

EFFECTS OF INTERACTION ON ACHIEVEMENT OF DISTANCE LEARNERS

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ABSTRACT

The paper discusses some findings of the study conducted at Allama Iqbal Open University Islamabad. It was a descriptive study. The sample of the study consisted of 20 resource persons and 80 M.Phil students enrolled in Semester Autumn 2009. Questionnaires based on five point rating scale were used to collect data from the participants. It was revealed that interaction took place during the M.Phil workshops while verbal interaction can lead the learners to take active part in the learning process. Techniques of questions used by resource persons promoted interaction during workshop and interaction motivates learners to ask questions, from the resource person that helps students to clarify their concepts about the topic. It was further concluded that interaction has positive effects on student achievement of distance learners. The study recommended to promote interaction among distance learners using different interaction techniques.

Key words: Distance learners, Interaction, achievement, Open university, Allama Iqbal open university

LITERATURE REVIEW

Interaction process is co-related with learning as Mukhlal (1998) referred it a fundamental factor to the structure and practices of classrooms at all levels of education. He traced out three dimensions of classroom interaction i.e. the psychological, sociological and linguistic dimensions which are complementary to each other, and points out a positive relationship of classroom interaction with motivation, achievement, memory, imagination, creativity, skill, communication and behavior change. Lauillrd (2000) says that a university education must go beyond excess to information/content; “engagement with others in the gradual development of their personal understanding” Sutton (2001) argues that “interaction can also be understood as the way learners and instructors communicate their own ideas, perspectives, feelings, and knowledge over time...” Anderson (2004) refers interaction as a multifaceted concept of the educational process. Bigus (2004) is of the opinion that interaction or interactivity refers to how different components in a learning environment can act and react with one another to facilitate learning. Anderson and Garrison (1998) and Moore (1989) have discussed three types of interaction, (student-student; student-teacher; student-content). Hillman, Willis and Gunawardena (1994) propose a type of interaction as “learner interface”. Northrop and Rasmussen (2000) advocate the addition of learner-feedback interaction. Sutton (2001) introduces a new type of interaction learner-vicarious interaction. In the light of literature, interaction could be divided into following six types:

1. Learner - content interaction
2. Learner - instructor’s interaction
3. Learner - Learner interaction
4. Learner - self interaction
5. Learner- interface interaction
6. Learner - vicarious interactions

1. Learner - content interaction

Moore (1989) stated interaction as a defining characteristic of education and equated it with the Holmberg's "internal didactic conversation". Anderson (2002); the value of content is dependent on the extent which engages the students or teachers in interaction. Fosse and his colleagues (2002); argue that content is a central element of learning situation but learner-content interaction fails to generate any sort of reciprocal event where the learner acts upon content and the content acts back upon the learners. Molanda (2002) interaction provides a most accurate description of the relationship of the learner and the content. When the learner establishes new knowledge by combining it with the body of already existed knowledge it brings changes in the understanding and perspective of the learners mind is known as learner content interaction.

2. Learner - Instructor Interaction

In spite of the use of modern technology, there is no alternative of face-to-face teacher learner interaction. As Anderson, Annand and Wark (2005) quoted Vygotsky (1978) that the most fruitful experiences in learner's educational process arise when they interact with more experienced partners (teachers) who help them to perform more complicated tasks. In literature variables i.e. face-to-face encounters, timely feedback, performance, instructor presence in the learning environment are linked with teacher learner interaction. Face-to-face component enable students to promote self-direction and self-realization. Regular feedback is a necessary prerequisite for effective learning to energize the learners. Collis, Deboer and Slotman (2001); state that feedback is critical to assessment and provides important information about the progress of the students. Knapper (2004) learning whether it may be physical/cognitive requires provision of feedback to know how well the work is being performed so that improvement can take place. Soo and Bonk (1998) argues that interaction between student and faculty is intended to help student to understand the learning material and clarify difficult points of the course information. Fosse (2002) searched out that distance teacher becomes a facilitator whose main job is to organize learner's interaction with content and with other learners through counsel, support and supervision.

