A DYNAMIC MODEL FOR EVALUATION OF USEFULNESS OF FACULTY DEVELOPMENT PROGRAMMES IN THE AREA OF BUSINESS MANAGEMENT

Shefali Nandan[a]*, Shefalika Ghosh Samaddar[b] and Tanuj Nandan[a]

a - School of Management Studies;
b - Department of Computer Science and Engineering
Motilal Nehru National Institute of Technology, Allahabad-211 004, India

Abstract

Faculty Development Progammes are a means to expose the faculty in higher education to new theories and technology in their field. However, evaluation component of such programmes is usually not well-planned. An attempt has been made to identify the determinants of usefulness of FDPs in the area of Business Management as perceived by faculty and the extent of impact of these factors on usefulness. The study identifies four determinants. A dynamic model of usefulness of FDPs is presented as an outcome of the study.

1. INTRODUCTION

The dynamism of the business world requires faculty members in the field of Business Management to develop new teaching methodologies. They also need to be introduced to new theories through research and proper usage of educational technology. Higher education teacher competencies have been seen as a holistic integrated model, which takes into account seven integrated modules: pedagogical competence, interaction competence, guiding and leadership competence, work life competence, innovative and research competence, networking competence and the teacher's profession (Amok, 2007; Malik, 2010). These competencies may be achieved through Faculty Development Programmes which can be defined as "all of such

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* Corresponding author: eshefali@rediffmail.com

activities as seminars, conferences and individual counseling carried out in a certain discipline in instructional, personal and institutional areas and fields by an higher education institution for the instructor to do his duties" (Brawer, 1990; Odabaşı, 2003; Steinert, 2000; Moeini, 2003). Infact, it has been reported that group activities such as workshops and seminars are preferred models of FDPs as viewed by faculty (Jarvis, 1992; Mu, 1997; Gonen and Zwikael, 2009).

Palm (2007) has suggested that the uses of FDPs may be enhancement in connectivity, teaching ability, researching ability, contribution as a researcher, professional growth, and access to scholarly resources. These uses may also be viewed as an effective aspect of quality parameters of an FDP. However, evaluation component of such FDPs has remained neglected. Evaluation of strengths and limitations of the program are usually an afterthought based on uninformed feedback by participants. Moreover, successful evaluation research has not been widely publicized to administrators of faculty development programs nor replicated by other researchers for its implementation (Dale, 1998).

Gupta, Gollakota & Sreekumar (2003) have considered Faculty Development as one of the factors for measuring quality in business education. Studies on effectiveness/ impact of FDPs in many disciplines like Mathematics (Mordechai & Connie, 1983), Medicine (Hewson, Copeland & Fishleder, 2001; Sullivan, Lakoma, Billings, Peters & Block, 2006; Pinheiro, Liechty, Busch, Johnson, Dora & Butler, 2002) etc. have been conducted but it was observed that sufficient number of studies on this aspect have not been conducted in the field of Business Management education. Importance of evolving a model for

assessment of usefulness of FDPs in Business Management education can be justified from this view.

2. RESEARCH DESIGN

The present study is exploratory in nature. The literature review indicates that a number of variables determine the usefulness of FDPs. It is further seen that inspite of the fact that FDPs in different fields of study have been studied, but we could not find a study in the field of Business Management. Hence an attempt is being made here to study participants' perception of usefulness FDPs in the field of Business Management and hence contribute towards enhancing usefulness of FDPs in this field of study. It is assumed that FDPs will be considered useful if they have made a positive impact upon various competencies of teachers.

2.1. Objectives of the Study

The study aims to 1) identify the determinants of usefulness of FDPs in the field of Business Management as perceived by faculty members 2) develop a model of usefulness of Faculty Development Programmes.

2.2. Sampling and Survey

This study seeks to identify the self perception and self assessment factors of participants of FDPs that have been conducted in past 3-5 years. The data was collected from various cities in India between the period October 2007 and June 2009. Hewson, Copeland & Fishleder (2001) measured participants' self-assessment of their teaching competencies before the

program and their retrospective self-assessed improvements in these competencies after the program, which was found to be a viable approach to evaluate the impact of a faculty development program. A similar approach was followed in the present study. The respondents were asked to consider the FDPs attended between the years 2002 and 2005, so that the impact of attended FDP can be felt by them while filling their responses. Convenience sampling was used, and one hundred valid responses were obtained. There were almost equal number of male and female respondents, belonging to both government run and privately owned AICTE (All India Council of Technical Education) approved institutes. The work experience of respondents ranged from 6 months to 32 years.

