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The Contributions of Open and Distance Learning (ODL) Towards Job Performance of Veterinary Practitioners

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Abstract

An analytical study was conducted on Open and Distance Learning (ODL) programmes by veterinary university, Chennai for veterinary practitioners in Erode, Salem and Coimbatore districts of Tamil Nadu, India. Field veterinarians working in the public dispensaries / hospitals formed the sample for the study. The data was collected by mailing questionnaires to the respondents. The study revealed that the ODL courses effectively enhanced the job performance of the veterinarians in the areas of diagnosis (57.14 per cent) followed by medical treatment (49.86 per cent) at a frequency ranging from often to most often. Three-fourths (75.00 per cent) of the participants and non-participants (87.50 per cent) had medium to high level of job performance. The 'Z' test was statistically non-significant for job performance between the participants and the non-participants. Among the 14 independent variables, access to computer and training exposure was found to have a highly significant relationship with job performance in case of participants while all other variables were non-significant. The results would help the ODL developers to improve the contents and facilitate better delivery of distance education courses, so as to enhance the job performance of the veterinarians.

Introduction

Education is a means for improving the quality of the human resources. These resources are enhanced by imparting knowledge, understanding, attitude and skills. Literacy rate is one of the three components which determine the Human Development Index (HDI) of any nation (UNDP, 2005[1]). The literacy rate in developed countries is about 95.00 per cent. But India, that ranked 128th among 174 countries in the world in the Human Development Index (HDI), had a literacy rate of only 65.40 per cent (Kishore, 2003[2]).

A developing country like India with its limited resources is constrained with the establishment of a number of formal educational institutions to meet the ever-increasing demand. The growing population of a country demands a system of education which brings the learning to the doorsteps of the learner. As a result, the major percentage of population living in remote areas, working in the offices and involved in business and agriculture get benefited. Hence, distance education programmes are thought as an alternative source of educational needs.

As a valid, widely accepted and practical means of study, distance education embraces many positive characteristics, which makes education more and more open to all.

Distance education caters to the needs of:

1. students located in geographically remote areas
2. students who had discontinued their formal education owing to various circumstances
3. students who like to update / refresh their knowledge to present in an existing discipline or in a new area (Sahoo and Bhatt, 1996[3]).

The Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) had launched two Open and Distance Learning (ODL) programmes in collaboration with Common Wealth of Learning (COL) in December 2003 to benefit the practicing veterinarians of the State. The courses were expected to deliver inputs which would help in enhancing the knowledge and skill of the learners. This would reflect on their job performance. Since delivery of such course on distance education mode was a pioneering effort to update the knowledge and skill of veterinarians who could not attend formal course / training while on their job, it was thought appropriate to evaluate one of the ODL programmes namely "Recent trends in disease diagnosis and treatment of ruminants". The course was delivered through its nodal centre at the Veterinary University Training and Research Centre (VUTRC) located at Tirunelveli, Tamil Nadu, India to benefit the practicing veterinarians of the State. A total of 120 practicing veterinarians who had enrolled in the above ODL programme in two batches (three months for a batch) during the months of February to August 2005 formed the experimental group. Questionnaires pertaining to the study were sent to all the 120 (60 per batch) enrolled practicing veterinarians, out of which a total of 40 responded from the two batches and thus formed the sample size for the experimental group. The respondents of the experimental group belonged to Erode, Salem and Coimbatore districts of Tamil Nadu. The list of practicing veterinarians who have not enrolled in the ODL programme and who belonged to the three districts of Tamil Nadu namely Erode, Salem and Coimbatore were prepared in consultation with the Joint Directors of the respective districts. From the list of non-participants a sample size of 40, equivalent to that of experimental group for the study were selected by simple random technique to form the control group.

An attempt was therefore made to analyze the ODL programme in order to evaluate and improve the quality of the course to benefit the future learners with the following objectives.