3. Learner - Learner Interaction

Learner- Learner Interaction can be between two/several learners as Moore (1989); this is inter learner interaction, between one and other learners, alone or in group setting, with or without the real time presence of an instructor. Rourke and Anderson (2002); "students can provide non-threatening support to their fellows who speak more directly to the learners than that provided by teachers..." Working with others often increases involvement in learning. Sharing ones own ideas and responding to others sharpens thinking and deepens understanding as Haythornthwaite (2001); "people who work together provide social and emotional support to each other. Student to student interaction is the need of learning process". Picciano (2002); is of the view that "basic element in traditional classroom learning is communication among the students: the ability to ask questions, to share ideas with others, or to disagree with others is basic need in the learning process". People who work together, has a good source of mutual understanding as well as learning.

4. Learner - Interface Interaction

The computer system is the medium that helps the student to communicate with one or many persons synchronously and asynchronously outside the traditional classroom. The major variables linked to learner interface interaction are computer experience, student's perceptions regarding the technology and access to technology. Atack and Rankin (2002) argue that "Computer experience can affect learning and improve computer skill" while Kenny (2002) reported that "students had a positive perception of their interaction with computers because of their ability to access coursework anytime". Bouhnik and Talimarcus (2006) argue that the system itself may be viewed as a special environment which can establish different types of interaction among students. Anderson (2005) suggested that due to computers, increasing computational power, storage capacity, functionality when net-worked, and ease of programming, the ability to transfer student teacher and student- student interaction into enhanced forms of student content interaction.

5. Learner – Self-Interaction

Learner – Self-Interaction in which one uses internal senses that can be used to interact with oneself. Interaction involves senses, and the use of senses is known as "self-interaction" As Khan (2001) argues that movement of different parts of body is also self-communication. However, speech can also take place inside one's head, known as intrapersonal communication. Knapper (2004) argues that all learning is self-directed in the sense that no one can learn on behalf of another.

6. Learner - Vicarious Interaction

When a passive individual gets the benefits same as two actively interacting individuals only by listening their interaction is called vicarious interaction. Sutton (2001) defines vicarious interaction that a number of motivated students are shy, hesitant, or insecure, they avoid interaction that could enhance their quality learning. The direct interaction by this class of learners may not be necessary for them to achieve learning benefits as Knapper (2004) states that learning sometimes takes place vicariously or students can learn by initiating a teacher's skill performance. Sutton (1999) is of the view that when a passive student actively observes, absorbs, and processes the ongoing interactions between other students and between other students and their instructor. Such students are referred to as vicarious interactors.

CHANNELS OF INTERACTION

There are two channels of interaction i.e.

I. Verbal Interaction

The interaction which involves words is known as verbal interaction. Littlejohn (2001) defines communication as "the verbal interchange of a thought/ idea". Verbal channel involves oral (speaking and listening) and written (writing and reading) interaction skills. Galle, Nelson, Luse and Villere (1996) explain the reciprocal relationship between listening and speaking and describe different types of listening and speaking as marginal, attentive, or active listening, and recitation, reading impromptu and extempore. They describe inadequate hearing apparatus; lack of a common frame of reference between speaker and listener; physical mental and emotional distractions; a tendency to evaluate; improper listener attitude; poor audience adaptation; inappropriate messages; weak physical presence; lack of organization; poor voice control; inappropriate vocabulary; and a lack of clear purpose as barriers to effective listening and speaking.

II. Non Verbal Interaction

Non verbal interaction is communication without vocalization. One cannot remain without communicating activity or inactivity, words or silence all have message value. Nonverbal channel involves vocal characteristics of language i.e. speed fluency level, rhythm, volume, flexibility of voice and behaviouristic channel i.e. proxemics, posture, gestures, facial expressions. Different authors describe different types of non verbal interaction as Finnegan, (2002) summarized seven non-verbal moods of expression as:

1. Proxemics (structuring and using space to communicate)
2. Haptics (using touch to communicate)
3. Chronemics (using time)
4. Kinesics (visual aspects of bodily movement)
5. Physical appearances (carrying messages to others)
6. Vocalics (vocal as opposed to verbal aspects of speech)
7. Artefacts (both as message vehicle and influencing other codes)

