Applying ADDIE Model to Evaluate Faculty Development Programme

Atul Bamrara*

Abstract

We exist in a technology era where everything is controlled via electronic devices and education is also highly impacted from ICT (information and communication technology) tools. The present study is an attempt to highlight the training need analysis approach and its applicability. Further, it focuses on the application of ICT tools to analyse the data patterns during training need. ADDIE approach has been chosen to explore the correlation between techniques/approaches of training need analysis and evaluation of training programme.

Introduction

Education is a fundamental human right and since Independence, there have been various attempts at improving the status of education in India. The significance of education has been enshrined by the founding fathers in the Indian Constitution, and Article 45 of Indian Constitution states—

"The State shall endeavor to provide, within a period of ten years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of fourteen years (MHRD, 2017)."

The Constitution of India provides various constitutional provisions with reference to education and equity under Articles 15, 16, 19, 25, 28, 29, 46, 146, 244, 330 and 335. In spite of these constitutional and legislative provisions, the outcome is not as

* *Academic Counsellor*, School of Computer and Information Sciences, Indira Gandhi National Open University. New Delhi.

healthy as it must be. The child is the focus of our whole education system and teachers play a pivotal role in shaping the child's ideology. The quality of education depends largely on the quality of its teachers, but this observation has not been expanded to the intention that quality teachers come out from the institutions where high-quality teacher educators exist. A significant contribution of teacher preparation in its development of teachers' aptitude to examine teaching from the learners' point of view brings diverse experiences and analogies to the classroom (Darling-Hammond, 2000).

Although there are serious drawbacks in teacher preparation programmes either in-service or pre-service, formal teacher education persists to have low 'ecological validity', and emphasises tensions in the selection and technical expertise of DIET staff, and in their attitude towards basic teachers, that confine engagement with local contexts (Dyer et al., 2004). According to Anurag Behar, CEO, Azim Premji Foundation, there are four methods to improve our education system—

- In order to perform better, the faculties must be paid better, which will then lead to improvement (Ballou and Podgursky, 1997).
- Government should attempt to attract scholastic fraternity to become teachers. Coherent salary packages, high standard recruitment practices and conditions to support professional satisfaction are some key areas which should be kept into consideration.
- There is no alternate of a good teacher and the capacities of teachers must be developed to perform better via high-quality teacher trainings.
- Professional development of existing workforce is a must to improve the education system.

The teachers who are more prepared for teaching are more confident and successful with students than those who have had little or none (Darling-Hammond, 2000). The research also indicates that the reforms in teacher training programmes (e.g.,integrated/ professional programmes) resulted into more effective teaching fraternity who wish to stay in this profession. The policies implemented by States regarding teacher training and professional development may create a significant difference in the qualifications and capacities that teachers bring to their profession (Darling-Hammond, 2000). Policy recommen-dations comprise the development and upgrading of teacher training programmes in India as well as other developing countries, along with thorough research into the demographic, structural and cultural framework for each programme and focusing on the advancement of teacher knowledge and aptitude in specific subject areas.

Review of Literature

The ADDIE Model was first developed by Florida State University for in-service training of military personnel and was further extensively applied for other relevant areas. The most extensively used style for developing new training programmes is Instructional Design (ID). This approach offers a sequential system to evaluate the learners' requirements, the design and development of training objects, and the evaluation of the usefulness of the training programme (Kruse, 2002). Instructional designers believe that the use of systematic design procedures can make instruction more useful, well-organised and applicable than less precise approaches to planning instruction.

The system approach entails an analysis of how its constituents interrelate with each other and requires synchronisation of all activities. Nevertheless, a multiplicity of systematic ID processes (Dick, Carey and Carey, 2005, Kemp, Morrison and Roos, 1998, Ragan and Smith, 1999) have been illustrated, but all descriptions comprise the core components of Analysis, Design, Development, Implementation and Evaluation (ADDIE) to ensure analogy among goals, strategies, evaluation as well as the efficacy of the resulting instruction (Gustafson and Branch, 2002). The ADDIE model is a practical and easy framework for ID. The process can be applied in a multiplicity of settings, because of its methodical and generic structure.

