

## Effectiveness of Self Instructional Material of Distance Education

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### Abstract

The study evaluated the self-instructional materials of M.Ed level of Allama Iqbal Open University, considering eight parameters i.e. introduction, objectives, contents of units and its organizations, format, presentation style, visual materials, individualized learning, examples from daily life, summary at the end of unit and glossary. All over Pakistan 585 students, 70 tutors, 20 Unit writers and 8 Course coordinators constituted the population of the study which was taken as a sample i.e.100% sampling. Data were collected through four questionnaires. The major results of the study portrayed that introduction of units has been written clearly, provides the introductory summary of the course units and each unit objectives are relevant to M.Ed programme. The organization of contents is in a logical sequence and distance education philosophy is incorporated in the format, presentation style of materials. The enough visual materials are included in the content. The materials of distance education of AIOU facilitate individualized learning while the quoted examples in the material are not match with the daily life and local situation of the distance learners. However, there was no summary and glossary of unit.

**Keywords:** distance education, non formal education, distance education philosophy, self-instructional material, individualized learning, visual material, self-assessment

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## **Introduction**

Education is an absolute necessity for each individual of the country. The system of education proceeds from the cradle to the grave. The mystery of the survival of life lies in the education. The country which needs education bites the dust soon. However, full participation in national building activities by the population cannot be attained unless all the individuals get expertise and knowledge required for such contribution. Secondly, the attainment of expertise and knowledge rely almost on the educational system which is a reflection of development of the country. The existing Formal educational institutions particularly in under developed countries cannot satisfy the essential requirement of education. According to Rashid, M. (2010, p.10) system of formal mode of education has less capacity to accommodate such growing number of students so there is need of alternative system of education i.e. distance education. Therefore, distance education increases educational opportunities to group of people previously unable to benefit from formal education at low cost which compare with conventional education. Researches in the field of education found other ways of proving education to meet the required demand of education like distance education. Now a day's distance education is being imparted along with conventional system of education. Its capacity to accommodate a large number of students has made the distance education more popular. The concept of distance education has been accepted in many developed countries like United Kingdom, Germany, Canada, Spain, Japan and developing countries like Sri Lanka, Thailand, India, and Pakistan etc.

In the system of distance education, there is a separation between distance student and distance tutor. only some time face-to-face teaching facility is provided. However, rowntree, d. (1994, p.13) believed that the learner of distance and flexible system heavily rely on specially developed instructional material. Hodgson (1993, p.14) said that all flourishing systems of distance learning are based on well designed, students-centered, self-instructional learning material. This point of view further supported by Jegede, (2009) that National Open University of Nigeria students depend generally on the utilization of written words, and university uses printed materials as a main medium of instruction until the framework for complete online teaching become accessible. Printed material is still a powerful medium in many open universities in developing as well as in developed countries (Gaba & Dash, 2004). It is not only the main source of providing education to the distance learner but also function as a teacher. So that it has the quality of self-

explanatory, self-directed, self-motivating, self-evaluation and self-learning. No doubt that face-to-face communication dominated the system of education for a long time. Its importance declined to some extent with the discovery of the printing press.

To meet the large demand of education in Pakistan, the distance education university was set up. According to the Vice Chancellor report of AIOU (2007, p. 7) Allama Iqbal Open University was founded as second university of the world under Parliament Act 1974 after establishment of first world Open university i.e. United Kingdom Open University in 1969. It has many unique features like employing distance learning strategies. The different departments of university develop their own self-instructional materials for their respective students from Matric to PhD level. The present study was conducted to evaluate the effectiveness of print based self-instructional material of distance education system at M.Ed level in Pakistan.