While Emden (2001) states appearances, use of nerves, use of volume, use of voice variety, body language, use of hand and body moments, use of feet and eye contact are the component of non verbal interaction. It helps to complement verbal message by adding additional insights, to substitute for verbal message, accent verbal messages, contradict verbal messages, repeat verbal messages and regulate verbal message. Non verbal interaction often expresses feelings more accurately than the spoken or written language as Turnbull (2007) researches out the elements of effective communication as 55% posture, gestures and eye contact, 38% voice tone and inflection and 7 % of content. So 93% of communication is conveyed by non-verbal elements. Turnbull (2007) argues that relationships can be improved if eye contact when talking to other people is used. Eye contact indicates whether one is open to communication. This can be observed during a class when a teacher asks a question, students who think they know the answer will generally look the teacher while students who do not will usually try to avoid eye contact. It is used to control the inter personal communication. Grover (2004) has commented that one can communicate through his eyes more than his words and eye gaze expresses both emotional extremes of behavior. Grover (2004) describes six basic emotions that facial expressions reflects as fear, anger, disgust, happiness and sadness. Facial expressions. Posture is an indicator of self confidence, energy, fatigue, or status. In the classroom, students are keen to receive body message of enthusiasm or boredom about the subject matter being taught can sense confidence or frustration from the unconscious behavior of teachers.

EFFECTS OF INTERACTION ON ACHIEVEMENT

Importance of interaction in education is beyond doubt. As Sharp (2005) sums up the importance of interaction by quoting Berge (1999); Hillman Wills and Gunawardena (1999); Moore (1996); Zheng and Smaldino (2003) that it is the essential process of putting together the pieces in the co-creation of knowledge. Positive student engagement in the classroom enhances student achievement as Akey (2006) has states that teachers are key players in enhancing student engagement and are the most influential in a student's educational experience. They can help students by creating a culture of achievement in the classroom, developing interactive and relevant lesson activities, and being encouraging and supportive to students and students learn more and retain more information when they actively participate in the learning process. Muklal (1998) is of the view that interaction and achievement are closely interlinked, activity centered and interaction oriented class has great scope for the learning. Peers interaction helps in mutual exchange and discussion of the ideas and aspects of content matter among students in the class. Student teacher interaction develops the habit of participating in discussion and question answer sessions. Anderson (2004) argues that out of seven identified principles of good practice in undergraduate education by Chickering and Gamson four are related to interaction: those that encourage contact between students and faculty, develop reciprocity and cooperation among students, encourage active learning, and encourage prompt feedback from teachers. These seven principles are:-

1. Encouraging student/ faculty, content
2. Developing reciprocity and cooperation
3. Engaging in active learning
4. Providing quick feedback
5. Emphasizing the amount of time dedicated to tasks
6. Communicating high expectations
7. Respecting diversity

Effective learning requires student engagement and application to a learning task, such engagement as Knapper (2004) argues that there is considerable result demonstrating that personal interaction between teacher and student can have major positive effect on cognitive development as one on one interaction gives important feedback to the learners, promotes reflection about learning and may serve as a type validation for the learner's accomplishments. Interaction and achievements are parallel to each other. A student's result shows his achievement. This research also enables a student to do more effort and do his work with interest to get better position and these result are feedback for teacher to judge what he has taught and where is need of further improvement. Teaching and learning are no longer confined to the class room or the school day. There are many technologies that can offer a great flexibility in when, where, and how education is distributed. Distance education is one such flexible mode of education.