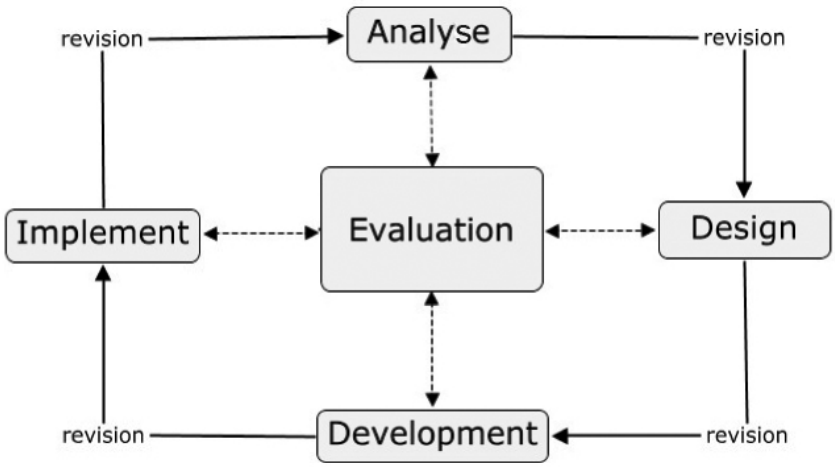

Figure 1. *ADDIE Model*

The structure provides trainers by recognising the trainee needs and applies this information to the design and development of the training programmes (Petersen, 2003).

Objectives of the Proposed Research

The objectives of this research are to—

- explore the correlation between the various approaches of training need analysis and evaluation of training programmes;
- explain the relationship between the data analysis techniques and evaluation of training programmes and
- explore the ADDIE Model with the help of appropriate data sets.

Hypothesis

H_0: There is no significant relationship between Techniques of Training Need Analysis and Evaluation of the Training Programme

H_0: There is no significant relationship between Approaches of Training Need Analysis and Evaluation of the Training Programme

Research Methodology

ADDIE Model has been used for the purpose of research. A questionnaire has been developed using the various components of ADDIE Model, *viz.*, Analysis, Design, Development, Implementation and Evaluation. Demographic profile of the respondents has been sought in the form of their age, work experience, designation and qualification, which will further assist the study. Respondents were supposed to supply their views on a five-point Likert scale ranging from 1—Strongly Agree (SA), 2—Agree (A), 3—Neutral (N), 4—Disagree (D) and 5—Strongly Disagree (SD). The collected data has been analysed using R Programming to explore the necessary statistic (Chi Square Value and Karl Pearson Coefficient of Correlation) to relate various variables identified in the study.

Sampling

For the sampling purpose, the faculty members of District Institute of Education and Training (DIET) in Uttarakhand have been selected randomly using Stratified Random Sampling Method, because it provides a better estimate of the whole and it results in more reliable and detailed information. DIETs[1] act as nodal agencies to provide academic development and literary support at district level to all the elementary level teachers and it is their prime responsibility to strengthen the teaching aptitude among teaching fraternity. There are 13 DIETs functioning in the State, Tehri, Gauchar, Ratura, Roorkee, Charigaon, Barkot, Dehradun, Almora, Didihat, Lohaghat, Bageshwar, Bhimtal and Rudrapur and there are approximately 215 faculty members working in various departments (In-service Programmes Field Interaction

[1]DIETs act as lightouse in the field of education, as stated by MHRD.