1. To understand the general perception of the participants towards the usefulness of distance education course towards their job performance.
2. To find out the level of job performance among the beneficiaries of the ODL course.

3. To work out the relationship between the profile and job performance of the respondents.

Methodology

The design frame consisted of one experimental and one control group. Out of the 120 veterinary practitioners who had enrolled in ODL course on "Recent Trends in disease diagnosis and treatment of ruminants", 40 of them who responded to the questionnaire formed the experimental group. Among the non-participants of the ODL programme, 40 veterinary practitioners working under similar conditions formed the control group for the study. The respondents were from Erode, Salem and Coimbatore districts of Tamil Nadu, India. The data were collected using a well structured and pre-tested questionnaire.

The job performance in the present study referred to the level of success achieved by an individual as a result of his efforts in performing his / her duties in veterinary dispensaries / hospitals. It was measured by the scale developed by Sasidhar *et al.* (2002[4]). The scale consisted of 38 statements which were included in the study under four major headings. The response for each statement was measured using a five point continuum scale as detailed below.

Response	Most often	Often	Sometimes	Rare	Never
Score	4	3	2	1	0

The score obtained by the individual for each item was summed up to arrive at the total score. The maximum and minimum score one could obtain ranged between 152 and zero. The test was administered among participants and non-participants to assess the difference in job performance due to their learning in distance course contents and also to find out the perception of participants towards the distance course contents in terms of job performance. On the basis of the total score obtained, the respondents were classified into low, medium and high groups based on mean and standard deviation for the purpose of interpretation of results. The relationship with 14 independent variables taken up for the study based on judges' opinion was worked out by making use of the mean score. The scores for each course content for job performance was worked out and divided by the number of respondents to arrive at the mean score of the content.

The test was administered among the experimental group who had completed the ODL programme and also among the control group to assess the difference in the job performance. The data was also subjected to 'Z' test to know the test of significance.

Results and Discussion

General perception of participants towards the effectiveness of ODL on job performance

Perception of participants of the ODL programme towards the effectiveness of distance education course on job performance was analyzed based on the mean score and is presented below in Table 1.

Table 1 indicates the perception of the participants towards their job performance. The participants perceived that the ODL course effectively enhanced their job performance on the areas of disease diagnosis (57.14 per cent), medical treatment (49.86 per cent), surgical treatment (37.50 per cent) and post-mortem examination (40.25 per cent) at a frequency ranging from often to most often.

Table 1. Perception of participants towards the effectiveness of distance education course on job performance

Job roles		Job performance				
		Most often	**Often**	**Sometimes**	**Rare**	**Never**
A. Diagnosis						
1.	Diagnose diseases through preliminary examination (History taking)	29	8	3	-	-
2.	Diagnose diseases through clinical examination (Laboratory examination, x-ray and ultrasonography)	8	15	13	4	-
3.	Diagnose diseases through specific examination (Palpation, percussion and auscultation)	17	11	8	4	-
4.	Send specimen to the laboratory to conform diagnosis	9	15	7	9	-
5.	Make prognosis of the diseases	6	14	14	6	-
6.	Issue health certificates	3	13	12	10	2
7.	Issue PM certificates	1	11	11	12	5
	Average percentage	**26.07**	**31.07**	**24.29**	**16.07**	**2.50**
B. Medical treatment						
1.	Perform fluid and electrolyte therapy	28	7	4	-	1
2.	Conduct drenching	4	13	14	8	1
3.	Inject sub-cutaneous	20	7	9	3	1
4.	Inject intra-muscular	25	6	6	2	1
5.	Inject intra - venous	23	9	5	2	1
6.	Inject intra - peritoneal	10	4	11	10	5
7.	Infuse intra-ruminal	2	4	11	13	10
8.	Per rectum	6	2	4	11	17
9.	Perform blood transfusion	4	4	4	10	18
10.	Providing antimicrobial therapy	26	5	3	3	3
11.	Providing anthelmintic therapy	25	8	4	2	1
12.	Treatment of toxicological problems	3	9	21	6	1
13.	Supportive therapy	22	9	7	1	1
14.	Specific examination	5	17	10	6	2
15.	Send specimen to the laboratory to conform diagnosis	4	7	17	9	3
16.	Make prognosis of the diseases	8	13	10	5	4
17.	Issue health certificates	3	8	11	10	8

