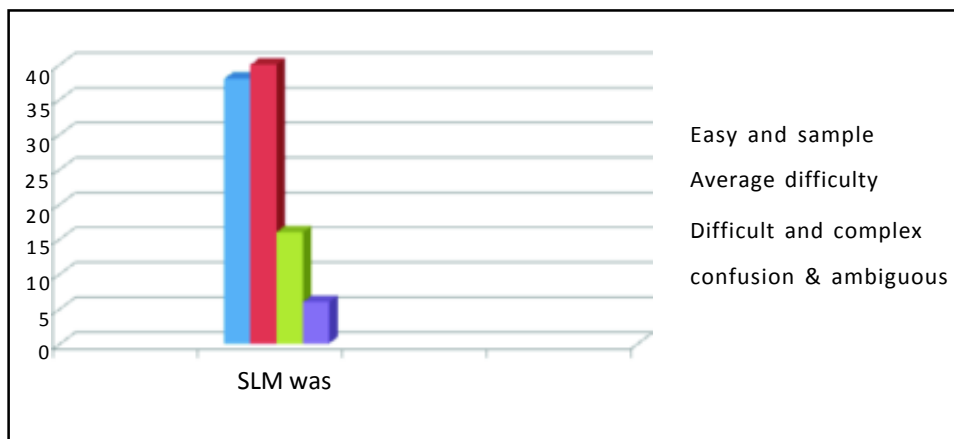
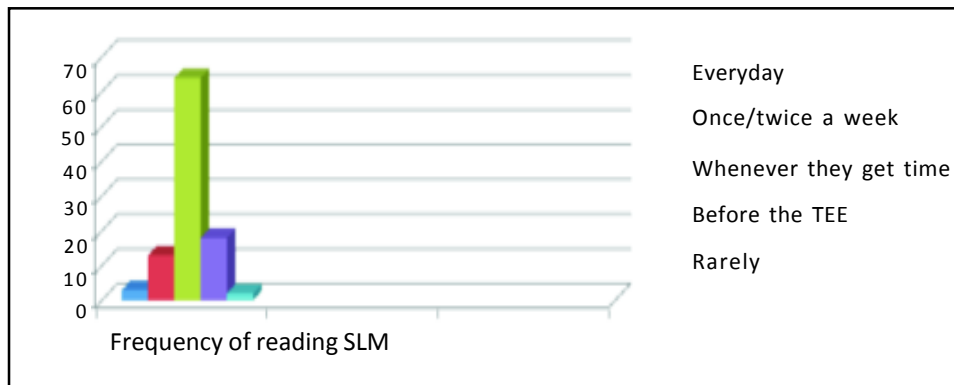


Figure 2. Use of SLM (frequency of use, difficulty level, and preferred components) by the learners (in percentage)

Table 3. Use of SLM by the learners (figures are in percentage)

Sl. No.	Item	Male		Female		Total (M & F)	
		Y(%)	N(%)	Y(%)	N(%)	Y(%)	N(%)
1.	All units in a Block are in the same style and difficulty level	48	52	50	50	49	51
2.	Thematically distribution of the Units in a Block	90	10	88	12	89	11
3.	Learner friendly structure of the Unit	88	12	84	16	86	14
4.	Alignment of the content with the objectives	98	2	98	2	98	2
5.	Logical arrangement of the sections and sub-sections of the Unit	94	6	94	6	94	6
6.	Adequacy of content coverage	74	26	72	28	73	27
7.	Referred suggested reading materials given in the Unit	54	46	52	48	53	47

Table 3 revealed that, nearly half of the learners reported that the units in a Block have been written in the same style and difficulty level. 89 per cent of learners reported that the units in a Block were thematically presented. There was no significant difference in responses among the males and females in this regard. 86 per cent learners opined that the structure of the units was learner friendly. 98 per cent learners stated that there was suitable alignment of the content with the objectives. 94 per cent learners agreed with the statement that there was logical arrangement of the sections and sub-sections of the content of a Unit. More than 70 per cent learners responded that the content coverage in the Unit was adequate. More than 50 per cent learners referred to the suggested reading materials given in the Units.

