A study on Emotional Intelligence and teaching effectiveness among teachers in Kerala

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Abstract:

Emotional Intelligence may be relatively a new term which have a wider acceptance in the modern era. The term emotional intelligence was first coined by Peter Salovey and John Mayor in 1990s. It refers to the ability to recognize regulate emotions in our self and others to make effective decision. The concept of EI get popularized after the publication of Daniel Goleman's book "Emotional Intelligence-why it can matter more than IQ?". EI is defined as the " the ability to monitor one's own and others feelings and emotions to discriminate among them and to use this information to guide ones thinking and action". Emotional Intelligence has conceptualized in four broad abilities such as perceiving, assimilating, understanding, and managing emotions. The person who can manage the emotions and understand the feelings of other people perform better in school, college, and on their jobs. The success and chance of the productive life of a student are directly dependent on the educator. Teachers lay the foundation stone for the social, emotional, and intellectual potentialities of the learner and also accounts for the success in teaching and learning and welfare of the students. Hence it is imperative to assess the Emotional Intelligence of teachers. This study is an effort to know whether the present day teachers have EI skills, whether they are using it. This study will help in bringing awareness about Emotional Intelligence and its effectiveness.

Key words: Emotional Intelligence, intellectual potentialities, teaching effectiveness

1.1 Introduction

Teachers are the most important resource in education reconstruction. Teaching effectiveness is the extent to which the teaching activity fulfils its intended purpose, function, and goals. According to Goleman, Emotionally Intelligent teacher is creating a safer and more satisfying, caring, and productive school environment. Emotional Intelligence is useful in any place where interpersonal relationships are generated- schools, workplaces, home and other organisational settings. The study involves understanding the effect of emotional intelligence on effective teaching. This study is an effort to know whether the present day teachers have EI skills, whether they are using it. This study will help in bringing awareness about Emotional Intelligence and its effectiveness.

1.2 Empirical Review

1. Okech (2004) conducted a study to investigate the relationship among emotional intelligence, teachers' self-efficiency, duration of teaching experience and age in a sample of South Texas Public School teachers. The study also investigated differences in emotional intelligence between male and female teachers. Sample of study consisted of 180 elementary science teachers in which 14 were male and 166 were females. Results were found by using correlation and casual comparative research design. The tools used for the study were multifactor emotional intelligence scale (Mayer, Caruso and Salovey, 1999), the science teaching efficacy beliefs instruments (Riggs and Enochs, 1990) and a demographic questionnaire. The study found significant positive relationship between emotional intelligence and teachers' self-efficacy. No significant relationship between emotional intelligence and length of teaching experience and between emotional intelligence and age was found. Gender differences were found on emotional intelligence.

2. Tyagi (2004) conducted a study on the Emotional intelligence of secondary teachers in relation to gender and age. The sample consisted of 500 secondary teachers (350 male and 150 female) belonging to secondary schools (urban-rural) from Dhule district, Maharashtra. The tool used for this study was a structured questionnaire called emotional intelligence test developed by Prof. N.K. Chadha and Dr. Dalip Singh. Major findings of the study showed that level of emotional intelligence of secondary teachers is extremely low. Male and female teachers do not differ in respect of their level of emotional intelligences.

3. Upadhayaya (2006) conducted a study to explore the personality traits of high and low emotionally intelligent prospective teacher. It was found that emotionally intelligent teachers were more capable, self assuring, diligent, helpful, encouraging, and inspiring, high spirited, more eager & flexible as compared to low emotionally intelligent prospective teachers.

4. Patil & Kumar (2006) conducted a study to know the emotional intelligence among student-teachers in relation to gender, stream and scholastic achievement. They reported no significant effect of gender & stream on emotional intelligence. No significant effect was found between emotional intelligence and academic achievement of student-teachers.