DISTANCE EDUCATION

Distance education has become a major form of learning and teaching worldwide. It has opened a range of exciting new methods for transferring knowledge between teacher and student who are separated by distance and sometimes by time, and offered benefits of convenience, flexibility, effectiveness efficiency interactivity and equity. Distance education is the quasi-permanent separation of teacher and learner there is influence of an educational organization in the planning and preparation of learning materials and its provision. **Simonson** (2006) states that distance education is one of the most dramatic technology based education. Communication technology enables learners to receive instructions despite geographic and time disparities which are impossible through traditional classroom instruction impossible. Interaction is a defining characteristic of distance education as referred by Moore (1989), and has always been valued in distance education even in its most traditional, independent study format. Holmberg (1983) introduced the idea of simulated interaction that defines the writing style appropriate for independent study models of distance education programming that he referred as guided didactic interaction. Distance education has changed the paradigm from teacher-learner interaction in the classroom to one in which students can interact with multiple resources, unrestricted by time or place. Moore (1989) claims that in distance education when the instructor has to deal with each student individually, each student's response to a certain presentation differently, the instructor has a real opportunity to enter into a dialog with each student. Interaction in distance education system is more necessary because in this system there are more chances of students to get confuse and anxious to understand the course. In such situation he can interact with his teacher through letters, computer, internet and satellite. Allama Iqbal Open University (AIU) in Pakistan focuses on "Education for All (EFA)" model.

In all its programmes there is some practical activity/component. Workshops in higher level of education is a compulsory component based and task oriented activity as stated by Mukhlal (1998) it is an academic procedure for exchange of ideas or for getting a task done. Objective of the workshop, as Anwar-ul-Haq (2005, p.27) defined is to provide a platform for student-student interaction. A number of researchers are strongly in favour of powerful effects of interaction on distant students. As Anderson (2004) searched out that increased peer interaction can boost participation and completion rates, and results in learning outcome gains in distance education courses. Hillman, Willis and Gunawardena (1994) argued that a student's skill with the communication medium, necessary to participate in a distance education. Offir (2006) stated that the quality of interaction between teacher and the learner is important for the proficiency of the lessons. Fosse and colleagues (2002) indicates that higher levels of interactions have been associated with improved achievements and positive learning attitude. Interaction creates a network of bridges that connect the distant learners "a part of the main". Naheed (2000) recommended punctuality and regularity of tutors and students in tutorial meetings. Tahir (2003) in his study, "Evaluation of Tutorial Support System at Intermediate level in Sargodha Division", states Regularity of tutors and students in tutorial meetings could be fruitful for students. Successful completion of distance education assignments is not possible without tutor's help. A study was conducted by Bibi (2006), face-to-face component increase students' academic achievement; it is helpful in conceptual, theoretical learning and personal growth of the students.

METHODOLOGY OF THE STUDY

It was a descriptive study. The sample of the study consisted of 20 resource persons and 80 M.Phil students enrolled in Semester Autumn 2009. Questionnaires based on five point rating scale were used to collect data from the participants.

DATA ANALYSIS & DISCUSSION

Data collected through questionnaire was tabulated and analyzed by using mean score as shown in table 1 below. It was found that interaction takes place during the M.Phil workshops while verbal interaction can lead the learners to take active part in the learning process. Questions used by resource persons promote interaction during workshop and interaction motivates learners to ask questions, and asking questions from the resource person helps students to clarify concepts. Proper seating arrangement promotes interaction with the resource person while interaction encourages the students to enhance understanding and application. Students could talk about their feelings against the opinion of the teacher and use of the emerging ideas of the students can make the process more interactive. Resource persons are courteous with their students during workshop and resource person allows students to choose between alternative types of interaction according to their interest. Students take active part in classroom discussions whereas learner content interaction takes place during M.Phil workshops and students learn from their fellow students. Vicarious interaction takes place during workshops and learner-interface interaction takes place during M.Phil workshops. Resource person consciously chooses assignments and learning activities that maximize interaction while non-verbal interaction encourages the students to interact with the resource person and eye contact of the resource person increases interaction.

Resource persons make their points clear with the help of their gesture while gestures of resource persons may restrict the interaction. Non-verbal interaction adds meanings to the knowledge of the students while non-verbal behaviour reflects feelings of a person. Non-verbal interaction may substitute the verbal interaction while non-verbal interaction helps the resource person to compliment his verbal communication. Attentive posture increases interaction. Interaction has positive effects on student achievement while written interaction helps to clarify the concepts of the students. Resource persons were helpful for the students during workshops while interaction during workshop was helpful for transfer of knowledge. Interaction during workshops was helpful for transfer of knowledge while interaction is helpful in achieving learning objectives. Students are satisfied with the teacher-learner interaction during M.Phil workshops while interaction makes the classroom environment pleasant. Interaction is needed for better achievement while feedback from the resource person helps students to improve their learning. Interaction brings change in the communication behaviour of the students. Notes taking during workshops helps student to enhance their achievement and interaction enhances student's success in exams. During resource person learner interaction students may lose concentration and resource persons do involve the students during workshops. Lack of appropriate facilities is a hindrance to teacher learner interaction and deficiency with the use of new technology may restrict interaction.