### **Literature Review**

Distance education goes under the class of Non-formal education. It is a sorted out educational framework outside the formal education system. It gives education to the students who are discrete from the tutor. These students require specialized developed material to overcome distance barrier. Self-instructional material is developed for distance students for independent study. It should be spontaneous, easy to use, instructionally transparent and cost effective. The term self-instructional material defined by the Rowntree, D. (1996, p.9) in these words that material for open and distance learning are organized in such a way that students can learn from them adequately with less help of a teacher. These words further supported by Prasad, C. D. (2007, p.71) self-instructional material has features like instructionally transparent, spontaneous, easy to use, review, edit and referenced cost and time-effective. Self-instructional material occupies key positions in instructions of distance education. In this regard the Race, P. (2005, pp.12-13) said that "It is learning by doing, it satisfies well-articulated needs of learners, it is structured to help students to learn at their own speed, it is also supported by tutor and some sort of media. According to Moore, M. G. and Quinn, C. (1994, p.139) that printed material is important part of learning for students. It includes pamphlets, brochures, magazines, paperback books, work books and newspapers. The communication between the distance learner and tutor is facilitated by print, electronic, sometime face-to-face or other devices. Self-

instructional material is the back bone of distance education system. In formal education system a material is teacher-centred and is instructed through a single medium that is the teacher but in distance education system it is student-centred and the instruction is carried through multiple media. several media are integrated into the system that the course can never be completed without their joint operation or application. So the self-instructional material promotes and support the individualized learning. On the other hand, distance learning material is called the tutor in print form and known as home study package. Rowntree, D(1994, p.13) further added that developed material particularly for distance students should have clearly stated objectives, advice about how to study, user friendly, shortest, helpful examples, illustrations, exercises, feedback and space for learners to write down their ideas.

Distance education provides opportunity of interaction among the students and teachers. It is a flexible learning and best means of self-learning which is used by the learners in most common way and become most common among the learners (Roy et al., 2004, Ghalib Ahsan et al., 2006). There is found positive attitude towards distance education. Moreover, married students had higher positive attitude in distance education then the unmarried students. There is a most significant existed toward self-learning materials (SLM) (Kumar, 1999). In different studies it was found there was lack of expertise for writing learning material. The present learning materials are not good according the need of learners. The learning material should be in self-instructional learner can reach at own pace without the support of teacher (Rowntree, 1994). Holmberg (1986) stated that intellectual orientation and procedures that improve, level of content processing and facilitate individual learning styles, which best suit to the open and distance education perspective. Furthermore, faculty training is essential for the development of self-instructional material for distance education (Naidu,1987; 1988 and Kember and Mezger 1990).

### **Models of Self-Instructional Material**

There are different models for developing self-instructional material by the distance education institutions in the world. Panda, S (2000) said that all models of course development have varied implication on the cost, time lines, effectiveness and quality of material produced. The brief summary of few models are as:

**Course Team Model (CTM)**

This model consists of subject specialists, educational technologists, producers, editors, students' representatives, graphic designers, counselors and course chairpersons. It is used by UKOU, AU Canada and AIOU Pakistan (Rashid, 2009).

**Writer-Editor Model (WEM)**

In this model subject specialist write the whole course and course designer develop a self-instructional material according to required format and standard (Belawati, T, et.al, 2005).

**Contract Author-Faculty Model**

The services of external course writers are hired on contract basis to write the course. Full time Faculty members and editors within the university responsible to examine the written course. This model is usually practiced at IGNOU India (Panda, S. 2000)

**Workshop Generated Model**

In This model workshop of experts of course developers is organized and it is improved version of course team model. Like course team model different experts and editors involve in this workshop process. It takes less time to complete the course (Panda & Garg, 2003).

Many researches have been conducted in the field of developing of self-instructional material at Allama Iqbal Open Universities (AIOU) Pakistan. All these researches discussed general features of the study guides, but the present study was designed to evaluate technical factors of material for writers' guidance. Main findings of the research by Sultana, N. (1998) were: "objectives of the materials were appropriate and assessment questions were also linked with these objectives. Content quality was good, whereas materials language and style of presentation needed improvement. Shirazi, H. J. (2000) concluded that objectives were attainable, clear and contents were logically ordered. Presentation style of material was perfect while typographical errors were existed in material, contents did not expedite retention of material and study units were written in appropriate tone. Malik, Q.E. (2006) showed that instructional package full filled the needs of distance learners and organized logically according to the students' mental level. Objectives can be achieved through instructional package. Dhul, Z. S. (2004) concluded that contents list and summary at the end is missing in each unit. Material found appropriate to learners' level and had logical sequence clarity and sequence. Anjum, S. (2004) found that study

materials were written according the philosophy of distance education but it did not arouse the interest and curiosity of learners. It has been edited accurately and its outlook was up to the standard.

