

COMMUNICATION

Interactive Radio for Supporting Distance Education : An Evaluation Study

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Abstract : *Radio has a great potential to support learning at a distance. Being an easily accessible and cost effective medium, IGNOU started an interactive radio project for the students of Management and Bachelor Preparatory Programme. The objective of the project was to interact with the students in their own language and share experiences with them. The effectiveness (pedagogic, access and utilisation) of interactive radio instruction was evaluated and reported in this paper. The students appreciated interactive radio sessions as effective inputs for accomplishing their course objectives. Besides IGNOU students, the students enrolled with other institutions and enlightened public also participated in the sessions. The study revealed that students' participation in the interactive radio sessions was higher than the teleconferences and face to face personal contact sessions. The project can be replicated in other areas also, with systematic planning, implementation and monitoring.*

Introduction

The multiple media approach forms an integral part of distance teaching. While traditional print based course material remains the most popular mode of communication, a great deal of emphasis is being placed on the high-tech and expensive media, viz. computer-conferencing, audio and video, teleconference, internet, etc. In the whole scenario, the ubiquitous and most commonly available medium — the radio — is being sidelined if not totally ignored.

Radio broadcasting has its inherent strength and sphere of influence. It has wide outreach among the masses and is a more affordable medium. It can transcend literacy and geographical barriers and reach out to remote and hilly terrains with relatively low cost technology. The less intrusive nature of the medium allows the learner to simultaneously perform other activities while listening to radio programmes. It can be used even by the visually challenged persons. If used at the local level, it can cater to area specific needs and involve learners in the selection of topics, programming, etc., in a participatory mode. The decentralized approach of local broadcasting in sharp contrast to the vertical approach of mainline broadcasting can develop a sense of intimacy and warmth between the source (distance teacher) and the receivers (learners).

A media planner, however, cannot afford to overlook the limitations of radio. First of all it is unisensory, i.e. 'sound only medium', thus unable to provide colour, light and pictures (Geoffry, 1996). The ephemeral nature of the medium delimits its impact as once the material is broadcast, it cannot be retrieved unless earlier tape-recorded or the programme is repeated on a different occasion. It is often argued that broadcasts have fixed schedules which are against the norms of flexibility, transportability and user control. They are generally aimed at an average target group (Bates, 1984) and as such unable to address the unique needs of individual listeners. Some believe that radio cannot detail finer aspects of an event and the listener has to create a picture of his/her in mind, thus leading to a gap between the reality and the illusion.

With imaginative use, some of these limitations of radio can be converted into strengths; for example, radio can be used to excite curiosity and stimulate imagination not bound by a specific visual or form. The learner has the freedom to visualise the story-line as per his/her cultural and educational backgrounds, thus audio-based instruction does not create urban-rural, rich-poor divisions. The events can be interpreted in terms of the local environment.

The fixed broadcast schedules can develop a sense of self-discipline by motivating the learner into devoting a specific hour exclusively for studies and by adhering to a fixed learning time. Radio can reach out to a well defined target group, and thus emerge as a 'more specific medium' which is relatively difficult in other modes of mass communication. Radio is a more personalised way of conveying information which can be enhanced further by creating a two-way communication. The interactive element can be effectively used to incorporate views, suggestions and feedback of the target group. The interactivity can be harnessed in distance education for creating a two-way communication with distantly placed learners, thus breaking the feeling of their isolation and infusing motivation in them.

The term 'interactive' was initially used for simulated conversations of radio broadcasts in Nicaragua in which the students responded in chorus to questions posed by the radio teacher. However, the concept was later expanded and students were encouraged to apply real life situations to learning (Moulton, 1994).

Highlighting the role of interactivity in distance education, Keegan et al (1986) maintained that distance education is characterized by the provision of two-way communication so that the student may benefit from and even initiate dialogue. This interactive element is often equated with 'human-touch' (Khan & McWilliams, 1998) which allows the learner to interact, respond and participate in a pedagogic event. Interactivity could be of enormous help in boosting the intellectual resource base of the inquisitive minds of the open education learners (Passi, 1997).

Interactive radio instruction has gained attention as a low cost means of improving academic achievements. A brief look at the studies undertaken in the interactive radio instruction (IRI) revealed that interactive radio has been used for primary education and teacher training in teaching science, mathematics and language in African and Latin American countries. Most of the pilot projects have been found sustainable keeping in view the low cost and improved academic achievements.

