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Impact of Electronic Media in Distance Education: A Study of Academic Counsellor's Perception

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Media/Technologies in Distance Education

Distance education is distinctively and widely acknowledged for it's exhaustive utilization of information and communication technologies for teaching – learning process. A variety of media such as radio, television, computer and Internet etc are being used as a part of learning material by many Open and Distance Learning (ODL) institutions. As a result, course delivery in such institutions is multi-channel; multi-media mix (Kulandai Swaymy, 2002). The requirements of the distance education for developing the course material using the multi-media approach has necessitated, apart from print material, embracing of technologies such as radio, television, audio and video cassettes. Last decade has witnessed a virtual explosion in the advancements made in several areas of technology especially those relating to computer, networking and communications, which have a direct bearing on the distance education system

There are some positive educational implications associated with using technologies in Distance Education, like the availability of greater variety of learning resources; improved opportunities for individualities learning; the possibilities of greater control for students over their learning; more extensive coverage via technologies and therefore greater access to them; greater flexibility offered by the wide range of technologies; characteristic fall in the cost of new technologies as they become established; and there is a higher degree of interactivity as convergence occurs between old and new technologies (Khan, 1996).

Because of their qualities, such as greater delivery capabilities, contributing to specific learning activities, promoting participatory learning, motivating the learners to get involved with learning activities, accommodating individual needs and extending the role of teacher etc electronic media such as radio, television, computer and Internet etc have been embraced as a part of learning material by many ODL institutions. However, in practice, the pattern of technologies use among institutions across the world are varied, and are commonly influenced by non-pedagogical factors, such as cost, access and availability as much as by pedagogical factors. The ways in which different institutions employ any one particular technology are also subject to great variation (Harry and Khan, 2000).

Academic Counselors In Distance Education

The academic counselors in distance education system play a key role in enabling the students to become an active and effective learner. They set the context, help students pose questions to explore, stimulate problem solving, and give students tools and resources to use so that they - the students - can construct knowledge (Means et al, 1993). Their support and motivation helps the distance learners to develop necessary skills and confidence within themselves to achieve their academic goals. As a facilitator of learning, the counselors are aware of as how various media can be helpful in terms of developing concepts and content, carry out inquiry processes, developing collaborative learning among the learners etc. besides meeting the individual needs in ODL system of education. Therefore, the feed back of the counselors on various functional aspects of usage of media will have a great bearing in distance education system.

This paper is an attempt to examine the perceptions of the academic counselors associated with ODL system. The assessment of the impact of using electronic media in teaching learning process under distance education system on the performance of the learners was one of the objects of this study. The parameters such as quality of assignment attempt by the learners, their active participation in counseling sessions, performance in Term-End Examinations, improvement in the skill of understanding the facts, attendance and the over all performance were considered for the purpose of the study. Since ODL institutions in India have offered a large number of programmes, the counselors have been grouped in following only four categories.

- **Counselors counseling computer courses at under graduate level (UG_C)**
- **Counselors counseling non-computer courses at under graduate level (UG_NC)**
- **Counselors counseling computer courses at Post Graduate (PG_C)**
- **Counselors counseling non-computer courses at Post Graduate (PG_NC)**

Objectives

The study was undertook with a view to achieve the following objectives
- **To prepare a bio profile of the counselors**
- **To review the availability of media at the study centers**
- **To assess the media use profile of counselors**
- **To analyse the counselors' view point on impact of media on academic activities**

Method

Questionnaire

A questionnaire was developed by the investigators to be administered to counsellors. This questionnaire was used to obtain information related to use of twelve electronic media used or might be used in by open universities in their course curriculum. Items gathering data on the personal and professional background of the respondents were also included. The impact of media on various activities were obtained on five point scale i.e improved much, improved, same as before, gone down and gone worst. Besides one open-ended question was also used to get the feedback of respondents on how to improve use of electronic media in distance education.