1.3 Statement of Problem

Emotional Intelligence (EI) is considered as an imminent and valuable tool an individual possess to excel and succeed in his or her respective profession. Teachers need this emotional intelligence since their profession calls for having a balanced EI to manage the student community and their colleagues. Having an effective teacher has become the hour and an enquiry in the area of EI and effective teaching. So it is one of the important duties of every teacher to control and deliver his/her emotions in a positive way. The entire focus of the study is to understand the effect of EI on teaching effectiveness.

1.4 Objective of the study

1.4.1 To study the factors influencing emotional intelligence of school teachers in Irinjalakuda.

1.4.2 To study the factors affecting teaching effectiveness of school teachers in Irinjalakuda.

1.4.3 To analyse the effect of emotional intelligence of school teachers for on their teaching effectiveness.

1.5 Hypotheses of the study

1.5.1 H_1 The opinion of teachers related to the factors affecting EI on the basis of nature of school are different. (Variance are different).

1.5.2 H1: The opinion of teachers related to the factors affecting EI on the basis of gender are different.

1.5.3 H$_1$: Emotional Intelligence directly influences the teaching effectiveness.

1.6 Research Methodology

1.6.1 Research Design

The study was conducted among the school teachers in Irinjalakuda. Here the population is the school teachers from Government, Aided and Unaided Sector.

1.6.2 Sample Design

a) Population

The population of present study comprised of school teachers working in 3 schools from Irinjalakuda. Male and female teachers working in Government, Aided, Unaided schools have been included. The population of teachers is shown in Table 1.1

b) Sampling frame:

Table 1.1

Population of School teachers in Irinjalakuda

Type of School	Number of Teachers		Total
	Male	**Female**	
Government	6	39	45
Aided	4	41	45
Unaided	2	30	32
Total	**12**	**110**	**122**

1.6.3 Sample size

To study the whole population in order to arrive at conclusion would be impractical. Since, it was not feasible to include all the employees in the study for data collection. It was considered inevitably to draw a representative sample. According to Taro Yamane 1970 use the following formula for finite population to fix the sample size.

n= N/1+n (e) 2

N= total population

e= Chance for error (5%)

Type of School	Total	Sample n= N/1+n (e) ^{2}	Samples
Government	45	40	24
Aided	45	40	26
Unaided	32	30	23
Total	**122**	**110**	**73**

After data mining and editing the sample size is limited to 73. Some of the respondents are not returned the filled questionnaire. Simple random sampling is used from the available sample frame from each school.

1.7 Data Collection

Sources of Data

Data were collected from both primary and secondary sources. The primary data were collected through questionnaires based on the objectives. The secondary data were collected from books, websites etc. They were refereed, reviewed and used in this study.

1.8 Tools used for analysis

Scaling technique: Daniel Golman. Factors related to EI collected by using 5 point Likert scale. The collected data was analyzed with the help of both relevant descriptive and inferential statistical tools such as Percentage analysis, factor analysis and two sample independent t- test and Kruskal Wallis H test etc. was used for testing hypotheses of the study.

1.9Limitations

1.10.1This study was limited to teachers in Irinjalakuda area only.

1.10.2 It reflects the emotional intelligence of 73 teachers only.

Part II

2.1 Emotional Intelligence and the Teacher

Teaching is a profession that shapes education. It is a core professionals which makes all other professions possible well-qualified, caring and committed teachers improve curricula and assess the schools are safe and of the highest standards in the world. It will ensure that our children are prepared to face the challenges and utilize opportunities. It is an a exacting job that requires in depth knowledge of the subject content and age is specific. Pedagogy means multiple skills such as patience, leadership, creativity, administration, counseling etc. Therefore evaluation of the totality of behaviours and the potential of individuals is involved in this.