IRI was used for teaching primary school mathematics in Bolivia. An evaluation of the pilot project revealed that IRI had 'revolutionized education and focused on the issues of participation and systems key in driving national diffusion and sustainability' (Freyer, 1986). In another experiment in Honduras and Bolivia, IRI was found as a powerful instructional tool for language and mathematics teaching, which was more cost effective than even books and teacher training (Tilson et al, 1990). IRI was implemented in both cassette and broadcast modes in South Africa for teaching English

Both the modes were found economic alternative ways for implementing and expanding content and delivery mechanism (Cobbe, 1993). In yet another study undertaken in Kenya, radio learners were found 'superior in listening, speaking and writing language as compared to the control learners'. However, IRI was considered better suited for teaching mathematics having limited number of correct answers than language (Norman, 1993). The evaluation of IRI in adult education in Honduras emphasized the roles of institutions, radio facilitators, training needs, marketing and funding for establishing the project as a permanent educational system (Corrales, 1995).

Another study using IRI for teaching language and mathematics in South Africa documented the process of changing the instructional design. It included theoretical concerns; issues around the role of the student, the teacher and media in a multi-channel setting; new obligations, such as teacher training as well as student learning and the challenge to reevaluate the role of radio in classroom (Leigh, 1995).

A demand for IRI in Papua New Guinea from educators emphasized the difference it can make in teaching, thus leading to 'the institutionalization of interactivity itself moving beyond the institutionalization of interactive radios' (Olsson, 1994) .

An IRI project was launched in Bolivia to provide practical support to nurses, parents and children. Through linkages with health and education networks, the audio series made difficult principles of child development more practical and easy to understand. For post-broadcast activities, the instruction was supplemented with audio cassettes, posters, guidebooks etc. The integrated approach revealed 'unexpected information' learnt by the target group (Bosch & Crespol, 1995).

In Costa Rica, two models of IRI — traditional story line instruction and soap opera drama — were developed. The first model used a traditional IRI story line in a classroom environment in which students and teachers experimented with environmental information through imagination and practice. The second model using soap opera drama proposed action in the community. The drama model was found effectively presenting the subject matter, highlighting the imaginative use of the medium for enhanced learning (Vargas, 1995). Most of these studies reported positive results and expressed great optimism in interactive radio instruction.

The Study

Considering the importance and utility of interactive radio in distance learning, the Indira Gandhi National Open University (IGNOU) launched interactive radio instruction as a pilot project on May 3,1998 for a period of one year. The phone-in facilities

available at All India Radio (AIR), Bhopal were utilised to facilitate increased interaction with the students in and around Bhopal. The hour long interactive programme (10.30 p.m.- 11.30 p.m.) was broadcast on medium wave and short wave 41m. on every second and fourth Sundays for the students of Management Studies and Bachelor Preparatory Programme (BPP). In the sessions, the experts/academic counsellors made their presentations in Hindi followed by interactive question-answer sessions with students. On each second Sunday, the BPP subjects were taken up while Management subjects were covered on every fourth Sunday.

This pilot project was undertaken at the micro level with the objective that it can be replicated in other cities if proved successful. However, there was a need to rigorously monitor and study the effectiveness of these interactive sessions and bridge the gaps, if any, before being replicated. Keeping this in view, a study was designed in three phases and certain research questions guided the study.

- What was the reach and access of the interactive radio instruction?
- What was the extent of utilisation in terms of participation and interaction?
- How did the students evaluate the expertise participation in terms of the effectiveness of content and presentations?

The scope of the study was limited to the evaluation of the participation, interaction and effectiveness of the content and presentation of the IRI. The sustainability and pedagogical effectiveness of the project will be studied in the final phase of the study.

Methodology

To achieve the objectives, a study was designed in phases. In the first phase the curtain raiser held on the first day of the launch of the project was studied. In the second and the third phases, data were collected from the students of BPP and Management, academic counsellors, staff of the IGNOU Regional Centre (RC) and AIR, Bhopal. A multiple source approach of data collection was undertaken which included questionnaires, telephonic interviews, face-to-face interactions and focus group discussions.

A questionnaire to suit the objectives of the study was designed both in Hindi and English. It included closed and open-ended questions to obtain quantitative as well as qualitative data. A sample of 101 students living in Bhopal was selected randomly and the questionnaire was administered on them. Face-to-face meetings with students, academic counsellors involved in the interactive sessions, enlightened public, AIR, Bhopal and RC, Bhopal staff were organised to discuss the effectiveness of the sessions in detail.