Table 1
Demographic Profile of the Respondents

Demographic Profile		Frequency	Percentage (%)
Designation	Lecturer	88	88
	Senior Lecturer	12	12
Highest Qualification	Masters with B.Ed.	42	42
	Masters with M.Ed.	42	42
	Ph.D.	16	16
Experience (in Years)	<10 Years	24	24
	11–20 Years	24	24
	21–30 Years	40	40
	>30 Years	12	12
Gender	Male	42	42
	Female	58	58
Age (in Years)	25–35	16	16
	36–45	47	47
	46–60	37	37

Innovation and Coordination, Pre-service Teacher Education, District Resource Unit, Planning and Management, Educational Technology, Work Experience, Curriculum Material Development and Evaluation, Administrative Branch, etc.) of the institute, so the calculated sample for the study becomes 100[2]. The information has been sought from the respondents either personally, or through e-mail or Google forms. The demographic profile of the respondents is presented in Table 1.

Data Analysis

It is quite evident from Table 2 that the Karl Pearson Coefficient of Correlation for the variables A_1 and E_1 is 0.004, which shows a positive correlation. The calculated value of x^2 for 8 degrees of freedom at 5% level of significance is 8.456, whereas the tabulated value is 15.507. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant relationship between conducting Training Need Analysis using observation method and

[2] $n = \frac{z^2 - p - q = N}{e^2(N-1) + z^2 - p - q}$, where p = 0.02, q = 0.98, N = 215, e = 0.02, z value at 95% Confidence Level

Table 2

Cross-tabulation

I have conducted the TNA (Training Need Analysis) using Observation Method (A_1)	**Feedback forms have been collected from the trainees (E_1)**						
		SA	A	N	D	SD	Statistics
	SA	26.3%	57.9%	15.8%	–	–	x^2 = 8.456
	A	33.3%	41.7%	25.0%	–	–	
	N	11.1%	33.3%	55.6%	–	–	R = 0.004
	D	36.6%	36.7%	26.7%	–	–	
	SD	50.0%	16.7%	33.3%	–	–	df = 8
	Presentations and demonstrations have been given by each participant (E_2)						
		SA	A	N	D	SD	Statistics
	SA	0.0%	21.1%	21.1%	15.8%	42.1%	x^2 = 25.3
	A	8.3%	13.9%	25.0%	27.8%	25.0%	
	N	11.1%	22.2%	0.0%	44.4%	22.2%	R = -0.11
	D	0.0%	23.3%	13.3%	50.0%	13.3%	
	SD	33.3%	16.7%	16.7%	0.0%	33.3%	df = 16
	Post-training behaviour of the trainees has been observed (E_3)						
		SA	A	N	D	SD	Statistics
	SA	0.0%	10.5%	26.3%	26.3%	36.8%	x^2 = 16.02
	A	2.8%	2.8%	19.4%	38.9%	36.1%	
	N	0.0%	22.2%	55.6%	11.1%	11.1%	R = 0.016
	D	3.3%	13.3%	13.3%	26.7%	43.3%	
	SD	0.0%	0.0%	16.7%	33.3%	50.0%	df = 16
	The teaching/learning of teacher/kids has been improved after training (E_4)						
		SA	A	N	D	SD	Statistics
	SA	–	–	31.6%	47.4%	21.1%	x^2 = 5.78
	A	–	–	47.2%	38.9%	13.9%	
	N	–	–	55.6%	44.4%	0.0%	R = –0.069
	D	–	–	50.0%	40.0%	10.0%	
	SD	–	–	16.7%	66.7%	16.7%	df = 8

feedback collection from trainees. The Karl Pearson Coefficient of Correlation for the variables A_1 and E_2 is -0.11 which shows a negative correlation. The calculated value of x^2 for 16 degrees of freedom at 5% level of significance is 25.3, whereas the tabulated value is 26.296. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant relationship between conducting TNA using observation method and demonstration of acquired skills by trainees.

