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The Contributors of Teaching Competencies of Student Teachers in 21st Century Teaching Skills an Application of Structural Equation Model

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Abstract: *The present study assessed the direct and indirect effects of three latent predictors on teaching competency of student teacher and a hypothesized Structural Equation model for teaching competency is developed with Emotional Intelligence, Teaching Interest and Emotional maturity. Model fitting is done through IBM SPSS Amos. A Structural Equation model was developed with exogenous variables Emotional Intelligence, Emotional Maturity and Teaching Interest as a predictor of teaching competency (Endogenous Variables). The overall results suggest good fit with a statistically significant Model. A total of 53% of the variance of teaching competency was explained by the model.*

Keywords: *Teaching Competencies, Emotional Intelligence, Teaching Interest, Emotional maturity, Structural Equation model, Student Teachers*

I. Introduction

Need of the study

The Indian Education scenario was influenced by LPG at global level, PPP at National Policy Level and ICT at education level. Liberalization of Economy, Privatization of organizations and Globalization of market (LPG) poured many international education institutions for the Indian children. Public Private Partnership (PPP) Policy introduced by Indian Government paved way to develop mushroom growth of Teacher Education institutions in India. The Information Communication technology (ICT) kept the education in the wheels of system approach. The student teachers are prepared for the global market and made them suitable for the 21st century learning environment. So the researcher wants to know the factors influencing Teaching competencies of the student Teachers.

Research Objectives

1. To find the casual relationship between Emotional intelligence, Emotional Maturity ,Teaching Interest and Teaching Competency.
2. To develop a Structural Equation model for Teaching Competency.

Hypothesis of the study

1. There is no significant casual relationship between Emotional intelligence, Emotional Maturity and Teaching Interest and Teaching Competency.
2. There is no significant Structural Equation model for Teaching competency can be developed.

II. Materials and Methods

With the help of random sampling technique 622 student teachers were selected as samples for the study. Teaching Competency Scale (based on 21st century teaching skill) and Teaching Interest Scale was constructed and standardized by the researchers and Emotional intelligence scale (Anukool Hyde, Sanjyot Pethe And Upinder Dhar, 2002) and Emotional maturity scale (Kumari Roma Pal,1984) has been utilized to collect the data from the sample. A Structural Equation model for teaching competency is developed with other three variables and Model fitting is done through IBM SPSS Amos 19 and uses maximum likelihood to calculate all the path coefficients

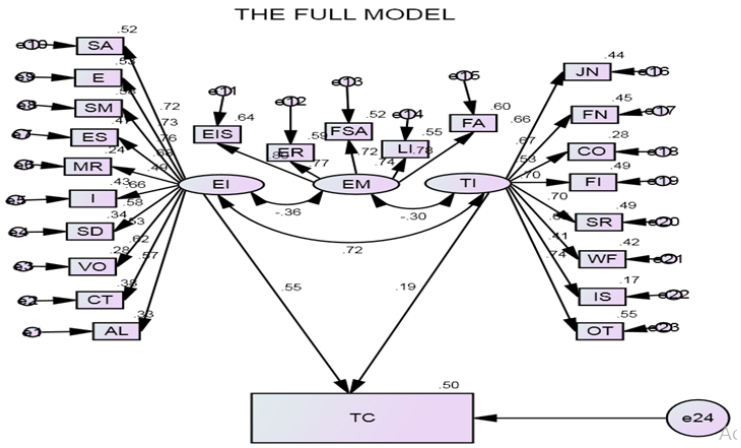
III. Analysis and Interpretation

The researcher used Structural Equation to find the relationship between the variables Emotional intelligence, Emotional maturity, Teaching interest and Teaching competency. Teaching competency is treated as endogenous variables and Emotional intelligence, Emotional maturity and Teaching interest are treated as exogenous variables. A Path Model is drawn through IBM SPSS Amos 19.