Findings

The findings are based on the analysis of data collected from sampled students of Management and BPP. A total of 101 respondents were administered questionnaires out of which three gave incomplete information, and, therefore, their questionnaires

were rejected at the data analysis stage. The analysis has been presented in the following sections:

- Profile of the respondents
- Awareness and participation in IRI sessions
- Effectiveness of the IRI sessions
- Participation in teleconference and counselling sessions
- Focussed group discussion.

In the findings, data have been expressed in percentages, and the terms 'respondents' and 'students' have been used interchangeably, except in focussed group discussions.

Profile of the Respondents

- Out of the total respondents, 76% were from Management Studies and 24% from Bachelor Preparatory Programme (BPP), and majority of them (79%) were males. In a programme-wise analysis, more female students were found in Management studies as compared to BPP students.
- An analysis of the age revealed that a majority of the respondents belonged to 26-30 years age group followed by 21-25 age group. Sharp programme-wise variations were perceptible as majority of the Management students belonged to 26-30 years age group whereas BPP students were in 21-25 age group. Not a single Management student was found below 21 years and no BPP student was traced above 30 years of age.
- Data on the overall educational level of the respondents revealed that an equal percentage of students were Postgraduates and Bachelor in Engineering, followed by High School and Graduates. In a programme-wise analysis, a clear cut trend was perceived as the Management students were found to be graduates, postgraduates and engineering graduates whereas cent percent BPP respondents were educated upto high school.
- The occupation-wise break up of the respondents revealed that majority of the Management students were employed in the private sector (35%), followed by government service (21%). A section of BPP students was also found engaged in private service. The 'others' category included those engaged in agriculture or self employed. A large section of the respondents did not mention their occupation implying they may be unemployed or school dropouts.

Awareness and Participation in Interactive Radio Instruction

- Majority of the students (82%) were aware about the IRI being organised through AIR, Bhopal. The awareness was relatively higher among the students of Management Studies. Their first reaction over the launch of interactive radio counseling was of optimism. They termed it a step in the right direction which enabled them to seek information sitting at homes itself. They observed that the phone-in facility gave them an opportunity of getting up-to-date and complete information from experts.

- The main source of information about the IRI was the IGNOU Regional Centre followed by friends/relatives, newspapers and radio announcements. Some of the respondents mentioned more than one source of information.
- About 43% respondents participated in IRI. A higher participation was shown by BPP students as compared to Management students.
- The level of participation by students declined as only a small section reported participating frequently. Majority of them participated occasionally (64%) and a significant section reported participating rarely. The reason given by them for low level of participation were non-availability of radio/phones at the time of broadcasts, particularly at the workplaces.
- Among those who participated in the IRI, a total of 29% respondents posed questions/queries. Out of them 42% were from Management Studies and 58% from BPP. They were largely satisfied with the answers given by the resource persons. However, some argued that they were unable to relate the information as they did not have the study material.
- A significant section found the phone constantly busy highlighting the need for providing more than one telephone line exclusively for interaction.
- An analysis of the audio recordings of the sessions revealed that in addition to the students enrolled with IGNOU, students enrolled with MP Bhoj Open University, University of Bhopal and enlightened public also participated and posed questions in the IRI. Further analysis of the audio recordings of the sessions revealed that on an average 8-10 questions were asked by the students in an hour long session.
- A comparative analysis revealed a high level of awareness but a declined rate of participation and interaction which was more pronounced among the students of Management as compared to BPP students.

Effectiveness of the Sessions

To ascertain the pedagogic effectiveness of the IRI, a number of variables were studied. These were the medium of instruction, quality of the content and presentation.

- The respondents were sharply divided in their views so far the medium of instruction was concerned. A majority of the BPP students (93%) argued that IRI should be offered through Hindi medium. However the Management students showed their preference for English as most of them found it difficult to learn the concepts in Hindi. They observed that technical terms used in Management programme were better understood in English as the study material was in English. A section of Management students stated that presentations should be a mix of Hindi-English for optimum results.
- Majority of the respondents found the content relevant and updated which was supplemented with additional information vis-a-vis the printed text. They observed that adequate examples were cited by experts and the sessions could help them achieve the course objectives.