### **Objectives**

Following were objectives of the study:

1. To determine clarity of unit introduction and relevance of course objectives with self-instructional material.
2. To find out the format, presentation style and logical sequence of the self-instructional material.
3. To examine the included examples, visual materials and facilitation for individualized learning.
4. To determine availability of unit's summary and glossary.

### **Research Questions**

Following eight research questions were formulated to carry out the study:

1. Is introduction of each unit written clearly, comprehensively?
2. Are objectives of each course suitable for M.Ed. programme?
3. Are contents of the materials organized in a logical sequence?
4. Is format, presentation style of materials according to the distance education philosophy?
5. Are sufficient visual materials given in the content to arise the interest of learners?
6. Are given materials suitable for individualized learning?
7. Are given examples in the material relevant to the learners' daily life and local situation?
8. Are summary and glossary given at the end of each unit?

### **Methodology**

Data was collected through four questionnaires for this descriptive type study. The following methodology and procedural steps were adopted to carry out this study.

### **Population**

Population of the study consisted of:

1. All the 585 students of M.Ed (specialization in Distance and Non-

Formal Education) level courses of Allama Iqbal Open University from overall Pakistan.

2. All the concerned 70 Tutors of 1<sup>st</sup> semester.
3. All the 20 academicians / Unit writers of concerned courses of AIOU.
4. All 08 concerned course coordinators.

### **Sample**

100% sample was taken of all categories i.e. 585 students, 70 tutors, 20 Academicians / Unit writers and 08 Course coordinators.

### **Development of Research Tools**

Four questionnaires were designed on Likert scale to collect the data from the sample considering eight parameters i.e. introduction of units, objectives of the units, contents and its organizations, format and presentation style of materials, visual materials, individualized learning, examples from daily life, summary at the end of unit, self-assessment and glossary. Each questionnaire contained 48 items having 6 items related to each parameter.

### **Validation of Tools**

All questionnaires were professionally validated with the consultation of concerned experts of each category and modified them according to their useful opinions. Only those items were included in the final version on which 2/3 experts agreed upon. Then pilot study was conducted on a small group of each category of the semester and Cronbach's alpha test was applied to calculate the reliability level of the items of the questionnaires. Finally, the reliability of the questionnaires was calculated through Cronbach's alpha test. The reliability values of each type of the questionnaire were calculated 0.833, 0.773, 0.774 and 0.779 for students, tutors, Academicians / Unit writers and course coordinators respectively.

### **Analysis of Data**

The data was analyzed applying statistical techniques mean score and Chi Square (one way) formula.

Table1

*Opinions about Introduction of Self- Instructional Material*

Respondents	Students	Tutors	Writers	Course Coordinators	Average
Chi Value	404.60376	16.92308	697.56602	259.39623	344.62227
Mean	4.13	2.95	4.50	3.75	3.83

Table value of  $\chi^2$  at 0.05=9.48852 df=3

Research question 1 aimed to evaluate the introduction of each unit whether written clearly, comprehensively and do provide the summary of the unit? To address this question Chi Square ( $\chi^2$ ) was calculated and compared with its table value. The average calculated value of  $\chi^2$  (344.62227) is greater than table value of  $\chi^2$  (9.48852) at 0.05 level of significance while the average mean score is 3.83. Therefore it supports the statement that introduction of units has been written clearly, comprehensively and provide the summary of the units of each course of M.Ed programme(Table 1).