2.3. Research instrument

The research instrument was developed on the basis of literature review and interviews with experienced teachers who have at least ten years of teaching experience and have participated in FDPs. Since sufficient literature on the topic is not available therefore there was more reliance on interviews from professors of Business Management. The instrument carried 27 variables. Perception of the extent of usefulness of FDPs on these variables was measured on a five point Likert scale ranging from 'very little extent' to 'very large extent'. These variables were refined to form a questionnaire.

3. DATA ANALYSIS AND DISCUSSION

The respondents were asked to rate the given variables on a five point scale. The

Kaiser-Meyer-Ohlin (KMO) measure of sample adequacy and Bartlett's Test of Sphericity were applied to measure inter-correlation of data, and thereby the appropriateness of factor analysis. The KMO measure of sample adequacy yields a value of 0.713, which is above the acceptable value of 0.500, and Bartlett's test of sphericity indicates that the correlations between variables are statistically significant (Table 1). The appropriateness of application of factor analysis is, therefore, justified. Extraction Method was Principal Axis Factoring and Rotation Method was Varimax. A model was generated with the help of these factors.

To determine the number of components, only the eigen values greater than or equal to 1 were considered (Kaiser, 1960). On examination of the rotated factor matrix, the following were observed:

The factor analysis resulted in four factors, namely Researching Abilities, Networking, Administrative Activities and Teaching Abilities. The variables which displayed cross-loadings, were deleted from the model. These four factors were found to have eigen values greater than 1 and hence they are significant. The factor loading of the variables determining satisfaction in each factor, reliability coefficient (Cronbach alpha), eigen value and percent of variation explained by the factors are shown (refer Table 2).

Table 1. KMO and Bartlett's Test

a.	Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.713
b.	Bartlett's Test of Sphericity	Approx. Chi-Square	597.638
		d.f.	153
		Significance	.000

The most important factor was found to be 'Researching Abilities', since eigen value and percent of variation explained by this factor are respectively 5.256 and 26.256. This factor consists of 5 variables with reliability coefficient of 0.8124. It shows that the included variables explain this factor to the extent of 81.24 percent. The next two factor identified are 'Networking' and 'Administrative Work'. Their respective eigen values are 2.754 and 1.781. Each of these factors consists of four variables with a reliability coefficient of 0.8016 and 0.7795, respectively. The percent variations explained by these factors are 12.967 and 7.438 respectively. The next factor has been identified as 'Teaching abilities' having five variables with a reliability coefficient of 0.7533. The percent variation explained by these factors is 5.297.

3.1. Data reduction

The four-factor solution obtained above

Table 2. Factor loading of variables

Factor	Variable	Factor Loading	Reliability Coefficient	Eigen Value	Percent of Variation Explained
Researching abilities	1. Improving researching abilities (X_1)	0.794	0.8124	5.256	26.256
	2. Help in paper writing (X_2)	0.750			
	3. Improving research orientation (X_3)	0.748			
	4. helped in taking new areas for teaching, researching (X_4)	0.713			
	5. help in developing innovative content (X_5)	0.398			
Networking	1. New e-group formation (X_6)	0.796	0.8016	2.754	12.967
	2. Joining interest groups (X_7)	0.754			
	3. Academic club formation (X_8)	0.742			
	4. Attending seminars (X_9)	0.339			
Administrative Activities	1. Placement activities (X_{10})	0.815	0.7795	1.781	7.438
	2. Industry institute coordination (X_{11})	0.633			
	3. admission related activities (X_{12})	0.564			
	4. training activities (X_{13})	0.561			
Class room teaching	1. Study content preparation (X_{14})	0.379	0.7533	1.420	5.297
	2. Time management (X_{15})	0.689			
	3. Using teaching aids efficiently (X_{16})	0.586			
	4. Improving lecture delivery (X_{17})	0.575			
	5. Improving interpersonal skills (X_{18})	0.521			

suggests that four summated scales may be created. Since the reliability of the variables within each factor is sufficient, the creation of summated scales is justified. Averaging of the scales was done to achieve four summated scales representing the four factors. Missing values were deleted list-wise.

3.2. Path Analysis using Structural Equation Modeling

The four factors identified by exploratory factor analysis are taken as four latent constructs, each of which is represented by certain number of measured variables (refer Table 3). Another measured variable namely 'extent of overall usefulness of FDPs' (Y) is taken as the dependent variable. Hypothesised path diagram is shown in Figure 1. The conditions of construct validity are found to be satisfied. On applying SEM using AMOS, the following results are obtained (refer Table 4, Regression weights and Table 5, Estimated Covariance Matrix).