Collection Of Data

For the present research, a descriptive sample survey method was used for collection of data. It was because, the respondents of the study belonged to various open universities. To obtain the relevant data, 1035 questionnaires were distributed to the counsellors of various study centers of open universities in India with the request for them to fill up the Questionnaire. A time period of 45 days was fixed for receiving the filled in questionnaires. After 45 days, a reminder was sent to those who did not send it back to the researcher by that time with request to return the filled in questionnaire by another 30 days. At the end out of all the filled in questionnaires received, only 373 completely filled in were retained for analysis.

Findings

The responses obtained have been discussed under the sections: background of counselors, their media use habits, evaluation of media from learners' perspective, viewpoint for impact of media on various academic activities, problems faced by them in using media and their suggestions for improving the usage of media in teaching- learning process of distance education system. The term 'respondents', 'academic counselors' and 'counselors' have been used interchangeably for the purpose of the study.

Background of academic counselors

To collect background information of the academic counselors, they were asked the questions related to gender, age, and their highest educational achievement, and experience in distance education etc. The response frequencies are presented in Table 1.

Table 1: Demographic profile of academic counselors.

Characteristics	Frequency	Percentage	Cumulative percentage
Gender			
Male	348	93	93
Female	25	7	100
Age			
25 to 35	137	37	37
36 to 45	67	18	55
46 to 55	95	25	80
56 to 62	74	20	100
Educational qualifications			
Post Graduation	129	35	35
M.Phil	68	18	53
PhD	176	47	100
Programme wise-distribution			
UG_NC	162	43.43	43.43
UG_C	69	18.5	61.93
PG_NC	58	15.55	77.48
PG_C	84	22.52	100
Experience in Distance Education			
1 to 5	271	73	73
6 to 10	48	13	86
11 to 15	54	14	100
Encouragement from coordinator for use of electronic media			
Yes	273	73.2	73.2
Sometimes	62	16.6	100
No	38	10.2	83.4

Table 1 reveals that out of the total academic counselors under this study, males (93%) were in more in number than females (7%). 63 per cent of counselors were aged 36 and above while 37% were below age 35 years. This indicates association of senior academicians with Open University systems. The qualification wise analysis shows that nearly half of the counselors (47%) were having highest qualification of being doctorate. This may confirm the fact that most of the counselors were faculty from university system, where Ph.D. is given preference for appointment. The programme wise break of academic counselors shows that highest percentage of respondents belonged to UG_NC group (43.43%) followed by PG_C (22.52%), UG_C (18.5 %) and PG_C (15.55%). The figure of experience wise distribution of counselors indicates that nearly three fourth (72.8%) had experience between one to five years, and remaining one fourth were helping distance learners by way of academic counseling for more than five years. Further expansion of distance and open learning system in last five years in India could be the most probable reason that could be attributed to the same. A high level of encouragement from coordinator's side on use of electronic media is evident with just over 73% counselors replying affirmatively for getting coordinator's regular motivation. For 16.6% of cases it was sometimes and only one-tenth (10.2%) counselors denied any encouragement from coordinators end on the use of electronic media in counseling sessions.

Media availability at study center

Regarding availability of various media at the study centers, majority of counselors reported the availability of telephone and computer at the majority of study centers. Their responses are summarized in Table 2.

Table 2: Media availability at study center

Media/Technology	Frequency	Percent
Telephone	345	92.5
Computer	323	86.6
Internet	121	32.4
Gyan darshan	112	30
Gyan vani	70	18.8
Cable TV	82	22
Audio cassettes	227	60.9
Video cassettes	260	69.7
CD ROMs	209	56
Fax	64	17.2
Morning TV	86	23.1
Teleconference	77	20.6

It is evident from table 2 that out of various media under study, telephone was available at most of the study centres (92.5%), followed by computer (86.6%), video-cassettes (69.7%) audio-cassettes (60.9%), CDs (56%) etc. Availability of proper down linking facility of Gyan Darshan at study centres was reported by 30% counselors, while this figure for teleconferencing was only 20.6%. The percentage of counselors reporting the availability of remaining media ranged from 17.2% (Fax) to 32.4% (Internet).

Media used by counselors

The respondents were asked to provide their choices for media used by them and their feedback regarding the usage of various media for teaching activities (Table 3).