Teacher Effectiveness

Education plays a significant role in any civilized society. It enables a person to perform one's duties and responsibilities towards oneself, the family, the society and the nation and helps him in leading a comfortable and successful life. It inspires the younger generation in adapting itself as a dynamic society with required skills and know how the Younger generation can imbibe the required skills. To know how it is achieved through the performance of the teachers. Thus Teacher Effectiveness plays a dynamic role in the modern society. Teacher Effectiveness refers to "the impact of the classroom factors, such as teaching methods, teacher expectations, classroom organization the and use of classroom resources have on students' performance." This reflects the idea that it is much closer to the meaning of efficacy which is defined as "the capacity to produce effects; power to effect the object intended". Jim Campbell (2004) defined Teacher Effectiveness as "the power to realize socially valued objectives agreed for teachers work, especially, but not exclusively, the work concerned with enabling students to learn". Thus the optimum level of efficiency and productivity rests with the teacher. It refers to the level of maturity and learning indicating that the teacher

grows with experience and keeps learning. He is able to perform his best in the process of education. Thus, in the educational process, Teacher Effectiveness, School's Achievement and Educational Effectiveness are used inconsistently, but they are inter-related.

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Part III

Data analysis and Findings

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Here an attempt is made to emotional intelligence and Teacher Effectiveness among teachers in Inrinjalakuda. Inferential statistics are used to make inferences about the larger population based on the sample. Typically, inferential statistics deals with analysing two or more variables using the samples. There are different types of inferential statistics that are used. The type of inferential statistics used depends on the type of variable used for the study.

Factor Analysis

Factor analysis is a statistical method for reducing large number of variables to a small number of components or factors and used to describe the variability among observed, correlated variables in terms of potentially lower number of unobserved variables called factors. It is used as a data reduction method. It may be used to uncover and establish the cause and effect relationship between variables or to confirm a hypothesis.

KMO and Bartlett's Test

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Table 4.1

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.599
Bartlett's Test of Sphericity	Approx. Chi-Square	230.044
	df	91
	Sig.	.000

</div>

Source: SPSS Output

The KMO and Bartlett's test table display the results for interpreting the adequacy of data for factor analysis

The Kaiser-Meyer-Olkin (KMO) measures the sampling adequacy and its value should be greater than 0.6 for our sample to be adequate for undertaking factor analysis. Also, the p-value of Bartlett's Test of Sphericity should be less than 0.05.The off-diagonal elements should all be very small (close to zero) in a good model. In the table 4.1 the KMO measure is 0.599. There is universal agreement that factor analysis is inappropriate when sample size is below 50. Kaisen (1974) recommend 0.5 as minimum (barely accepted), here the value is 0.599 it is acceptable. In this study, the result of Bartlett's test of Sphericity (0.000) sig and KMO (0.599) indicates that the data are appropriate for factor analysis.

Communalities

The proportion of variance in any one of the original variables which is captured by extracted factor is communalities. Communalities help estimate the variance that is unique to each variables; this uniqueness is calculated by total variance explained by the variable minus the communality of that variable.

Table 4.2 Communalities		
	Initial	Extraction
Give opportunity to communicate	1.000	.628
Listen to students and colleagues idea	1.000	.621
Communicate only when required	1.000	.694
Ask question to clarify whether students understood	1.000	.810
Try to know whether students are following what is teaching	1.000	.689
Encourage students for discussion	1.000	.657
Appreciate students	1.000	.479
Handle stressful situations	1.000	.643
Use +ve thinking in a conflict	1.000	.720
Take break when emotions are out of control	1.000	.669
Developed skills of avoiding mistake	1.000	.397
Argue when required	1.000	.587
Feel it's not my job	1.000	.690
Feel Iam doing all work	1.000	.698
Extraction Method: Principal Component Analysis.		

Source: SPSS Output

As per table 4.2 shows how the variance (i.e. the communality value which should be more than 0.5 to be considered for further analysis). In this study, factor analysis was carried out in two stages. In stage one; known as the factor extraction process, objective was to identify (how many number of) factors to be extracted from the data.