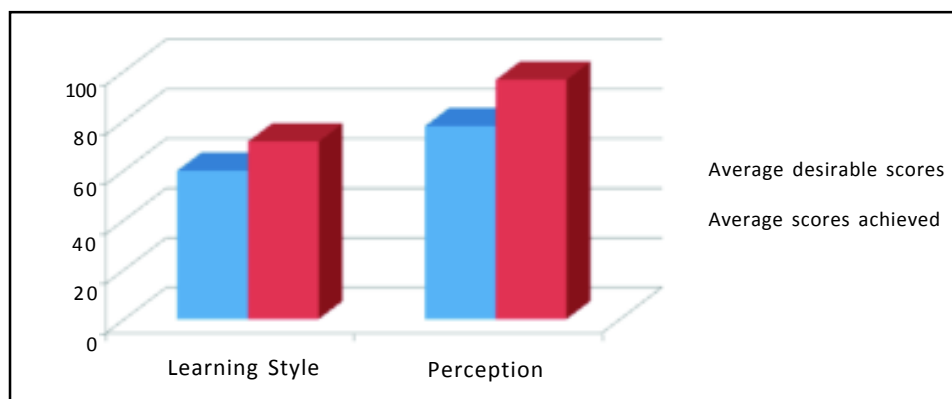
Learning Style and perception of the learners on SLM

Table 4 presented data related to Objectives 1 and 4. The scores obtained by the respondents in the scale of learning style and perception are presented in Table 4. The highest and the lowest scores in the scale of learning style were 92 and 54 respectively whereas in the scale of perception they were 125 and 65. The average scores in learning style and perception were 60 and 78 respectively. Data analysis revealed that 95 per cent learners had scored above the average in learning style and 93 per cent learners scored above the average in perception scale. The average score in learning style was 71.75, which is more than the desirable average score i.e. 60. Accordingly, the average scores of learners perception is 96.67, which is more than the desirable average score was 78. The mean scores of the learners with up to 5 years of teaching experience (scale of learning style) was 72.51 in comparison with those learners with more than 5 years teaching experience at 70.83. The observed difference of 1.68 scores may be interpreted as the fact that the learning style changes with the progression of age. But, in the scale of perception, the gap of mean scores above 5 years experienced learners (97.13) in comparison to the learners with 5 years experience (96.29) was 0.84. It reverses the earlier situation. In this case, it may be stated that the perception on SLM of the learners (on the perception scale) will rise higher with experience.

Table 4. Scores of learning style and perception of the learners on SLM

Scale	Parameters	Score	Scale	Parameters	Score		
	Highest Score	92		Highest Score	125		
	Lowest Score	54		Lowest Score	65		
	Avg. Desirable Score	60		Avg. Desirable Score	78		
	Avg. (Male)	71.7		Avg. (Male)	96.8		
	Avg. (Female)	71.8		Avg. (Female)	96.54		
	Avg. (Total)	71.75		Avg. (Total)	96.67		
	SD (Male)	7.68		SD (Male)	10.72		
	SD (Female)	8.50		SD (Female)	12.16		
	SD (Total)	8.10		SD (Total)	11.46		
Learning Style in ODL	SD, 5yrs. Exp. (Male)	6.72	Perception on SLM	SD, 5yrs Exp. (Male)	11.04		
	SD, 5yrs. Exp. (Female)	7.50		SD, 5yrs Exp. (Female)	12.01		
	SD, 5yrs Exp. (Total)	7.13		SD, 5yrs Exp. (Total)	11.49		
	Avg, 5yrs Exp. (Total)	72.51		Avg, 5yrs Exp. (Total)	96.29		
	SD, Above 5Yrs. Exp. (Male)	9.11		SD, Above 5yrs. Exp. (Male)	10.84		
	SD, Above 5yrs Exp. (Female)	9.27		SD, Above 5yrs Exp. (Female)	12.56		
	SD, Above 5yrs Exp. (Total)	9.23		SD, Above 5yrs Exp. (Total)	11.84		
	Avg, Above 5yrs Exp. (Total)	70.83		Avg, Above 5yrs Exp. (Total)	97.13		
	Learners above the average desirable score (Learning Style)			N	Learners above the average desirable score (Perception)		N
		Male		49		Male	47
	Female	46		Female	46		
Total		95	Total		93		