Structural Equation Model

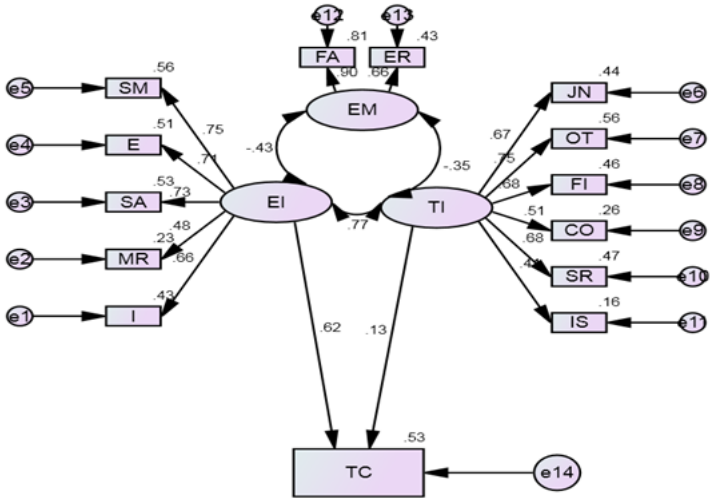
The present structural model, shown schematically in figure 1 assessed the direct and indirect effects of three latent predictors on teaching competency of student teacher. **The model consisted of the following structural equations. It was predicted that the Emotional intelligence, emotional maturity and teaching interest of the students teachers affect teaching competency**.

Each latent variable was measured with ten, five and eight indicator variables as illustrated in the measurement model in figure 1. The indicators of emotional intelligence are self-awareness, empathy, self motivation, emotional stability, managing relations, integrity, self-development, value orientation, commitment and altruistic behavior. The indicators of emotional maturity are emotional irritability, emotional regression, faulty social adjustment, lack of independency and flexibility and adoptability. Finally the indicators of teaching interest are Job nature, financial factors, Career opportunity, Family improvement, Social responsibility, Welfare facility, Inspiration and Job outcome.



Note:(TC)Teaching Competency,(EI) Emotional intelligence, (SA) self-awareness, (E)empathy, (SM)self motivation,(ES) emotional stability, (MR)managing relations, (I)integrity, (SD)self-development,(VO) value orientation,(CT) commitment, (AL)altruistic behavior. (EM)Emotional maturity, (EIS) emotional irritability, (ER) emotional regression, (FSA)faulty social adjustment, (LI)lack of independency, (FA)flexibility and adoptability.(TI)Teaching interest,(JN) Job nature, (FN)financial factors, (CO)Career opportunity, (FI) Family improvement, (SR)Social responsibility, (WF)Welfare facility,(IS) Inspiration , (OT)Job outcome.

A two-step structural equation modeling strategy using IBM SPSS Amos 19 (Arbuckle, 2010) was used; a full information maximum likelihood procedure was employed in estimating the parameters.
Three criteria were employed to assess the measurement model. The Chi –Square test was statically significant, χ^2 (248,N=622)= 633.164,ρ=.000,suggesting that the model fit the data.



Note:(TC)Teaching Competency, e- error (EI) Emotional intelligence, (SA) self-awareness, (E)empathy, (SM)self motivation, (MR)managing relations, (I)integrity, (EM)Emotional maturity, (ER) emotional regression, (FA)flexibility and adoptability. (TI)Teaching interest,(JN) Job nature, (CO)Career opportunity, (FI) Family improvement, (SR)Social responsibility, (IS) Inspiration , (OT)Job outcome.

The normed fit index (NFI) was at a value of 0.900, The goodness-of –fit index (GFI) and the comparative fit index (CFI) were 0.917and0 .937,respectively. The fit measures suggested a model fit to the