The Karl Pearson Coefficient of Correlation for the variables A_1 and E_3 is 0.016, which shows a positive correlation. Calculated value of x^2 for 16 degrees of freedom at 5% level of significance is 16.02, whereas the tabulated value is 26.296. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant relationship between conducting TNA using observation method and post-training behaviour of trainees. The Karl Pearson Coefficient of Correlation for the variables A_1 and E_4 is -0.069, which shows a negative correlation. The calculated value of x^2 for 8 degrees of freedom at 5% level of significance is 5.78, whereas the tabulated value is 15.507. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant relationship between conducting TNA using observation method and improvement in teaching/learning.

The Karl Pearson Coefficient of Correlation for the variables A_2 and E_1 is 0.151, which shows a positive correlation. The calculated value of x^2 for 8 degrees of freedom at 5% level of significance is 0.151, whereas the tabulated value is 15.507. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant relationship between conducting TNA using interview method and feedback collection from trainees. The Karl Pearson Coefficient of Correlation for the variables A_2 and E_2 is -0.09 which shows a negative correlation. The calculated value of x^2 for 16 degrees of freedom at 5% level of significance is 12.6, whereas the tabulated value is 26.296. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant relationship between conducting TNA using interview method and demonstration of acquired skills by trainees.

The Karl Pearson Coefficient of Correlation for the variables A_2 and E_3 is -0.006, which shows a negative correlation. Calculated value of x^2 for 16 degrees of freedom at 5% level of significance is 10.91, whereas the tabulated value is 26.296. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant relationship between conducting TNA using interview method and post-training behaviour of trainees.

Table 3
Cross-tabulation

I have conducted the TNA using Interview Method (A_2)	**Feedback forms have been collected from the trainees (E_1)**						
		SA	A	N	D	SD	Statistics
	SA	42.9%	28.6%	28.6%	–	–	x^2 = 6.6
	A	41.7%	41.7%	16.7%	–	–	
	N	42.9%	28.6%	28.6%	–	–	R = 0.151
	D	26.7%	41.7%	31.7%	–	–	
	SD	0.0%	100.0%	0.0%	–	–	df = 8
	Presentations and demonstrations have been given by each participant (E_2)						
		SA	A	N	D	SD	Statistics
	SA	0.0%	42.9%	14.3%	14.3%	28.6%	x^2 = 12.6
	A	4.2%	16.7%	12.5%	29.2%	37.5%	
	N	0.0%	14.3%	0.0%	57.1%	28.6%	R = -0.09
	D	8.3%	18.3%	21.7%	31.7%	20.0%	
	SD	0.0%	0.0%	50.0%	50.0%	0.0%	df = 16
	Post-training behaviour of the trainees has been observed (E_3)						
		SA	A	N	D	SD	Statistics
	SA	0.0%	14.3%	14.3%	42.9%	28.6%	x^2 = 10.91
	A	0.0%	12.5%	20.8%	20.8%	45.8%	
	N	0.0%	14.3%	28.6%	57.1%	0.0%	R = -0.006
	D	3.3%	6.7%	21.7%	28.3%	40.0%	
	SD	0.0%	0.0%	50.0%	50.0%	0.0%	df = 16
	The teaching/learning of teacher/kids has been improved after training (E_4)						
		SA	A	N	D	SD	Statistics
	SA	–	–	42.9%	57.1%	0.0%	x^2 = 7.8
	A	–	–	37.5%	45.8%	16.7%	
	N	–	–	71.4%	28.6%	0.0%	R = 0.014
	D	–	–	45.0%	40.0%	15.0%	
	SD	–	–	0.0%	100.0%	0.0%	df = 8