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	2.422	17.298	17.298	2.422	17.298	17.298	2.254
2	2.175	15.536	32.834	2.175	15.536	32.834	1.898
3	1.766	12.616	45.450	1.766	12.616	45.450	2.036
4	1.410	10.073	55.523	1.410	10.073	55.523	1.724
5	1.209	8.638	64.161	1.209	8.638	64.161	1.266
6	.926	6.617	70.778				
7	.867	6.190	76.968				
8	.780	5.573	82.541				
9	.622	4.445	86.986				
10	.509	3.634	90.620				
11	.407	2.907	93.528				
12	.399	2.851	96.379				
13	.306	2.184	98.563				
14	.201	1.437	100.000				
Extraction Method: Principal Component Analysis.							
a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.							

Source: SPSS Output

Using principle component analysis, 14 variables were extracted by 5 factors. Only the factors having latent roots or Eigen values greater than 1 were considered significant and all factors having Eigen value less than 1 were considered insignificant and were discarded. All the five factors together accounted 64.161% of total variance.

Fig 4.1
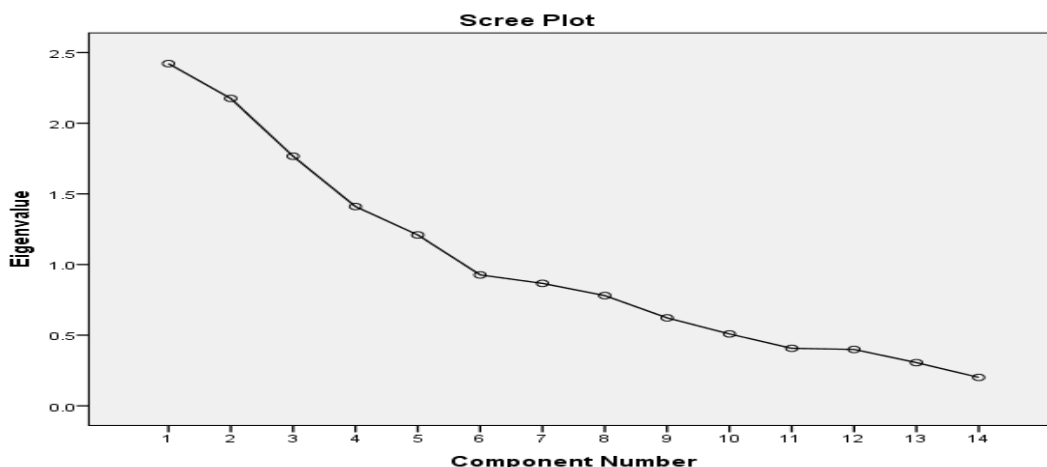
Component Correlation Matrix					
Component	1	2	3	4	5
1	1.000				
2	.084	1.000			
3	-.081	.037	1.000		
4	.059	-.122	-.061	1.000	
5	.008	-.035	.035	.059	1.000
Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.					

A principal component analysis (PCA) was conducted on the10 items with Oblique rotation (Oblimin). The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis, KMO = .599 which is well above the acceptable limit of .5. Bartlett's test of sphericity χ^2 230.044, $p < .001$, indicated that correlations between items were sufficiently large for PCA. An initial analysis was run to obtain eigen values for each component in the data. 5 components had eigen values over Kaiser's criterion of 1 and in combination explained 64.161% of the variance. The scree plot showed inflexions that would justify retaining components. Table 4.5 shows the factor loadings after rotation. The items that cluster on the same components suggest that component 1 represents (Self Management), component 2 (Self Motivation), component 3 (social awareness), component 4 (social skills) and component 5 (Communication) and so on.

One way ANOVA.

Self management and communication dimensions are normally distributed therefore it is tested with one way ANOVA.

H0: The opinion of teachers related to the factors affecting EI on the basis of nature of school are equal. (Variance are equal)

H1: The opinion of teachers related to the factors affecting EI on the basis of nature of school are different. (Variance are different)

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Self Management	Between Groups	.824	2	.412	**.405**	**.668**
	Within Groups	71.176	70	1.017		
	Total	72.000	72			
Communication	Between Groups	3.538	2	1.769	**1.809**	**.171**
	Within Groups	68.462	70	.978		
	Total	72.000	72			

It conclude that the self management (F= 0.405, p =0.668> 0.05) and communication (F= 1.809, p =0.171> 0.05) dimensions have no significant variation among the teachers from Govt, aided and unaided sector.