Abbreviations: Avg. – Average, 5yrs. – 5 Years, Exp. – Experience, and SD – Standard Deviation



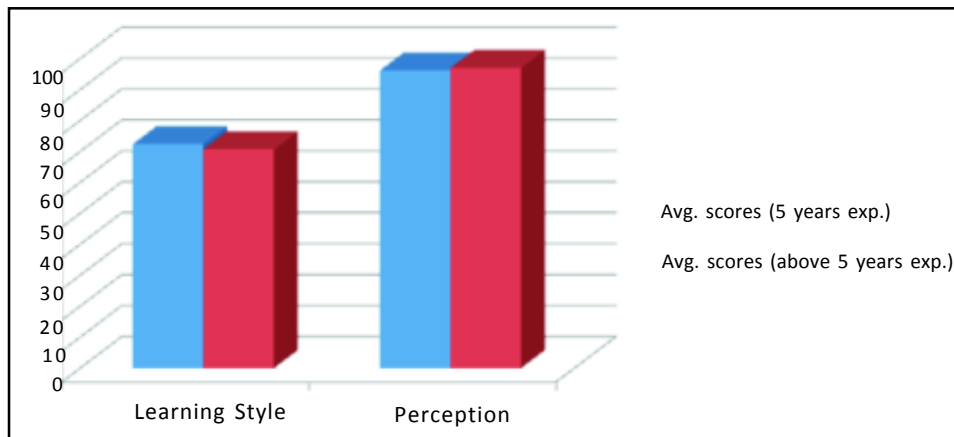


Figure 4. Average scores of learners in learning style and perception

Testing of null hypotheses

Hypotheses 2, 3, 5, and 6.

H₀₂: There is no significant difference between the scores of the learner with five years and more than five years of teaching experience on their learning style.

H₀₃: There is no significant difference between the scores of the male and female learners on their learning style.

H₀₅: There is no significant difference between the scores of the learners with five years and more of teaching experience on their perception on the SLM.

H₀₆: There is no significant difference between the scores of the male and female learners on their perception on the SLM.

Table 5. Mean, SD, and t-test values of the scales

		Learning Style		t-value	Result
Male	Female				
N	50	N	50	0.06	Not significant at .05 level with 98 df. H ₀ ₃ is accepted.
M	71.7	M	71.8	(0.06<1.98)	
SD	7.68	SD	8.50		
5 Years Exp.		Above 5 years Exp.			
N	55	N	45	1.01	Not significant at .05 level with 98 df. H ₀ ₂ is accepted.
M	72.51	M	70.82	(1.01<1.98)	
SD	7.13	SD	9.23		
		Perception			
Male	Female				
N	50	N	50	0.11	Not significant at .05 level with 98 df. H ₀ ₆ is accepted.
M	96.8	M	96.54	(0.11<1.98)	
SD	10.72	SD	12.16		
5 Years Exp.		Above 5 years Exp.			
N	55	N	45	0.36	Not significant at .05 level with 98 df. H ₀ ₅ is accepted.
M	96.29	M	97.13	(0.36<1.98)	
SD	11.49	SD	11.84		

Analysis of data given in Table 5 revealed that though there was a slight difference between the two means (1.69), this difference was not really significant. The null hypothesis was accepted at the 0.05 level of significance with 98 degrees of freedom. Thus, the B.Ed. learners with 5 years and above experience reported similar learning style in the ODL system.

A similar result also found in case of hypothesis-3. There was very little difference found between the two means (0.1), which resulted as an error difference which however, was not the case. The null hypothesis (H_0) was accepted at the 0.05 level of significance with 98 degrees of freedom. Thus the learning style in ODL system of male and female students was similar in nature.

Hypothesis-5 was also accepted at the .05 level of significance with 98 degrees of freedom. The result shows that learners with 5 and more years of experience did not differ significantly in their perception on SLMs. Both have similar type of perception.

Similar results were found in the case of hypothesis-6. There was very little difference observed between the two means (0.26), which resulted as an error difference which however, was not the case. The null hypothesis was accepted @ 0.05 level of significance with 98 degrees of freedom. In conclusion, the perception on the SLM of both male and female learners was found similar in nature.