Table 4

Cross-tabulation

I have conducted the TNA using Discussion Method (A_3)	**Feedback forms have been collected from the trainees (E_1)**						
		SA	A	N	D	SD	Statistics
	SA	40.9%	36.4%	22.7%	–	–	$x^2 = 4.84$
	A	22.0%	41.5%	36.6%	–	–	
	N	37.8%	43.2%	18.9%	–	–	R = –0.039
	D	–	–	–	–	–	
	SD	–	–	–	–	–	df = 4
	Presentations and demonstrations have been given by each participant (E_2)						
		SA	A	N	D	SD	Statistics
	SA	0.0%	36.4%	13.6%	22.7%	27.3%	$x^2 = 15.16$
	A	12.2%	7.3%	17.1%	43.9%	19.5%	
	N	2.7%	21.6%	21.6%	24.3%	29.7%	R = 0.047
	D	–	–	–	–	–	
	SD	–	–	–	–	–	df = 8
	Post-training behaviour of the trainees has been observed (E_3)						
		SA	A	N	D	SD	Statistics
	SA	0.0%	9.1%	31.8%	31.8%	27.3%	$x^2 = 14.33$
	A	2.4%	14.6%	26.8%	14.6%	41.5%	
	N	2.7%	2.7%	10.8%	45.9%	37.8%	R = 0.142
	D	–	–	–	–	–	
	SD	–	–	–	–	–	df = 8
	The teaching/learning of teacher/kids has been improved after training (E_4)						
		SA	A	N	D	SD	Statistics
	SA	–	–	40.9%	40.9%	18.2%	$x^2 = 4.42$
	A	–	–	51.2%	43.9%	4.9%	
	N	–	–	37.8%	43.2%	18.9%	R = 0.051
	D	–	–	–	–	–	
	SD	–	–	–	–	–	df = 4

The Karl Pearson Coefficient of Correlation for the variables A_2 and E_4 is 0.014, which shows a positive correlation. The calculated value of x^2 for 8 degrees of freedom at 5% level of significance is 7.8, whereas the tabulated value is 15.507. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant relationship between conducting TNA using interview method and improvement in teaching/learning.

The Karl Pearson Coefficient of Correlation for the variables A_3 and E_1 is -0.039, which shows a negative correlation. The calculated value of x^2 for 4 degrees of freedom at 5% level of significance is 4.84, whereas the tabulated value is 9.488. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted or it can be concluded that there is no significant relationship between conducting TNA using discussion method and feedback collection from trainees. The Karl Pearson Coefficient of Correlation for the variables A_3 and E_2 is 0.047, which shows a positive correlation. Calculated value of x^2 for 8 degrees of freedom at 5% level of significance is 15.16, whereas the tabulated value is 15.507. Since the calculated value is lesser than the tabulated one, therefore, null hypothesis is accepted, or it can be concluded that there is no significant relationship between conducting TNA using discussion method and demonstration of acquired skills by trainees.

The Karl Pearson Coefficient of Correlation for the variables A_3 and E_3 is 0.142, which shows a positive correlation. The calculated value of x^2 for 8 degrees of freedom at 5% level of significance is 14.33, whereas the tabulated value is 15.507. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant relationship between conducting TNA using discussion method and post-training behaviour of trainees. The Karl Pearson Coefficient of Correlation for the variables A_3 and E_4 is 0.051, which shows a positive correlation. Calculated value of x^2 for 4 degrees of freedom at 5% level of significance is 4.42, whereas the tabulated value is 9.488. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant relationship between conducting TNA using discussion method and improvement in teaching/learning.

The Karl Pearson Coefficient of Correlation for the variables A_4 and E_1 is 0.156, which shows a positive correlation (Table 5). The calculated value of x^2 for 4 degrees of freedom at 5% level of significance is 4.09, whereas the tabulated value is 9.488. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant relationship between conducting TNA using questionnaire method and feedback collection from trainees.