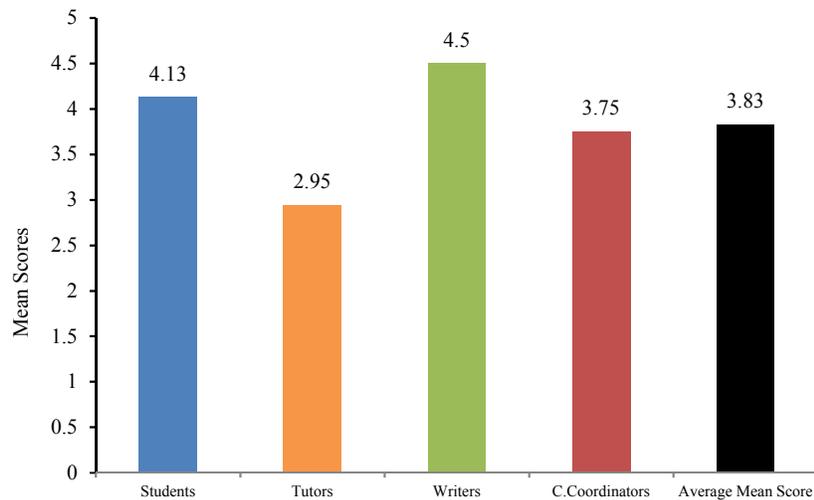


Figure 1. Comparison of mean scores about introduction of self-instructional Material further illustrates that average mean score about the writing introduction of self-instructional Material is M=3.83. The writers showed the highest mean score (M=4.50) and the tutors lowest

mean score(M=2.95). Whereas, the students and course co-coordinators showed (M=4.13), (M=3.75) respectively.

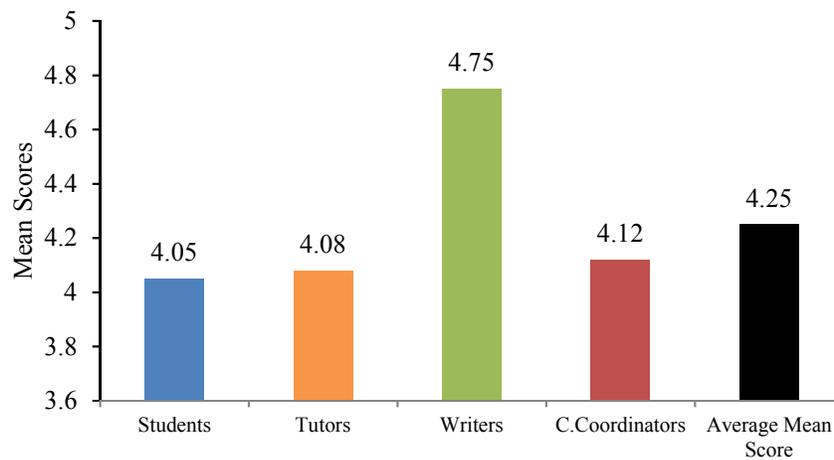
Table 2

*Opinions about Suitability of Unit Objectives*

Respondents	Students	Tutors	Writers	Course Coordinators	Average
Chi Value	401.07546	84.15385	687.56501	404.50365	394.32449
Mean	4.05	4.08	4.75	4.12	4.25

Table value of  $\chi^2$  at 0.05=9.48852 df=3

Research question 2 intended to determine the objectives of each course suitable for M.Ed. programme. To address this question Chi Square ( $\chi^2$ ) was calculated and compared with its table value. The average calculated value of  $\chi^2$  (394.32449) is greater than table value of  $\chi^2$  (9.48852) at 0.05 level of significance while the average mean score is 4.25. Therefore it accepted by the respondents the statement that the objectives of each unit are suitable for M.Ed programme(Table 2)



*Figure 2.* Comparison of mean scores about suitability of unit objectives further depicted that average mean score about the Suitability of Unit Objectives is M=4.25. The writers showed the highest mean score (M=4.75) and the students lowest mean score(M=4.05). Whereas, the course co-coordinators and tutors showed mean scores (M=4.12), (M=4.08) respectively.

Table 3  
*Opinions about Organization of Content*

Respondents	Students	Tutors	Writers	Course Coordinators	Average
Chi Value	384.60378	89.96231	51.53846	87.61538	153.42998
Mean	3.58	4.01	3.50	4.37	3.86

Table value of  $\chi^2$  at 0.05=9.48852 df=3

Research question 3 determined the contents of the materials whether organized in a logical sequence? To deal with this question Chi Square ( $\chi^2$ ) was calculated and compared with its table value. The average calculated value of  $\chi^2$  (394.32449) is greater than table value of  $\chi^2$  (9.48852) at 0.05 level of significance while the average mean score is 4.25. Therefore, it accepted by the respondents that contents of the materials are organized in a logical sequence (Table 3).