- A section of respondents observed that efforts should be made to provide more in-depth information with the help of suitable and convincing examples. Some were of the opinion that the resource persons need to be more specific, illustrative and patient while addressing or responding to student queries.
- Some respondents argued that repeated phone calls in-between the sessions interrupted the learning process as such calls should be held back until one query is dealt with in detail.
- Majority of the respondents found the presentations of the experts interesting and the speed of the presentations satisfactory. They observed that experts were able to answer queries to their satisfaction. A section of the respondents, however, observed that the speed should be slow enabling them to absorb the information. Some argued that the experts were not able to answer their queries effectively and the presentations could have been made more interesting.
- Data analysis regarding the adequacy of the duration of the sessions revealed that majority of the respondents found the duration adequate, a significant section found it inadequate and the remaining were undecided.
- Among those who found the duration inadequate wanted it to be increased to one and a half hours to two hours duration. Some expressed the need for holding the IRI at least twice a month for each academic programme.

Participation in Teleconference and Face-to-Face Counselling Sessions

It was important to consider the access to media and exposure to IGNOU telecasts and participation in teleconference and counselling sessions among the target group. This was done to obtain a comprehensive picture as well as to ascertain the effectiveness of the IRI vis-a-vis the above mentioned variables.

- Data analysis showed an encouraging trend as majority of the respondents reported having an easy access to newspapers, television and radio. The access to tape-recorders and telephones was found to be quite high among the respondents; however, computer, fax and VCR recorded a moderate access. The e-mail and fax were available to a section of Management students only. Computers, fax and e-mail were mostly available to the respondents at their workplaces; however, newspapers, radio, television and VCR were available at home. Newspapers and telephones were available at both the places: workplace and home.
- More than half of the respondents were found exposed to IGNOU telecasts. The percentage was higher among the students of Management as compared to BPP students. It is worth mentioning here that almost half of the respondents were not exposed to IGNOU telecasts, thus limiting their impact.
- Half of the Management and only a moderate section of BPP students were aware of the teleconference sessions, and only a negligible number of the students participated in them. Inadequate information about the teleconferencing schedules and distant location of the Regional Centre, etc. were some of the reasons given by them.
- To a question as to how would they rate the IRI with teleconferencing, the respondents observed that both being interactive in nature had almost similar

objectives; however local radio instruction was decentralised and can answer the queries at the local level and students can avail the facility by sitting at home itself. However, a small section observed that teleconference being a visual media was more interactive and effective than IRI.

- An overall participation of the respondents in face-to-face counselling sessions was found to be moderate. The participation of BPP students in these sessions was reported higher than Management students.
- Majority of the students expressed the need to form informal peer groups to share their academic/pedagogic problems, ideas and information, to make learning effective as well as interesting.
- A comparative analysis of the participation of respondents in teleconference, face-to-face counselling and interactive radio counselling sessions revealed a higher participation rate in IRI. The reasons can be the easy availability of radio among the target group, convenient, decentralised and interactive nature of IRI.
- A total of 37% respondents offered suggestions to make IRI more effective. Their specific suggestions related to increase in the frequency of IRI, prior intimation about the topic, repeat broadcast in the evening slot, more publicity, term-end tests based on IRI and discussion on assignment questions.

Focused Group Discussion

To assess the impact of the interactive radio pilot project multiple sources of data collection were used. Besides questionnaire-based responses, focused group discussions with students, academic counsellors, AIR and Regional Centre staff were also conducted to obtain a comprehensive picture of the IRI project.

About fifty students attended the discussion. The discussion was also attended by those students who could not participate in the IRI due to one or the other reason. Some academic counsellors who were not engaged in IRI also participated in the discussion. The main findings were as follows:

- Majority of the students were aware of the IRI organised through AIR, Bhopal. Besides publicity given through newspapers and radio, all the students in Bhopal city received information about the sessions through letters by the IGNOU Regional Centre, Bhopal.
- In spite of being aware of the IRI, a large chunk of the students did not participate and/or listened to the sessions. The main reasons reported by them were their being away from the houses and non-availability of radio sets at the time of broadcasts. The sessions however became gradually popular among students.
- The respondents reported that the IRI was useful for them because they could participate in the sessions from their home or the workplace, and the sessions were in Hindi, their mother tongue.
- Besides IGNOU students, the students of MP Bhoj (Open) University, Bhopal University, and general public also listened and participated in IRI. They also asked questions on the presentations made by experts.