Table 5
Cross-tabulation

I have conducted the TNA using Questionnaire Method (A_4)	**Feedback forms have been collected from the trainees (E_1)**						
		SA	A	N	D	SD	Statistics
	SA	–	–	–	–	–	x^2 = 4.09
	A	–	–	–	–	–	
	N	37.0%	44.4%	18.5%	–	–	R = 0.156
	D	33.3%	46.7%	20.0%	–	–	
	SD	27.9%	34.9%	37.2%	–	–	df = 4
	Presentations and demonstrations have been given by each participant (E_2)						
		SA	A	N	D	SD	Statistics
	SA	–	–	–	–	–	x^2 = 7.31
	A	–	–	–	–	–	
	N	0.0%	22.2%	18.5%	22.2%	37.0%	R = -0.51
	D	10.0%	23.3%	16.7%	30.0%	20.0%	
	SD	7.0%	14.0%	18.6%	39.5%	20.9%	df = 8
	Post-training behaviour of the trainees has been observed (E_3)						
		SA	A	N	D	SD	Statistics
	SA	–	–	–	–	–	x^2 = 5.73
	A	–	–	–	–	–	
	N	0.0%	3.7%	18.5%	29.6%	48.1%	R = −0.098
	D	3.3%	13.3%	23.3%	36.7%	23.3%	
	SD	2.3%	9.3%	23.3%	25.6%	39.5%	df = 8
	The teaching/learning of teacher/kids has been improved after training (E_4)						
		SA	A	N	D	SD	Statistics
	SA	–	–	–	–	–	x^2 = 5.01
	A	–	–	–	–	–	
	N	–	–	40.7%	51.9%	7.4%	R = 0.70
	D	–	–	46.7%	46.7%	6.7%	
	SD	–	–	44.2%	34.9%	20.9%	df = 4

The Karl Pearson Coefficient of Correlation for the variables A_4 and E_2 is -0.051, which shows a negative correlation. The calculated value of x^2 for 8 degrees of freedom at 5% level of significance is 7.31, whereas the tabulated value is 15.507. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted or it can be concluded that there is no significant relationship between conducting TNA using questionnaire method and demonstration of acquired skills by trainees.

The Karl Pearson Coefficient of Correlation for the variables A_4 and E_3 is -0.098, which shows a negative correlation. Calculated value of x^2 for 8 degrees of freedom at 5% level of significance is 5.73, whereas the tabulated value is 15.507. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant relationship between conducting TNA using questionnaire method and post-training behaviour of trainees. The Karl Pearson Coefficient of Correlation for the variables A_4 and E_4 is 0.070, which shows a positive correlation. The calculated value of x^2 for 4 degrees of freedom at 5% level of significance is 5.01, whereas the tabulated value is 9.488. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant relationship between conducting TNA using questionnaire method and improvement in teaching/learning.

The Karl Pearson Coefficient of Correlation for the variables A_5 and E_1 is -0.131, which shows a negative correlation (Table 6). The calculated value of x^2 for 6 degrees of freedom at 5% level of significance is 5.4, whereas the tabulated value is 12.592. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant relationship between analysing data through MS Excel and feedback collection from trainees. The Karl Pearson Coefficient of Correlation for the variables A_5 and E_2 is -0.109, which shows a negative correlation. The calculated value of x^2 for 12 degrees of freedom at 5% level of significance is 4.66, whereas the tabulated value is 21.02. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant relationship between analysing data through MS Excel and demonstration of acquired skills by trainees.

The Karl Pearson Coefficient of Correlation for the variables A_5 and E_3 is 0.049, which shows a positive correlation. Calculated value of x^2 for 12 degrees of freedom at 5% level of significance is 9.23, whereas the tabulated value is 21.026. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant