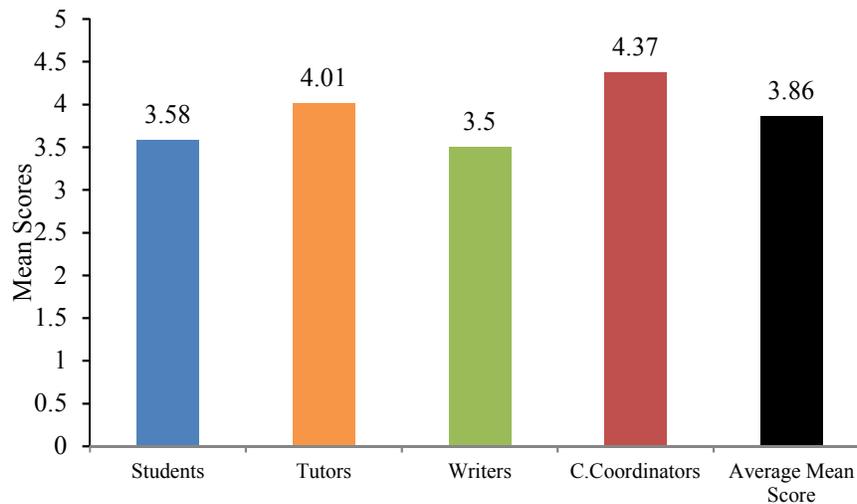


Figure 3. Comparison of mean scores about organization of content depicted that average mean score about the organization of content is  $M=3.86$ . The course coordinators showed the highest mean score ( $M=4.37$ ) and the writers lowest mean score ( $M=3.5$ ). Whereas, tutors and students showed mean scores ( $M=4.01$ ), ( $M=3.58$ ) respectively.

Table 4

*Opinions about Format and Presentation Style of Material*

Respondents	Students	Tutors	Writers	Course Coordinators	Average
Chi Value	87.88679	56.00000	695.70187	104.61540	236.05101
Mean	3.24	3.94	4.25	4.12	3.89

Table value of  $\chi^2$  at 0.05=9.48852 df=3

Research question 4 evaluated the format, presentation style of materials is according to the distance education philosophy. To address this question Chi Square ( $\chi^2$ ) was calculated and compared with its table value. The average calculated value of  $\chi^2$  (236.05101) is greater than table value of  $\chi^2$  (9.48852) at 0.05 level of significance while the average mean score is 3.89. Therefore it supports the statement that the format, presentation style of materials is according to the distance education philosophy (Table 4).

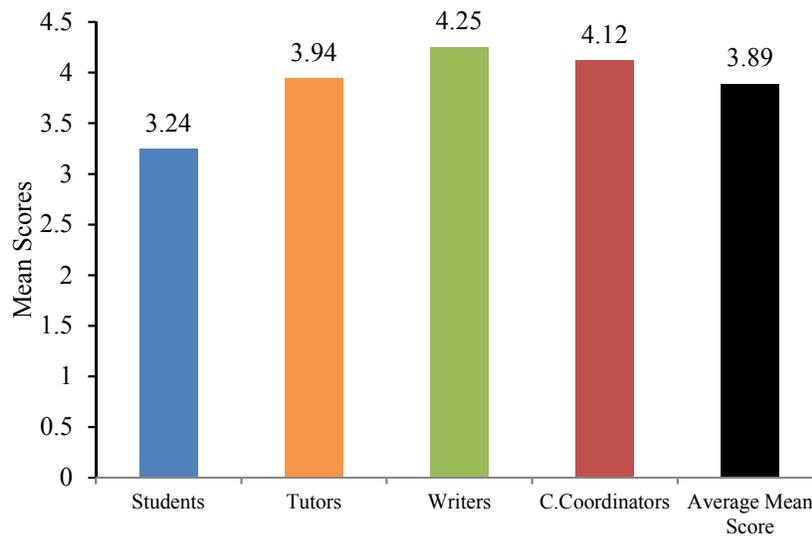


Figure4. Comparison of mean scores about format and presentation style of material portrayed that average mean score about the format and presentation style of material is M=3.89. The writers showed the highest mean score (M=4.25) and the students lowest mean score(M=3.24).

Whereas, the course co-coordinators and tutors showed mean scores (M=4.12),(M=3.94) respectively.