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Self Management	Between Groups	2.587	2	1.293	1.304	.278
	Within Groups	69.413	70	.992		
	Total	72.000	72			
Communication	Between Groups	3.809	2	1.904	1.955	.149
	Within Groups	68.191	70	.974		
	Total	72.000	72			

The table 4.8 conclude that the self management (F= 1.304, p =0.278> 0.05) and communication (F= 1.955, p =0.149> 0.05) dimensions have no significant variation among the teachers having different work experience.

Two Independent sample t test

The extracted factors tested with levene's 't' test by framing the following hypothesis.

H0: The opinion of teachers related to the factors affecting EI on the basis of gender are equal.

H1: The opinion of teachers related to the factors affecting EI on the basis of gender are different.

Independent Samples Test		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
									Lower	Upper	
Self Management	Equal variances assumed	7.711	.007	1.499	71	.138	.590	.39	-.19513430	1.37651719	
	Equal variances not assumed			.940	6.399	.381	.590	.62	-.92354495	2.10492785	
Communication	Equal variances assumed	.597	.442	-1.164	71	.248	-.46141291	.39	-1.25206994	.32924413	
	Equal variances not assumed			-1.247	7.589	.250	-.461	.37	-1.32312627	.40030046	

The table 4.10 shows the levene's t test for equality of variance among male and female respondents. The equality of variance is checked through SPSS, the result of analysis shows variance is not significant in the self management and communication towards EI that means p values are greater than the significance level of 0.05. Thus, the null hypothesis is accepted.

Kruskal-Wallis H Test

The Kruskal-Wallis H test (sometimes also called the "one-way ANOVA on ranks") is a rank-based nonparametric test that can be used to determine if there are statistically significant differences between two or more groups of an independent variable on a continuous or ordinal dependent variable.

Self motivation, social awareness and social skill factors are not normally distributed therefore non parametric test like H test is used for testing the variances are equal or not.

Test Statistics[a,b]			
	Self motivation	Social awareness	Social skill
Chi-Square	14.773	7.220	10.281
df	2	2	2
Asymp. Sig.	.001	.027	.006
a. Kruskal Wallis Test			
b. Grouping Variable: TYPE OF SCHOOL			

Source: SPSS Output

A Kruskal-Wallis H test showed the $\chi 2$ value and its associated P values of self motivation, social awareness and social skill is depicted in the table 4.8 which is less than the p value of 0.05 hence the null hypothesis is failed to accept. It means that there are significant variations among the teachers from Govt, aided and unaided sector towards EI dimensions with respect to self motivation, social awareness and social skill.

Test Statistics[a,b]			
	Self motivation	Social awareness	Social skill
Chi-Square	.738	12.649	3.378
df	2	2	2
Asymp. Sig.	.691	.002	.185
a. Kruskal Wallis Test			
b. Grouping Variable: WRKEXP			

A Kruskal-Wallis H test showed the $\chi 2$ value and its associated P values of self motivation and social skill is depicted in the table 4.14 which is greater than the p value of 0.05 hence the null hypothesis is accepted. It means that there is no significant variations among the teachers having different work experience towards EI dimensions with respect to self motivation and social skill. But in the case of social awareness P value is 0.002 which is less than 0.05 it means that there is significant variations among the teachers having different work experience towards EI dimensions with respect to social awareness.