RECOMMENDATIONS

Questioning is an important technique used to improve interaction so resource person may ask question related to the topic randomly and should encourage queries of the students. All necessary facilities should be provided, including multimedia to enhance interaction. Resource persons can make their lecture more interactive by using these emerging techniques. Group discussion and student participation may be enhanced to avoid irrelevant discussions the major, sub topic/ parameters must be provided to students before time. Resource person should be called from relevant field and well equipped, better facilitated and highly qualified resource persons may be selected. Separate time should be given to interaction, duration of workshops may be increased and the limited time of workshop should be used properly. Resource persons should encourage students, and interaction should be free of gender biases.

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Table 1: Summary of data analysis

S.No	Statement	Mean Score
1.	Verbal interaction takes place during M.Phil workshops.	4.34
2.	The verbal interaction can lead the learners to take active part in the learning process.	4.40
3.	Questions used by resource persons promote interaction during workshop.	4.1
4.	Interaction motivates learners to ask questions.	4.3
5.	Asking questions from the resource person helps students to clarify concepts.	4.48
6.	Proper seating arrangement promotes interaction with the resource person.	4.01
7.	Teacher-learner verbal interaction encourages the students to enhance understanding and application.	3.93
8.	Students could talk about their feelings against teacher's view.	3.45
9.	Resource person can make his lecture more interactive by using the ideas of the students during workshops.	4.31
10.	Resource persons are courteous with their students during workshop.	3.48
11.	Resource person allows students to choose between alternative types of interaction according to their interest.	3.14
12.	Students take active part in classroom discussions.	3.66
13.	Learner content interaction takes place during workshops.	3.79
14.	Students learn a lot from their fellow students during workshop.	4.03
15.	Students also learn from the interaction which takes place between other students and resource person.	4.07
16.	Student's internet interaction takes place during workshops.	3.83
17.	Resource person consciously choose assignments and learning activities that maximize interaction.	3.29
18.	Non-verbal interaction encourages students to actively interact with the resource person.	3.40
19.	Eye contact of resource person increases interaction.	4.25
20.	Resource person makes his point clear with the help of his gesture.	3.81
21.	Gesture of resource person may restrict the interaction.	2.96
22.	Non-verbal interaction adds meanings to what the learners have learnt.	3.72
23.	Non-verbal behaviour reflects the feelings of a person.	3.84
24.	Non-verbal interaction may substitute the verbal interaction.	2.93
25.	Non-verbal interaction enables the resource person to compliment his verbal communication.	3.53
26.	Attentive posture increases interaction.	4.20
27.	Teacher-learner interaction has positive effects on the achievements of students.	4.41
28.	Written interaction of the resource person helps to clarify the concepts of students during workshop.	4.24
29.	Resource persons help their students to solve their learning problem.	3.79
30.	Teacher learner interaction helps in transfer of knowledge.	4.36
31.	Interaction during workshops helps in achieving learning objectives.	4.22
32.	Students are satisfied with the interaction with the resource persons during workshops.	3.62
33.	Interaction makes the classroom environment pleasant.	4.1
34.	Resource person student interaction is needed for improvement in achievement level.	4.20
35.	Feedback from the resource person on student ideas helps students to improve their learning.	4.20
36.	The interaction by the resource person helps students to modify their communication behaviour.	4.01
37.	Students take notes during workshop which enhances their achievement.	4.09
38.	Interaction enhances student's success in exams.	3.95
39.	During resource person learner interaction students may lose concentration.	3.05
40.	Resource persons do involve the students during workshops.	2.76
41.	Lack of appropriate facilities is a hindrance to resource person learner interaction.	3.75
42.	Deficiency with the use of new technology may restrict interaction.	3.18