Table 6
Cross-tabulation

I have analysed the collected data using MS Excel (A_5)	**Feedback forms have been collected from the trainees (E_1)**						
		SA	A	N	D	SD	Statistics
	SA	–	–	–	–	–	x^2 = 5.4
	A	18.2%	45.5%	36.4%	–	–	
	N	19.0%	57.1%	23.8%	–	–	R = -0.131
	D	38.9%	33.3%	27.8%	–	–	
	SD	35.7%	42.9%	21.4%	–	–	df = 6
	Presentations and demonstrations have been given by each participant (E_2)						
		SA	A	N	D	SD	Statistics
	SA	–	–	–	–	–	x^2 = 4.66
	A	0.0%	18.2%	18.2%	36.4%	27.3%	
	N	4.8%	19.0%	9.5%	28.6%	38.1%	R = -0.109
	D	7.4%	18.5%	22.2%	31.5%	20.4%	
	SD	7.1%	21.4%	14.3%	35.7%	21.4%	df = 12
	Post-training behaviour of the trainees has been observed (E_3)						
		SA	A	N	D	SD	Statistics
	SA	–	–	–	–	–	x^2 = 9.23
	A	0.0%	18.2%	36.4%	27.3%	18.2%	
	N	0.0%	4.8%	19.0%	28.6%	47.6%	R = 0.049
	D	1.9%	9.3%	24.1%	27.8%	37.0%	
	SD	7.1%	7.1%	7.1%	42.9%	35.7%	df = 12
	The teaching/learning of teacher/kids has been improved after training (E_4)						
		SA	A	N	D	SD	Statistics
	SA	–	–	–	–	–	x^2 = 6.35
	A	–	–	36.4%	54.5%	9.1%	
	N	–	–	28.6%	61.9%	9.5%	R = -0.086
	D	–	–	50.0%	33.3%	16.7%	
	SD	–	–	50.0%	42.9%	7.1%	df = 6

relationship between analysing data through MS Excel and post-training behaviour of trainees. The Karl Pearson Coefficient of Correlation for the variables A_5 and E_4 is -0.086, which shows a negative correlation. The calculated value of x^2 for 6 degrees of freedom at 5% level of significance is 6.35, whereas the tabulated value is 12.592. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant relationship between analysing data through MS Excel and improvement in teaching/learning.

The Karl Pearson Coefficient of Correlation for the variables A_6 and E_1 is 0.003, which shows a positive correlation (Table 7). The calculated value of x^2 for 4 degrees of freedom at 5% level of significance is 9.21, whereas the tabulated value is 9.488. Since the calculated value is less than the tabulated one, therefore null hypothesis is accepted or it can be concluded that there is no significant relationship between analysing data through SPSS and feedback collection from trainees. The Karl Pearson Coefficient of Correlation for the variables A_6 and E_2 is 0.05, which shows a positive correlation. The calculated value of x^2 for 8 degrees of freedom at 5% level of significance is 3.79, whereas the tabulated value is 15.507. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant relationship between analysing data through SPSS and demonstration of acquired skills by trainees.

The Karl Pearson Coefficient of Correlation for the variables A_6 and E_3 is -0.31, which shows a negative correlation. The calculated value of x^2 for 8 degrees of freedom at 5% level of significance is 6.66, whereas the tabulated value is 15.507. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted or it can be concluded that there is no significant relationship between analysing data through SPSS and post-training behaviour of trainees. The Karl Pearson Coefficient of Correlation for the variables A_6 and E_4 is 0.071, which shows a positive correlation. The calculated value of x^2 for 4 degrees of freedom at 5% level of significance is 4.59, whereas the tabulated value is 9.488. Since the calculated value is lesser than the tabulated one, therefore null hypothesis is accepted, or it can be concluded that there is no significant relationship between analysing data through SPSS and improvement in teaching/learning.