Table 3: Media used by counselors

Media/Technology	Frequency	Percent
Telephone	267	71.6
Computer	206	55.2
Internet	123	33
Gyan darshan	76	20.4
Gyan vani	54	14.5
Cable TV	58	15.5
Audio cassettes	152	40.8
Video cassettes	185	49.6
CD ROMs	115	30.8
Fax	39	10.5
Morning TV	54	14.5
Teleconference	36	9.7

The trends of media use by counselors' shows that on an average four media were used by one counselor in their academic activities. The usage percentage was highest in the case of telephone (71.6%) followed by computer (55.2%), videocassettes (49.6%), audiocassettes (40.8%) and internet (33%)) for academic interaction with the learners. Just over 20 percent counselors were taking help of Gyan Darshan for assisting learners in counseling while, Gyan Vani (15%), Cable TV (16%) and morning TV (15%) were being used by nearly 15 percent academic counselors. Surprisingly, less than 10 percent academic counselors participated in teleconferencing sessions, while open universities are incurring a lot of efforts and expenditure for academic delivery through this mode.

Further, high degree of correlation was found between the media available at the study center and the media used by the academic counselors (0.968), which is indicative of the fact that available media were being used by the counselors in their counseling sessions.

Programme- wise Media use tendency of counsellors

Analysis of media use profile indicated that counselors counseling computer courses at PG level used more number of electronic media in comparison with their counter- parts (5.26). As obvious, computer was used by all the counsellors of computer programmes in UG or PG level.

Table 4: Media use profile of counsellors (Programme- wise)

Media/Technology	UG_NC	%	UG_C	%	PG_NC	%	PG_C	%
Telephone	108	66.67	57	82.61	40	68.97	62	73.81
Computer	55	33.95	69	100	22	37.93	84	100
Internet	18	11.11	33	47.83	6	10.34	66	78.57
Gyan darshan	34	20.99	20	28.99	8	13.79	14	16.67
Gyan vani	24	14.81	12	17.39	10	17.24	8	9.52
Cable TV	30	18.52	10	14.49	6	10.34	12	14.29
Audio cassettes	71	43.83	23	33.33	28	48.28	30	35.71
Video cassettes	84	51.85	31	44.93	36	62.07	34	40.48
CD ROMs	43	26.54	30	43.48	12	20.69	30	35.71
Fax	19	11.73	4	5.8	6	10.34	10	11.9
Morning TV	26	16.05	10	14.49	6	10.34	12	14.29
Teleconference	16	9.88	4	5.8	6	10.34	10	11.9

Telephone was second choice of counsellors of UG_C group (82.6%), while counsellors of PG_C group were using internet (78.57%) as a teaching tool after the computer. Counsellors of non computer programme most frequently used telephone (UG_NC=66.67% and PG_NC=68.97%), followed by video cassettes (UG_NC=51.85% and PG_NC=62.07%). To know the variation in media usage profile of counselors, Analysis of variance –Single factor statistical test was applied. The result showed no significant variation in over all media use pattern among various groups at 1% significance level (F computed, 3.190191< F critical, 4.260642 as shown in Table 5.

Table 5: ANOVA –Single factor analysis for media used by counselors (programme-wise)

Groups	*Count*	*Sum*	*Average*	*Variance*			
UG_NC	12	528	44	877.4545			
UG_C	12	303	25.25	419.4773			
PG_NC	12	186	15.5	160.8182			
PG_C	12	372	31	675.2727			
ANOVA							
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*Fcrtic (5%)*	*Fcrtic (1%)*
Between Groups	5103.5625	3	1701.1875	3.190191	0.0327243	2.816464	4.260642
Within Groups	23463.25	44	533.25568				
Total	28566.813	47					

Analysis of viewpoint of counsellors regarding impact of media on academic activities

The perception of counsellors regarding impact of media on various academic issues, such as quality of assignment attempt, Participation in counseling sessions, writing term end examinations, understanding the facts, attendance and overall performance of the learners

were obtained on five point scale i.e. improved much, improved, same as before, gone down, and gone worst. In their responses, more than three fourth counselors visualized positive impact of electronic media on various issues associated with the academic pursuit of the learners. With in this category 36 per cent (600/1690) expected very positive improvement, 10 percent felt negative impact where as 14 percent counselors predicted no change in the situation. Their feedback on said subject is presented in Table 6.