Teacher effectiveness is also tested by factor analysis

Table 4.15 KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.736
Bartlett's Test of Sphericity	Approx. Chi-Square	260.582
	df	78
	Sig.	.000

Communalities[a]		
	Initial	Extraction
Suggest change for benefit of students	.205	.220
Make sure students and colleagues understand	.437	.999
Come with a solution to problems	.372	.488
Material provided are easy and clear	.278	.368
Enjoy job as teacher	.518	.665
Encourage students to give feedback	.515	.634
Take criticism positively	.364	.573
Encourage, support, help students	.487	.680
Respect of opinion of students	.521	.678
Encourage to ask question from subject	.283	.251
Enjoy teaching	.471	.736
Create interesting way of presenting lecture	.357	.347
Concerned about quality of teaching	.293	.316
Extraction Method: Maximum Likelihood.		
a. One or more communalitiy estimates greater than 1 were encountered during iterations. The resulting solution should be interpreted with caution.		

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.998	30.752	30.752	1.817	13.979	13.979
2	1.539	11.841	42.593	2.757	21.205	35.184
3	1.343	10.331	52.924	1.047	8.054	43.239
4	1.090	8.387	61.311	.747	5.746	48.985
5	1.072	8.246	69.557	.590	4.535	53.520
6	.853	6.560	76.117			
7	.643	4.944	81.061			
8	.545	4.189	85.249			
9	.506	3.895	89.145			
10	.477	3.672	92.816			
11	.361	2.773	95.590			
12	.326	2.506	98.096			
13	.248	1.904	100.000			
Extraction Method: Maximum Likelihood.						

A principal component analysis (PCA) was conducted on the 13 items with Oblique rotation (Oblimin). The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis, KMO =0.736 which is well above the acceptable limit of .5. Bartlett's test of sphericity χ^2=260.582, $p < 0.001$, indicated that correlations between items were sufficiently large for PCA. An initial analysis was run to obtain eigen values for each component in the data. 5 components had eigen values over Kaiser's criterion of 1 and in combination explained 69.557% of the variance. The scree plot showed inflexions that would justify retaining components. Table 4.14 shows the factor loadings after rotation. The items that cluster on the same components suggest that component 1 represents (Group Cohesion), component 2 (Clarity), component 3 (Analytical ability), component 4 (Enthusiasm) and component 5 (Mentor) and so on.

Table 4.19
Goodness-of-fit Test

Chi-Square	df	Sig.
13.713	23	.935

Goodness-of-fit Test gives you an absolute test of model fit. Non-significant values suggest a good fitting model. Here the p-value is greater than 0.05 so we accept the null hypothesis that 5 factor model was

inadequate to explain the covariances among the 13 variables. Therefore further analysis cannot be done based on these 5 factors.

2.7 To study the effect of emotional intelligence on teaching effectiveness was analyzed by using 5 factors of EI and 5 factors of TE. Factors identified through factor analysis. For testing the effect of EI on TE the following hypothesis was framed.

Ho: Emotional intelligence not directly influences the teaching effectiveness.

 H1: Emotional intelligence directly influences the teaching effectiveness.

The Friedman test is the non-parametric alternative to the one-way ANOVA with repeated measures. It is used to test for differences between groups when the dependent variable being measured is ordinal (rank). It can also be used for continuous data that has violated the assumptions necessary to run the one-way ANOVA with repeated measures (e.g., data that has marked deviations from normality).

Test Statistics[a]	
N	73
Chi-Square	3.297
df	9
Asymp. Sig.	**.951**
a. Friedman Test	

The result of Friedman test shows that Chi-Square value is 3.297 and the p value (0.951) is greater than .05. As per the samples it inferred that Emotional intelligence not directly influences the teaching effectiveness.

3.2 Suggestion

- ➢ Further studies could be undertaken to evolve a suitable awareness programmes for evaluating the effect of emotional intelligence on teaching effectiveness of teachers working at different levels of education in the state.

3.3 Conclusion

Teaching, in its basic element, it is generally communication- a flow of information from one individual to another. Along with the flow of information, teaching also ensure efficiency of process of data of transfer and effectiveness of the impact of the data received by the student. Teaching must make sure the students grasp the idea, and is made able to reproduce it whenever necessary. Hence, the common assumption that the teacher effectiveness is linked to his or her ability to control, maintain, manipulate and reroute their emotions and feelings.

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