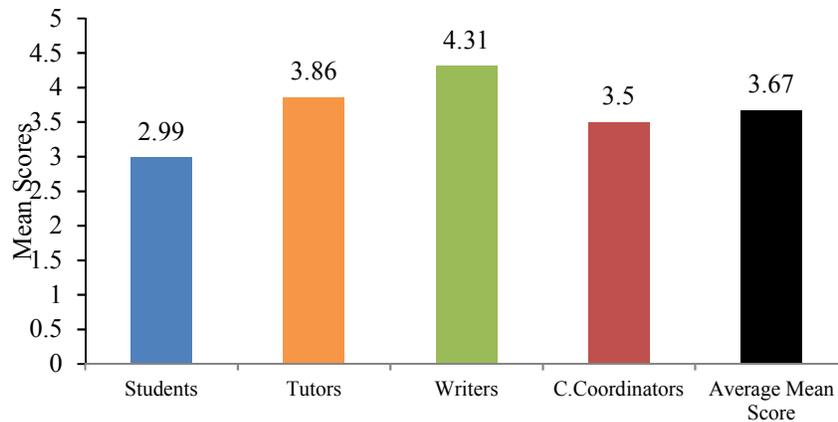
Table 5

*Opinions about Inclusion of Visual Material in the Content*

Respondents	Students	Tutors	Writers	Course Coordinators	Average
Chi Value	101.69810	44.61539	87.61537	51.53846	71.36683
Mean	2.99	3.86	4.31	3.50	3.67

Table value of  $\chi^2$  at 0.05=9.48852 df=3

Research question 5 find out whether sufficient visual materials given in the content to arise the interest of student? To address this question Chi Square ( $\chi^2$ ) was calculated and compared with its table value. The average calculated value of  $\chi^2$  (71.36683) is greater than table value of  $\chi^2$  (9.48852) at 0.05 level of significance while the average mean score is 3.67. Therefore, it accepts the statement that the sufficient visual materials are given in the content to arise the interest of distance learners (Table 5).



*Figure 5: Comparison of mean scores about Inclusion of visual material in the content*

Figure 5 additionally revealed that the average mean score about inclusion of visual material in the content is M=3.67. The writers showed the highest mean score (M=4.31) and the students lowest mean score

(M=2.99). Whereas, the tutors and course co-coordinators showed mean scores (M=3.86), (M=3.50) respectively.

Table 6

*Opinions about Facilitation of Individualized Learning*

Respondents	Students	Tutors	Writers	Course Coordinators	Average
Chi Value	325.88678	50.00001	697.51602	54.61538	282.00455
Mean	3.55	3.81	4.50	3.63	3.87

Table value of  $\chi^2$  at 0.05=9.48852 df=3

Research question 6 focused on suitability of given materials for individualized learning. To address this question Chi Square ( $\chi^2$ ) was calculated and compared with its table value. The average calculated value of  $\chi^2$  (282.00455) is greater than table value of  $\chi^2$  (9.48852) at 0.05 level of significance while the average mean score is 3.87. Therefore, it is accepted by the respondents that the statement of the materials of distance education are suitable for individualized learning (Table 6).

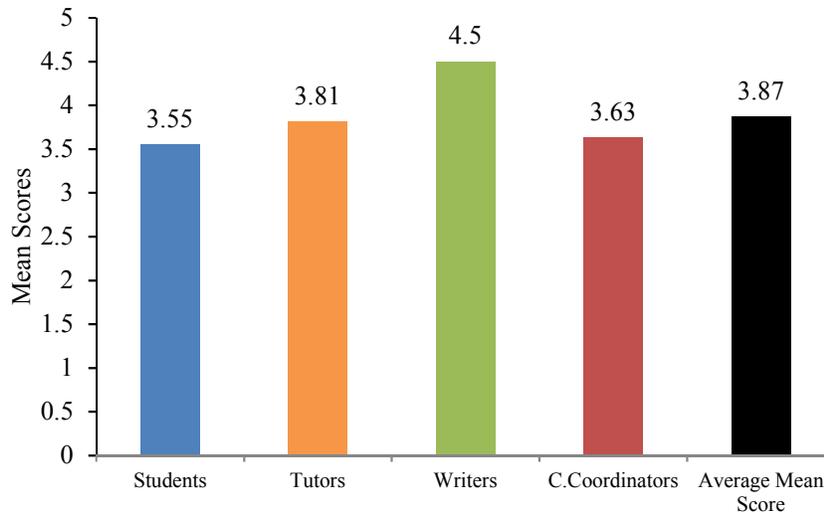


Figure 6. Comparison of mean scores about facilitation of individualized learning represented that the average mean about facilitation of individualized learning is M=3.87. The writers showed the highest mean score (M=4.50) and the students lowest mean score

(M=3.55). Whereas, the tutors and course co-coordinators showed mean scores (M=3.81),(M=3.63) respectively.