data. The root mean Square error of approximation (RMSEA) was 0.050 with a 90% confidence interval of 0.045 to 0.055. All Co-efficient achieved both statistical significant (ρ<.05) as well as practical significance (with values ≥.30).Thus, modifications were conducted to improve the measurement model. Last, the correlations among the factors ranged from -.218 to .547,indicating that there is sufficient discriminate validity among the latent constructs for us to proceed (e.g.,Bollen,1989;Kline,2011). A total of 50% of the variance of teaching competency was explained by the model. One path failed to achieve statistical and practical significance: (a) Emotional maturity to teaching competency. The results suggest that re-specifying the model may provide a better fit with the data.All coefficients and the correlation between the exogenous variables of emotional intelligence, emotional maturity and teaching interest in the full structural model are presented in Figure1. In the re-specified model the path from Emotional stability, Self development, Value orientation, Commitment and Altruistic behavior of emotional intelligence is deleted. The path from Emotional Regression, Flexibility and Adoptability of emotional maturity is deleted. The path from Fob nature, Career opportunity, Family improvement, Social responsibility, Inspiration, Outcome of teaching interest is deleted. In the re-specified model the path from **Self motivation, empathy, self awareness, managing relation and integrity of emotional intelligence, Flexibility and Adoptability and Emotional Regression of emotional maturity and Job nature, Job outcome, family improvement, career opportunity, Social responsibility, and inspiration of teaching interest is retained.**

The overall results suggest good fit with a statistically significant, $\chi^2(73,N=622) = 205.129,\rho<.000$,and GFI,NFI, and CFI of 0.95, 0.93, and 0.96, respectively. However, The RMSEA was.050 with a 90% confidence interval of 0.045 to 0.063, indicating an excellent fit. A total of 53% of the variance of teaching competency was explained by the model.The re-specified model with path from **Self motivation, empathy, self awareness, managing relation and integrity of emotional intelligence, Flexibility and Adoptability and Emotional Regression of emotional maturity and Job nature, Job outcome, family improvement, career opportunity, Social responsibility, and inspiration of teaching interest is accounted for a total of 53% of the variance of teaching competency was explained by the model. (fig 2)**

Table 1: Chi-Square And Goodness of Fit Indices of a Model

Factor model	□2	df	GFI	NFI	CFI	RMSEA
Original	**633.16**	**248**	0.92	0.90	0.94	0.05
Re-specified	**205.13**	**73**	**0.95**	**0.93**	**0.96**	**0.05**
Note: □2= chi square test**, df=** degree of freedom**, GFI=**Goodness of Fit index**, NFI=** Normed Fit index**, CFI=** Comparative Fit index, **RMSEA=** Root Mean square error of approximation.						

A structural equation model was developed with **Self motivation, empathy, self awareness, managing relation and integrity** of emotional intelligence**, Flexibility and Adoptability and Emotional Regression** of emotional maturity **and Job nature, Job outcome, family improvement, career opportunity, Social responsibility, and inspiration** of teaching interest **as a predictor of teaching competency.** A total of **53% of the variance of teaching competency** was explained by the model. Results of the **analysis indicated good support of the model.** Generally, **teaching competency was driven by the direct effect of emotional intelligence and teaching interest: all indirect effects on teaching competency were not supported.**

IV. Discussion

A Structural equation model was developed for teaching competency. The Structural equation modeling analysis indicated good support of the data. Generally, teaching competency was driven by the direct effect of emotional intelligence and teaching interest and all indirect effects on teaching competency were not supported. **Krishnaveni,R., & Anitha,J. (2007)** developed a comprehensive model of professional characteristics of an educator that will prepare them for high standards of professional achievements. **Schiefele,U., Streblow,L., & Retelsdorf,J.(2013)** developed three-dimensional structure model for teaching interest measure. **Gatchalian,M.B.(2010)** suggested that entrepreneurship education in tertiary level is best achieved through a well-designed curriculum, effective teaching model grounded on personalized and experience-based learning, and strong institutional support.

V. Conclusion

A total of **53% of the variance of teaching competency** was contributed by certain subscales of emotional intelligence and teaching interest. They are **Self motivation, empathy, self awareness, managing relation and integrity** of emotional intelligence **and Job nature, Job outcome, family improvement, career opportunity, Social responsibility, and inspiration** of teaching interest. So it is necessary to develop Emotional Intelligence aspects and Teaching Interest aspects of the student teachers before inculcating Teaching Competences.The teacher education institutions before giving training for Teaching skills, they should

strengthen the Emotional Intelligence of student teachers with proper emotional coaching programs and through Placement cell the job opportunity for the students may be channelized to maintain strong Teaching Interest.

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