Job roles		Job performance				
		Most often	**Often**	**Sometimes**	**Rare**	**Never**
18.	Issue PM certificates	4	5	10	10	11
	Average percentage	**30.83**	**19.03**	**22.36**	**15.42**	**12.36**
C. Surgical treatment						
1.	Dress Wounds	26	9	2	2	1
2.	Conduct rumenotomy	3	3	15	12	7
3.	Conduct laparotomy	1	3	8	16	12
	Average percentage	**25.00**	**12.50**	**20.83**	**25.00**	**16.67**
D. Post-mortem examination						
1.	History taking before conducting PME	25	9	3	2	1
2.	Conduct external examination	11	19	6	2	2
3.	Conduct internal examination	10	17	9	2	2
4.	Examination of various organs	8	14	10	6	2
5.	Collection of samples or laboratory tests					
a.	Microbiological examination	5	7	14	11	3
b.	Parasitological examination	5	7	15	10	3
c.	Histopathological examination	-	7	12	15	6
d.	Toxicological	-	5	12	16	7
6.	Attend veterolegal case	1	5	12	16	6
7.	Reporting time	-	6	12	15	7
	Average percentage	**16.25**	**24.00**	**26.25**	**23.75**	**9.75**
	Overall percentage (A to D)	**24.54**	**21.65**	**23.43**	**20.06**	**10.32**

n = 40

On an overall analysis of the participant's perception towards the job performance, it could be concluded that the participants were performing their job roles ranging from most often to often which they had learnt through the ODL course. This might be due to the fact that ODL programme provided an opportunity to enhance their job performance and the course content was closely related to their job chart.

Distribution of respondents according to their job performance

Table 2. Distribution of respondents according to their job performance

Sl. No	Job performance	Participants (40)		Non-participants (40)	
		Number	**Percentage**	**Number**	**Percentage**
1.	Low	10	25.00	5	12.50
2.	Medium	19	47.50	31	77.50
3.	High	11	27.50	4	10.00
	Total	**40**	**100.00**	**40**	**100.00**

Mean = 92.28 SD = 27.43 N = 80

Table 2 presents the distribution of respondents according to their job performance. It could be concluded that an overwhelming majority of the participants (75.00 per cent) and non-participants (87.50 per cent) had medium to high level of job performance. The rest of the participants (25.00 per cent) and non-participants (12.50 per cent) showed low level of job performance. The fact that the ODL course was taken up recently and needed some more time to practice what they had learned, the knowledge was not translated into actual practices which needs more time to be exhibited. Hence no much difference between participants and non-participants in terms of job performance.

Difference in job performance between the participants and non-participants of ODL programme

The difference in job performance between the participants and non-participants of the ODL programme was statistically analyzed through 'Z' test. The same is presented in Table 3 and discussed below.

Table 3. Difference in job performance between the participants and non-participants of ODL programme

S. No	Dependent variables	Participants		Non-participants		'Z' Value
		Mean	SD	Mean	SD	
1.	**Job performance**	**93.76**	**30.96**	**90.79**	**24.15**	**0.478^{NS}**

NS - Non-significant at 5% level N = 80

It could be observed from Table 3 that the difference between participants and non-participants in terms of job performance was found to be statistically non-significant. Thus it could be concluded that the shorter duration of time that elapsed between the completion of the ODL programme and the present study might be the reason for non-significant difference between participants and non-participants in job performance. The respondents who had participated in the ODL program have not exhibited immediate change in their job performance when compared to that of non-participants. The learners did not exhibit much difference in the job performance after undergoing the course. This might be due to skill adopted by the learners of ODL in their job.