Table 7

*Opinions about Daily Life and Local Examples in the Material*

Respondents	Students	Tutors	Writers	Course Coordinators	Average
Chi Value	317.39621	82.00000	29.52535	477.98112	226.72567
Mean	2.15	1.85	3.57	1.84	2.44

Table value of  $\chi^2$  at 0.05=9.48852 df=3

Research question 7 to identify the given examples in the material are relevant to the learners' daily life and local situation. To tackle this question Chi Square ( $\chi^2$ ) was calculated and compared with its table value. The average calculated value of  $\chi^2$  (226.72567) is greater than table value of  $\chi^2$  (9.48852) at 0.05 level of significance while the average mean score is 2.44. Hence the statement is rejected by the respondents that the given examples in the material are relevant to the learners' daily life and local situation (Table 7).

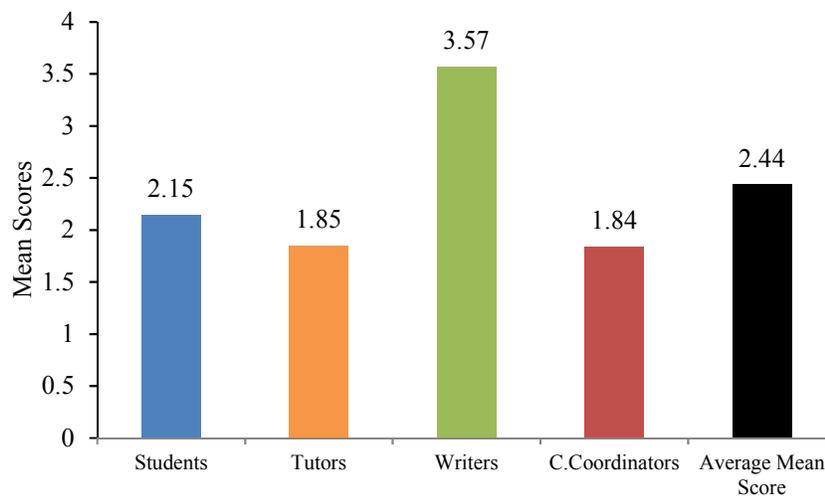


Figure 7. Comparison of mean scores about daily life and local examples in the material explained that the average mean about daily life and local examples in the material is M=2.44. The writers showed the highest mean score (M=3.57) and the tutors lowest mean

score(M=1.85). Whereas, the course co-coordinators and students showed mean scores (M=2.84),(M=2.15) respectively.

Table 8

*Opinions about Summary and Glossary in the Material*

Respondents	Students	Tutors	Writers	Course Coordinators	Average
Chi Value	518.99999	42.61539	44.45154	477.95011	271.00426
Mean	2.02	2.15	2.25	1.87	2.07

Table value of  $\chi^2$  at 0.05=9.48852 df=3

Research question 8 constituted to determine whether the summary and glossary are given at the end of each section or unit? To address this question Chi Square ( $\chi^2$ ) was calculated and compared with its table value. The average calculated value of  $\chi^2$  (271.00426) is greater than table value of  $\chi^2$  (9.48852) at 0.05 level of significance while the average mean score is 2.07. Therefore it accepted by the respondents the statement that the summary and glossary are given at the end of each section or unit (Table 8).