3.3. Estimated Structural Equation Model

Figure 2 shows the outcome of SEM, which is the path diagram with estimated regression weights (unidirectional arrows) and covariances (bidirectional arrows).

The Regression Equation may be expressed thus:

$$Y= 0.137\xi_1 + 0.124\xi_2 - 0.087\xi_3 + 0.305\xi_4 + 0.34$$

These empirically derived constants may vary over a larger set of samples.

Outcome: From the above analysis, it may be concluded that the maximum amount of usefulness of FDPs is through (1) enhancement of Class Room Teaching ($\xi4$),

Table 3. Latent constructs and corresponding measured variables

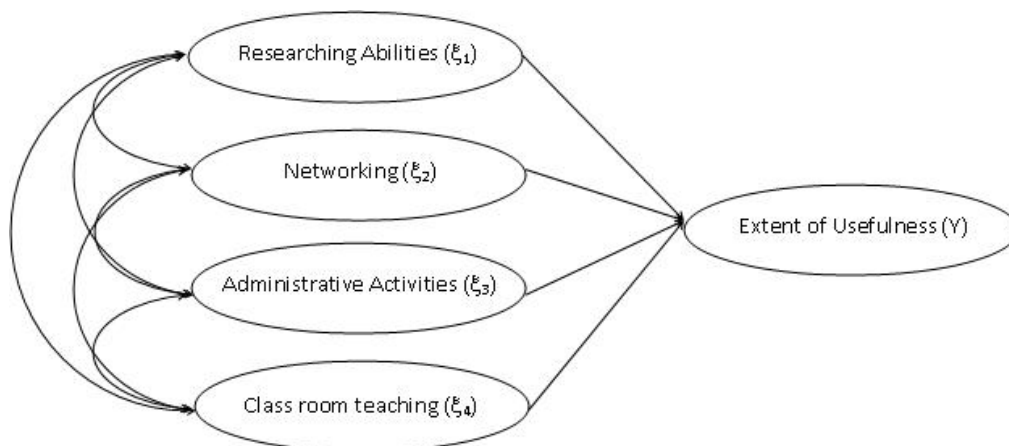| Latent Construct	Variable
Researching abilities ξ_1	X_1, X_2, X_3, X_4, X_5
Networking ξ_2	X_6, X_7, X_8, X_9
Administrative Activities ξ_3	$X_{10}, X_{11}, X_{12}, X_{13}$
Class room teaching ξ_4	$X_{14}, X_{15}, X_{16}, X_{17}, X_{18}$

Figure 1. Path Diagram of Structural Equation Model

which is measured by the variables 'Study content preparation (X14)', 'Time management (X15)', 'Using teaching aids efficiently (X16)', 'Improving lecture delivery (X17)', and 'Improving interpersonal skills (X18)'. (2) Next is enhancement in Researching Abilities (ξ_1), measured by the variables 'Improving researching abilities (X1)', 'Help in paper writing (X2)', 'Improving research orientation (X3)', 'Help in taking new areas for teaching, researching (X4)', and 'Help in developing innovative content (X5)'. (3) The third most important variable, Networking (ξ_2), as measured by the variables 'New e-group formation (X6)', 'Joining interest groups (X7)', 'Academic club formation (X8)', and 'Attending seminars (X9)' also contributes to the effectiveness of FDPs. (4) Improvement in administrative abilities is the factor having the least amount of impact on usefulness of FDPs.

The study also indicates that the impact of improvement in Administrative Abilities (ξ_3), as measured by the variables 'Placement activities (X10)', 'Industry institute coordination (X11)', 'Admission related activities (X12)', and 'Training activities (X13)' is negligible when compared to the other factors.