Table 6: Impact of media on Academic Activities

Factor	Gone worst	%	Gone down	%	Same as before	%	Improved	%	Improved much	%	Total
Attendance	22	6	16	4	55	15	183	49	97	26	373
Quality of assignment attempt	34	9	6	2	53	14	214	57	66	18	373
Participation in counseling sessions	32	9	16	4	67	18	173	46	85	23	373
Writing Term-End Examinations	45	12	8	2	61	16	166	45	93	25	373
Understanding the facts	30	8	2	1	36	10	163	44	142	38	373
Improving the over all performance	22	6	0	0	43	12	191	51	117	31	373
Total	185		48		315		1,090		600		2,238
Average	8.3		2.1		14.1		48.7		26.8	8.3	

The viewpoints of counselors on said issues are discussed below:

Attendance: In the opinion of three -fourth of the counselors, electronic media has the potential in boosting up the student attendance (Improved 49% and much improved 26%) in counseling sessions, contact programmes etc. 15% counselors considered no impact (same as before) of electronic media on students attendance in various academic activities while, 10% visualized its negative impact (Gone down 4%, Gone worst 6%).

Quality of assignment can be improved with the help of electronic media. This was emphasized by 57% counselors while, 18% of them viewed much improved impact on the quality of assignment attempt. On the other hand, quality of assignment attempted by students might deteriorate, was feared by 13% of them (Gone down 2% and Gone worst 9%) and the remaining 14% percent expressed that quality of assignment was a matter of individual capability and electronic media has no role to play (same as before).

Participation in counseling sessions: 69 percent of counselors believed that with the support of electronic media active participation of distance learners can be enhanced (improved 46% and very much improved 23%) in counseling sessions. 13 percent feared that learners might become silent spectator in electronic media assisted counseling sessions (Gone down 4% and Gone worst 9%), where as remaining 18% visualized no impact (same as before) of media in learners' participation in counseling sessions.

Writing Term-End Examinations: One- fourth of counselors expected that writing skill of students for term end examination can be very much improved with the assistance electronic media, while forty six percent visualized lesser degree of improvement (improved). 14 percent of counselors visualized negative impact of electronic media on writing skills of the learners. Within this category nearly 86% of them (12/14) even feared worst impact. The remaining 16 percent neither agreed with positive nor with negative impact of electronic media on writing skill of the learners and maintained that it remains same as before.

Understanding the facts: 44 percent of counselors population hold that electronic media help learners in providing further elaborations to various difficult concepts given in their printed

self instructional material and thus help in improving the skill of students in understanding the facts. The degree of improvement was found to be of higher order (much improved) by 38 percent of counselors. Cumulatively 82 percent of counselors expected positive impact of electronic media in developing the understanding of facts in learners.

Improvement in the over all performance: Electronic media helps in enhancing the overall performance of learners. This was perceived by vast majority (82%) of the counselors (51per cent said Improved while 31 percent reported much improved). Of the remaining counselors, 12% visualized no impact of electronic media in improving the over all performance of the learners whereas 6% warned of worst impacts.

To further compare the impact of electronic media on above-mentioned issues, impact index was defined:

Impact index (Ii) (= (Iw * fw + Id *fd+ In*fn+ Ii *fi+ Im*fm) / N

Where
fw= frequency of counselors expecting worst impact on an activity
fd = frequency of counselors expecting down impact on an activity
fnc = frequency of counselors expecting no impact on an activity
fw= frequency of counselors expecting improved impact on an activity
fd = frequency of counselors expecting much improved impact on an activity
Iw ,Id ,In Ii ,Im = Index values associated with worst impact, down impact, no impact, improved impact, much improved impact on an activity.
N= Total population of counselors