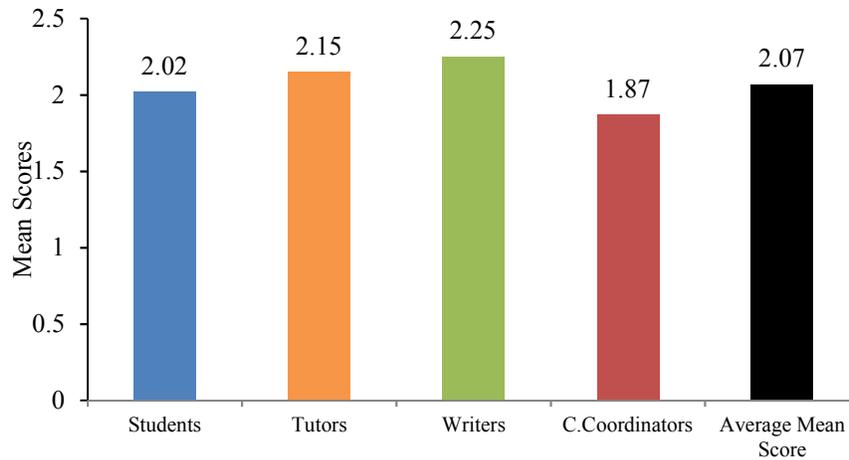


Figure 8. Comparison of mean scores about summary and glossary in the material added that the average mean about summary and glossary in the material is M=2.07. The writers showed the highest mean score (M=2.25) and the course co-coordinators lowest mean score (M=1.87). Whereas, the tutors and students showed mean scores (M=2.15), (M=2.02) respectively.

## **Conclusions**

Conclusions drawn on the basis of data analysis were as under:

The students' views explained that course objectives were considered in the material, introduction, examples, activates, references for further reading, self-assessment questions were included in each unit, material is written in easy to understand language but the summary, answer to the self-assessment questions, daily life examples, glossary of terms of each unit were not given. The tutors' opinion reflected that material was suitable for M.Ed. programme. Sufficient visual materials were given in the contents and it also considers the individual learners needs while the guideline for tutors, icons, illustration and symbols were not cited in the material.

The writer's/academicians' judgment showed that the introduction of units has been written unambiguous and understandable manner. While writing the material learners' profile, learners' needs, format, presentation style of the material was considered. The course coordinators suggested that each course material fulfill the professional needs of distance learner. Summary and self-assessment to check the mastery at the end of each unit was not included.

Overall, the introduction of units has been written unambiguous and understandable manner to the students. It also provides the introductory summary of the units of each course and objectives of each unit are match with the objectives of M.Ed programme. The contents of each unit were organized in a logical sequence and distance education philosophy was incorporated in the format and presentation style of materials. Furthermore, the adequate visual materials were included in the content to develop the interest of learners. It is also concluded that the materials of distance education of AIOU were supported individualized learning. Hence, the given examples in the material were not related to the learners' daily life and local situation. The summary and glossary of the each unit was also not written at the end of each section or unit.

## **Discussion**

Distance and open education system is the unique approach to educate the people at large scale. It provides the chance of education to those people who have not the opportunity to attend the formal system of education. Self-instructional material has the key position in distance education system. The self-instructional materials have unique characteristics. It also demands unique techniques to write and develop.

Allama Iqbal Open University (AIOU) develops its own self-instructional material. The present study evaluates the self-instructional material used for M.Ed (DNFE) Distance and Non-Formal Education programme by AIOU. Study results portrayed that the introduction of units has been written clearly and understandable to the students. It supported the findings of that instructional package is written clearly and properly. The contents of each unit were organized in a logical sequence and distance education philosophy was incorporated in the format and presentation style of materials. It supported the results of Anjam.S(2004) that philosophy of distance education is incorporated in material. It also supported results of Shirazi,H.J(2000), Dhul, Z.S (2004) and Malik Q. E(2006) in which both researchers concluded that the material is organized in logical sequence. The study result contradicted the finding of Sultana. N (1998) in which researcher pointed out that presentation of material needs improvement. Study results showed that adequate visual materials were included in the content to develop the interest of learners. It contradicted the results of Anjam, S (2004) which found that material does not provide interest for students. This study also conclude additionally that the materials of distance education of AIOU were supported individualized learning, quoted examples in the material are not related to the learners' daily life. Summary and glossary of the each unit are not given at the end of each unit.

### **Recommendations**

- i. The guideline for tutors, icons, illustration and symbols may be added in self-instructional material.
- ii. Examples related to the learners' daily life and local situation may be quoted in self-instructional material.
- iii. Summary, answer to the self-assessment questions, glossary of terms of each unit may be included in self-instructional material.

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