4. CONCLUSIONS

The FDPs in Business Management are an

Table 4. Regression Weights

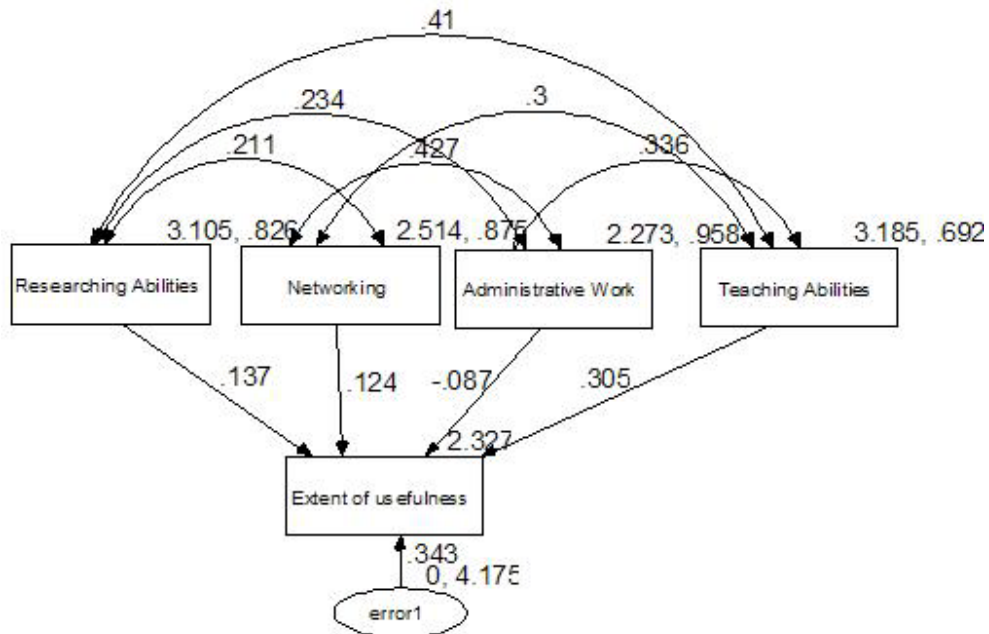| Construct	Researching abilities ξ_1	Networking ξ_2	Administrative Activities ξ_3	Class room teaching ξ_4
Regression Weight	0.137	0.124	-0.087	0.305

Figure 2. Structural Equation Model

Table 5. Estimated Covariance Matrix

	Researching abilities ξ_1	Networking ξ_2	Administrative Activities ξ_3	Class room teaching ξ_4	Extent of Usefulness Y
Researching abilities ξ_1	0.6923				
Networking ξ_2	0.3358	0.9580			
Administrative Activities ξ_3	0.2995	0.4273	0.8748		
Class room teaching ξ_4	0.4102	0.2344	0.2107	0.8259	
Extent of Usefulness Y	0.2753	0.1039	0.1914	0.2440	0.6224

important means of ensuring quality business management education. The contribution of this study is the identification of determinants of usefulness of FDPs. This study is based on empirical research. Determinants identified are improvement in 'class room teaching', 'researching abilities', 'networking', 'administrative abilities' of faculty members. These factors determine usefulness of FDPs in Business Management field and may be different from determinants of usefulness of FDPs in other fields of study.

Teaching, administration and running of FDPs may require minimal interference from each other. However, the existence of interference is a desirable element in this prediction model as evaluated value never becomes nil. However, if we want more intellectual investment in teaching administration, other factors are likely to be affected according to the empirical formula derived. The model remains dynamic to this extent within the perimeters defined by correlation coefficient of respective pairs of parameters. The formula derived has four above mentioned predictive elements and the variation in input makes possible prediction effective, if not efficient. On the basis of the prediction the model may further be improved by incorporating changeable or new elements and the empirical formula.

There is a need for a holistic approach for faculty development. The objective of this work is to assist academic leaders with the important task of maintaining their faculty's vitality which is very essential so that they are able to contribute in preparing effective managers who are capable of tackling the challenges of dynamic business environment.

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ДИНАМИЧКИ МОДЕЛ ЗА ПРОЦЕНУ КОРИСНОСТИ СТУДИЈСКИХ ПРОГРАМА ИЗ ОБЛАСТИ ПОСЛОВНОГ МЕНАЏМЕНТА

Shefali Nandan[a][*], Shefalika Ghosh Samaddar[b] and Tanuj Nandan[a]

a - School of Management Studies;
b - Department of Computer Science and Engineering
Motilal Nehru National Institute of Technology, Allahabad-211 004, India

Извод

Програми за развој факултета су корисна средства за приближавање факултета новим теоријама и технологијама у њиховој области. Ипак, развојна компонента оваквих програма обично није најбоље испланирана. Извршен је покушај да се одреде детерминанте корисности програма за развој факултета из области пословног менаџмента, гледано из угла факултета као и опсег утицаја ових факторас на корисност. Студија идентификује четири детерминанте. Динамички модел корисности ових програма је представљен као исход ове студије.

Кључне речи: Програми развоја факултета, Евалуација програма, Предавачке вештине, Умрежавање