- The opinion of students was divided about the duration of the sessions, as about half of them preferred not to comment while according to less than half of them the duration was adequate. Some of them demanded to increase the duration of the session.
- The Management students suggested that the frequency of the IRI sessions should be increased to at least twice a month.
- The present timings seemed appropriate for the students. However they opined the interactive radio sessions should be repeated in the evening for wider use.
- It was suggested that the topics for IRI should be selected locally by the academic counsellors in consultations with the students.
- One session every month should be devoted to the students' queries related to their study.

Discussion

The ability to interact is a key feature of the teaching-learning process. Thus interaction as a high level feedback is important in the educational process. This fact is recognised by all theories of learning and all schools of thought. In the distance mode of learning the students learn through interaction with learning materials and distance teachers. The quality of interaction depends on various factors, such as the maturity of students, the quality of learning materials, the resourcefulness of teachers, support to the students in their learning endeavour, etc. (Forsyth, 1996). In this study IRI catered to adult learners who were supplied printed learning materials. The resourceful and effective academic counsellors were selected for presentation of sessions and interaction with learners to resolve their queries and doubts to their satisfaction. These factors qualify IRI for quality interaction for optimum learning.

Another feature of IRI was that the one-to-many model, i.e. the answers given by the teachers could be shared among many learners, made the system (IRI) further cost effective. Unlike one-to-one model, the questions raised by the learners and the answers given by the teachers were shared by all the listeners participating in IRI. Moreover, the teachers were available in person in the city to help learners solve their problems.

To make effective use of IRI, the unique strengths of radio broadcast need to be exploited. Some of the limitations can be converted into its strengths. IRI can be effective if the learners take up responsibility of their study. There is a need for self-determination, self-discipline and self-motivation to take optimum advantage of IRI. Just making IRI accessible will not serve the purpose unless it is utilised meaningfully by the students. The students need to adhere to a fixed schedule of IRI and their motivation will enable them to gain maximum from interactive radio counselling/tutorial. In this way some of the limitations of IRI can be overcome and transformed into its strengths.

On the part of the academic counsellors there is a need to be innovative in exploiting the potential of the medium and ensuring fullest impact of interactive sessions on the students. There is a need to design and use different formats to arouse and sustain the interest of the students. Experimentations to assess the pedagogical effectiveness of the

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system can be conducted. Furthermore, IRI demands a rigorous planning and monitoring: the systematic and advanced planning at all the stages of IRI viz., designing instruction, informing the students, delivery of information and utilising the sessions. To ensure whether the system functions as per the instructional design, it must be periodically monitored and necessary modifications be incorporated. Formative evaluation will make IRI more suited to the needs and requirements of both the institutions and the students.

Conclusions

A pilot project was launched from AIR, Bhopal to utilise radio effectively in the distance learning, for providing interactive radio instruction to the students of Management Studies and BPP. A need to study the project was felt to ascertain the overall effectiveness of interactive radio instructions.

The findings revealed a high level of awareness about the interactive radio instruction among the target group. About half of the students participated in the IRI and one third of them interacted with the resource persons by posing questions. The students gave a number of reasons for low interaction including non availability of radio/ phones at the time of sessions. A section of students found the phone constantly busy highlighting the need for providing more than one telephone line exclusively for interaction.

The students who participated expressed an overall satisfaction with the presentations of the experts who gave relevant and updated information. However, some emphasised the need for imparting specific information illustrated with suitable examples for increased comprehension. The response to the medium of instruction in Hindi evoked a divided response as the students of Management showed their preference for English in sharp contrast to the students of BPP. The duration of the sessions was found to be adequate. The students expressed the need for answering one question in totality before taking up the next call.

To obtain a comprehensive picture, interactive radio instruction was studied vis-a-vis teleconference and face-to-face counselling. The participation of students in IRI was found higher than teleconference and face-to-face counselling sessions. Thus, local radio instruction can emerge as an effective mode of teaching-learning by reaching out to distant learners at a low cost in a decentralised manner. Instruction imparted at the local level can enhance the accessibility as listeners can avail it sitting at their homes. Topics for the sessions may be suggested by students in consultation with counsellors thus, making them truly participatory and learner-centred. In addition to the primary audience, the counselling sessions can cause a ripple effect by reaching out to the secondary audience as well.

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