Table 7: Indexing scheme

Index Value (I)	Description
5	Much improvement
4	Improvement
3	No improvement
2	Gone Down
1	Gone Worst

Table 8: Possible scaling of impact

Range	Explanations
$I_{pr} \geq 4.5$	Much improved impact
$3.5 \leq I_{pr} < 4.5$	Improved Impact
$2.5 \leq I_{pr} < 3.5$	No Impact
$1.5 \leq I_{pr} < 2.5$	Down Impact
$I_{pr} < 1.5$	Worst Impact

Higher the expected the value of impact index of electronic media on a particular issue, better the impact. Impact index of the various factors in decreasing order of impact related to electronic media is given in table 9.

Table 9: Impact index of various factors

Factor	Impact Index
Understanding the facts	4.03
Improving the over all performance	4.02
Attendance	3.85
Quality of assignment attempt	3.73
Participation in counseling sessions	3.71
Writing Term-End Examinations	3.68

From Table 9 it is evident that over all improved impact of electronic media was visualized by counselors on various academic activities. In their opinion, improvement was relatively more in understanding the facts and in over all performance of learners (impact index = 4.0) as compared to other factors.

Programme wise analysis of impact of media

To know the opinion of counselors of various programmes, impact index was calculated on programme wise data break up of views of counselors on impact of media on various academic issues as presented in Table 10.

Table 10: Programme wise Impact index of Academic issues

Factor	UG_NC	UG_C	PG_NC	PG_C	Average
Attendance	3.73	4.13	3.48	4.1	3.86
Quality of assignment attempt	3.51	4.06	3.59	4.02	3.8
Participation in counseling sessions	3.6	3.97	3.24	4	3.7
Writing Term-End Examinations	3.59	3.78	3.66	3.88	3.73
Understanding the facts	4.07	4.22	3.62	4.1	4
Improving the over all performance	4.05	4.12	3.69	4.12	4
Average	3.76	4.05	3.55	4.04	3.85

A comparison of impact indices of various factors with respect to programmes shows (Table 10) that counselors of computer programmes visualized a higher degree of improvement on various academic issues due to electronic media (UG_C=4.04 and PG_C=4.05) as compared to counselors of other programmes, while over all perception of counselors for non-computer programmes for impact of electronic media on the academic activities was relatively lower. Within the given academic activities relatively higher degree of improvement in developing the skill of understanding the fact was felt by all counselors counseling at UG level. PG counselors believed that electronic media were relatively more helpful in improving the overall performance of the learners. To compare the opinion of counselors of various programmes with regard to impact of electronic media on various academic issues, ANOVA single factor statistical test on impact indices of four groups of counsellors indicated significant difference at 1% level of significance. (Fcomputed = 11.63452 > Fcritical = 4.938215). It means the perception of counsellors on impact of electronic media on various academic activities of distance education system varied with the programme they were associated with.

Higher value of correlation coefficient (0.923) between media used by the counsellors of various programmes and their average impact index was indicative of strong positive relationship between the two parameters. It means wider the exposure of the academic counsellors on media use, more positive the perception regarding their impact on academic

activities.

Conclusions

The results of this study revealed a positive perception of academic counsellors regarding the impact of electronic media on various activities associated with teaching learning process in Distance Education. The perception of counsellors varied depending on the programmes and the level they were associated with. The counsellors of computer programme reported a relatively more positive impact as compared to others. Within the given academic activities, a higher degree of improvement in developing the skill of understanding the fact was felt by all counselors counseling at UG level, while PG counsellors believed that electronic media were relatively more helpful in improving the overall performance of the learners.

The study also indicated a high positive relationship between the media available at study centers & media used by the counsellors and number of media used by the counselors. It means the greater the media available; the higher will be their effective utilisation by the counsellors and more positive will be the perception of counsellors regarding impact of electronic media on distance education system. Therefore, steps such as availability of various media at the study centers; provision of requisite infrastructure & supporting technologies for use of various media; and developing the skill and attitude in counsellors/educators to handle the various media etc. should be taken for providing better academic support to the learners.

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