Testing of research hypothesis

H_7 : There is a positive correlation between the scores of the learning style and perception of the learners on SLMs. To test this hypothesis, product moment correlation was calculated which is shown in Table 6.

Table 6. Product moment coefficient of correlation table of Learning Style and Perception

		X – Perception of learners on SLM											
		60-69	70-79	80-89	90-99	100-109	110-119	120-129	fy	y'	fy'	fy ²	$\Sigma x'y'$
Y- Learning Style of the students in ODL	90-99						2		2	2	4	8	4
							02						
							4						
	80-89				-1	0	1	2	16	1	16	16	3
					02	10	03	01					
					-2	0	3	2					
	70-79		0	0	0	0	0		43	0	0	0	
			02	05	11	19	06						
			0	0	0	0	0						
	60-69		3	2	1	0	-1		34	-1	-34	34	49
		05	12	12	03	02							
		15	24	12	0	-2							
50-59	8	6	4	2	0			5	-2	-10	20	20	
	01	01	01	01	01								
	8	6	4	2	0								
fx	1	8	18	26	33	13	01	100	0	-24	78	76	
x'	-4	-3	-2	-1	0	1	2	-7					
fx'	-4	-24	-36	-26	0	13	2	-75					
fx ²	16	72	72	26	0	13	4	203					
$\Sigma x'y'$	8	21	28	12	0	5	2	76					

For getting the coefficient of correlation (r), the formula of product moment coefficient correlation has been used:

$$r = (\sum x'y' / N - C_x C_y) / \sigma_x \sigma_y, \text{ where } C_x = \sum fx' / N \text{ and } C_y = \sum fy' / N$$

(Source: Garrett, 2008)

By employing the above formula, coefficient of correlation found was: $r = 0.57$. The analysis of data given in Table 6 revealed that the scores of two variables are strongly associated with each other. It means that the learning style of learners in ODL is associated with their perception towards the SLMs. Both the variables helped each other for better learning practices in ODL. So, the research hypothesis (H_7) was accepted.

Testing of frequencies

Hypotheses 8 and 9 have been stated to test the significant difference between the frequencies of the learners with scores above and below the desired average scores, in both the variables. To test hypotheses 8 and 9, chi-square test has been employed.

Table 7. Frequency table of Males and Females in their learning style and perception

Learning Style in ODL (H_8)			Perception on SLM (H_9)				
	Above desired avg. score	Below desired avg. score	Total		Above desired avg. score	Below desired avg. score	Total
Male	49 (A)	01 (B)	50 (A+B)	Male	47 (A)	03 (B)	50 (A+B)
Female	46 (C)	04 (D)	50 (C+D)	Female	46 (C)	04 (D)	50 (C+D)
Total	95 (A+C)	05 (B+D)	100 (N)	Total	93 (A+C)	07 (B+D)	100 (N)
Values	$\chi^2 = 1.89$				$\chi^2 = 0.15$		
Result	Null hypothesis accepted at .05 level of significant in df of 01. H_8 is accepted.			Null hypothesis accepted at .05 level of significant in df of 01. H_9 is accepted.			

For testing the hypothesis 8 and 9, 2 X 2 fold contingency table of chi-square formula has been used. The formula has been given below:

$$\chi^2 = N (AD - BC)^2 / (A+B) (C+D) (A+C) (B+D)$$

(Source: Garrett, 2008)

The analysis of data given in Table 7 revealed that H_8 and H_9 are accepted. It means the number of male and female learners did not differ significantly in above or below the desired average scores in their learning style in ODL and their perception towards the SLMs. Both the males and females scored similarly. The negligible difference observed in this regard was not the true difference, but it was error difference (Fig. 6).