Conclusions and Recommendations

The quality of education is abysmal and it is the onus of the government and the various bodies which plan the whole education system from school level to higher education. From the present study it has been identified that most of the faculty members who use Observation Method (55%), Interview Method (31%), Discussion Method (63%) or Questionnaire

Table 7
Cross-tabulation

I have analysed the collected data using SPSS (A_6)	**Feedback forms have been collected from the trainees (E_1)**						
		SA	A	N	D	SD	Statistics
	SA	–	–	–	–	–	x^2 = 9.21
	A	–	–	–	–	–	
	N	38.5%	28.2%	33.3%	–	–	R = 0.003
	D	33.3%	38.5%	28.2%	–	–	
	SD	18.2%	68.2%	13.6%	–	–	df = 4
	Presentations and demonstrations have been given by each participant (E_2)						
		SA	A	N	D	SD	Statistics
	SA	–	–	–	–	–	x^2 = 3.79
	A	–	–	–	–	–	
	N	5.1%	20.5%	20.5%	30.8%	23.1%	R = 0.05
	D	7.7%	15.4%	17.9%	38.5%	20.5%	
	SD	6.0%	19.0%	18.0%	32.0%	25.0%	df = 8
	Post-training behaviour of the trainees has been observed (E_3)						
		SA	A	N	D	SD	Statistics
	SA	–	–	–	–	–	x^2 = 6.66
	A	–	–	–	–	–	
	N	5.1%	2.6%	23.1%	28.2%	41.0%	R = -0.31
	D	0.0%	12.8%	23.1%	30.8%	33.3%	
	SD	0.0%	13.6%	18.2%	31.8%	36.4%	df = 8
	The teaching/learning of teacher/kids has been improved after training (E_4)						
		SA	A	N	D	SD	Statistics
	SA	–	–	–	–	–	x^2 = 4.59
	A	–	–	–	–	–	
	N	–	–	46.2%	46.2%	7.7%	R = 0.071
	D	–	–	38.5%	48.7%	12.8%	
	SD	–	–	50.0%	27.3%	22.7%	df = 4

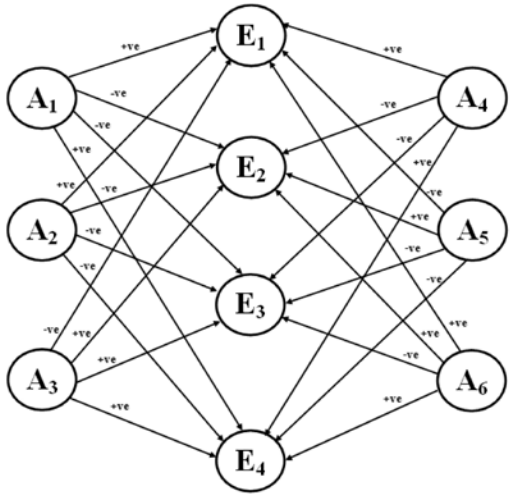

Figure 2. *Correlation between Training Need Analysis and Evaluation of Training Programme*

Method (0%) for Training Need Analysis take feedback of the training programme from the participants, but do not measure the post-training behaviour of the participants. Further, a significant change has not been identified in the teaching and learning behaviour of the faculties and students. It is observed that there is a significant relationship between approaches to Training Need Analysis (Observation, Interview, Discussion and Questionnaire) and evaluation of the training programme (Figure 2). There is a need to apply quantitative techniques to capture data from the teaching fraternity about what sort of training needs is required (Bryman and Cramer, 1994; Allison, 2002). Qualitative methods of data analysis—Observation, Discussion or Interview have some drawbacks in the sense that there might have been errors in collecting the information and further its interpretation, whereas Questionnaire method records data in a sequential manner and is easy to analyse, which provides deep insights into the data patterns. For the analysis of the collected data using any of the method, 11per cent of the faculty members apply MS Excel for synthesising information, whereas nobody applies SPSS or any other software package. It is quite evident from the study that very few faculty members use ICT tools like MS Excel/ SPSS for data analysis which shows a significant relationship between techniques of Training Need Analysis (MS Excel and SPSS) and evaluation of the training programme. There is a need to put ICT tools into teaching/ learning practices which offers the coherent analysis of information and easy elucidation (Tondeur Van Braak and Valcke, 2007; Wastiau et al., 2013; Drent and Meelissen, 2008).

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