Relationship between the profile and job performance of the respondents

The relationship between independent and the dependent variables, job performance was worked out with the help of Chi-Square test and presented in Table 4.

Table 4. Relationship between profile and job performance

Sl. No	Independent variables	df	Participants X^2	Non-participants X^2
1.	Age	2	0.84^{NS}	0.51^{NS}
2.	Educational qualification	4	0.57^{NS}	0.84^{NS}
3.	Academic achievement	3	0.51^{NS}	4.37^{NS}
4.	Family type	1	0.00^{NS}	1.72^{NS}
5.	Family size	1	0.79^{NS}	2.02^{NS}
6.	Gender	1	0.39^{NS}	0.21^{NS}
7.	Marital status	1	0.00^{NS}	0.21^{NS}
8.	Experience	2	1^{NS}	1.70^{NS}
9.	Number of trainings attended	2	10.37^{**}	2.99^{NS}
10.	Distance between residence and place of work	3	0.27^{NS}	2.39^{NS}
11.	Relationship with superior	4	0.67^{NS}	3.33^{NS}
12.	Place of posting	3	1.36^{NS}	0.65^{NS}
13.	Access to computer	3	27.19^{**}	2.84^{NS}
14.	Personal time use	2	0.97^{NS}	0.91^{NS}

NS - Non-significant at 5% level
* - Significant at 5% level
** - Significant at 1% level

It is seen from the Table 4 that out of 14 independent variables, only two variables namely training exposure and access to computer had highly significant positive relationship with job performance of participants. The remaining 12 variables showed non-significant relationship with job performance of participants. Among non-participants, all the 14 independent variables had positive non-significant relationship with job performance. The significant positive relationship of training exposure and access to computer with job performance might be due to the fact that more the number of trainings undergone by the veterinary practitioners and more the usage of modern technology mediated learning, higher will be the ratio of takes for latest technical know-how and better would be their application of professional skill in the field level. This is in line with Daniels (2005[5]) where he stated that conventional means alone are unable to meet the challenge. ODL, coupled with the application of appropriate information and communication technologies, can play a central role in delivering quality education. Similar positive relationship with job performance was observed by Reddy (1982[6]).

Conclusions

India is a developing country with limited resources making its way in a challenging world. It is imperative that any investment in ODL initiatives are done wisely to maximize the return educationally, socially and financially (Grimwood, 2006[7]).

From the above study it was found that three-fourths (75.00 per cent) of the participants and 87.5 per cent of non-participants had a medium to high level of job performance. The 'Z' test conducted to evaluate the ODL programme was statistically non-significant for job performance between the participants and the non-participants. This may be due to the reason that less exposure and require more hands on training, especially to individual learner, so as to practice skill learned on their job. This was also supported by the study of Guliang Gu (2007[8]) where he found that the distance teaching mode is weak in performing laboratory work, as laboratory required suitable locations, expensive instruments, qualified tutors with skills and also required participants to pay the relatively high fee. The study reveals that for the above reasons, it is apparent that high retention rates in distance education program for participants in the field of Science and Technology is not an easy task.

New practical and effective teaching approaches are required using new techniques to meet these challenges. To use professional software directly in some scientific courses is a practical way to raise participant's interest and to promote their professional skills. This implies that the course content delivered should be modified and it should be suitably informed to the employees of Directorate of Animal Husbandry so as to make good use of the courses.

The results of this study may serve as a guide to the veterinary institutions for developing future ODL programmes for veterinary practitioners in formulating ways and means for improving the ODL programme in veterinary and animal sciences in future.

End Notes: B.M., Maheswari and N.K. Sudeep Kumar. "The Contributions of Open and Distance Learning (ODL) Towards Job Performance of Veterinary Practitioners." *Online Journal of Rural Research & Policy* (5.7, 2010).

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