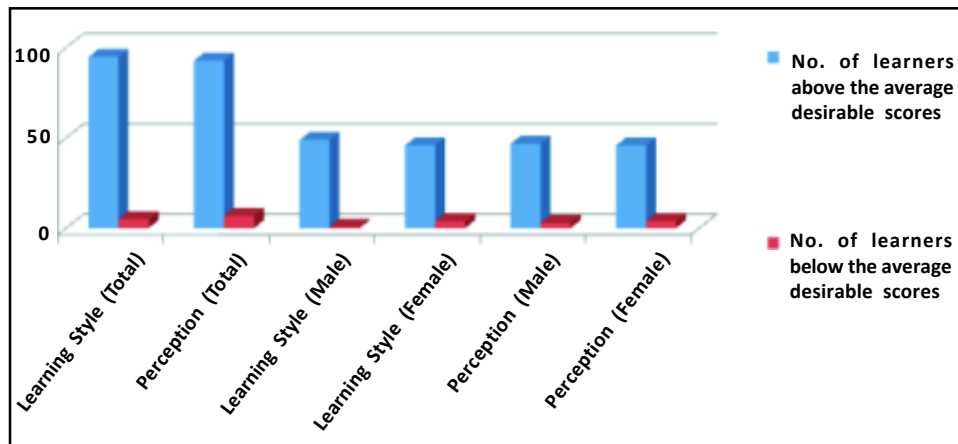


Figure 6. Male and female learners scored above or below the learning style and perception scale

Result and Discussion

Most of the ODL learners enrolled in IGNOU's B.Ed. programme are working teachers. They spend more than six hours in school and also fulfill family and social commitments. That's why they get comparatively less time to pursue their study. That may be a cause that a sizable per cent of learners read the SLM whenever they get time; may be in their job field or leisure hours at home. A lot of effort is made to design and prepare the SLMs. This may be a reason why a majority of the learners opined that the SLM was easy, comprehensible and relevant. This finding is supported by the research conducted by Ojo and Olakulehin (2006). Students' preference orders in using SLMs are: the content organisation in a Unit, let us sum up, and introduction. It is because, the writing of the Units proceeds in a definite structure and specified model of developing the SLM. This finding is also supported by the study conducted by Panda (2000).

Nearly half of the students reported that the writing style and difficulty level of the units in a block are more or less same. Most of them agreed to the statement that the units were thematically distributed; learner-friendly approach was used; content was adequately aligned with the objectives; and the sections and sub-sections were logically arranged in units. These features motivate learners to accept printed SLM as a preferred means of learning in the distance education system. Though technology plays an important role in ODL for transacting curriculum, learners are more comfortable using the SLMs. Nearly half of the percentage of the learners referred to the suggested reading materials. This finding reveals a serious concern in ODL system which needs to be addressed. The cause of not referring to "suggested reading" materials may be the paucity of time. Another reason may be, that the learners concentrate on the SLM to successfully complete the examination.

The average desirable score in the variable learning style was 60 and in the variable perception was 78. It was found that most of the learners above the average desirable scores in both the learning style and perception scale. It was an interesting observation

for the ODL system. It reflects on the satisfaction level of the learners in their study and validation of the ODL system.

It was also observed that the teaching experience of the B.Ed. learners made little contribution to their learning style. Both the 5 years and above experienced learners showed similar learning style in ODL. The comparison between the male and female learners on their learning style in ODL did not differ significantly, which is supported by the study conducted by Sahoo and Chandra (2013). Similar findings were also reported with regard to their perception on SLM. No significant difference was observed either in gender (male and female) or in experience of the learners (5 years or more of experience). Moreover, the male and female learners who had scored above or below the desired average scores either in the scale of learning style in ODL or in the scale of perception on SLM did not differ significantly. Both the male and the female learners achieved more or less same scores. It implies that the gender and the experience of the learners contributed very little in adapting and changing their learning styles and behaviours.

The relationship between the two variables (learning style in ODL and perception on SLM) was found positive. It reveals that the perception of the learners on SLM helps them to adopt better learning style and vice versa.

From the above discussion, it emerges that the format of ODL and style/model of writing SLMs motivated learners to engage in study and to complete various learning tasks. Learners felt that the learning style which they followed in the conventional educational system was different from the learning style followed in ODL. This may be because of the manner in which the SLMs are structured and written and the activities to be performed during their study. The perception of most of the learners towards the SLMs was favourable. It was a good sign on the part of every learner enrolled in the ODL system, because in this style, learners get less opportunity to come face-to-face with the teachers, that is why a correct attitude and positive perception is essential for a distance learner. The difference in practices (either of perception/learning style) so caused by the two variables was negligible. The association between perception and learning style of the learners observed was positive. It denotes both the variables constructively help each other in ODL.

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