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IQ, EQ or SQ: 
Searching the Most Crucial Dimension of Intelligence as a Predictor of Psychological Risk and Change Proneness

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Abstract: With positive psychology gaining cardinal position, mental health encompassing a broadened realm, and thriving individuals having an edge over successful ones, other than I.Q. and E.Q., S.Q. has become important as never before. Due to paucity of studies exploring their role, this paper examines their individual and joint contribution in predicting Psychological Risk and Change Proneness in teachers. The sample of 373, teachers from different disciplines and at different levels of teaching was selected from schools and colleges of Bhopal city using stratified random sampling technique. Standardized tools were used for data collection. For data analysis Multiple Correlation and Step wise Regression were used. Results indicate some significant individual and joint contributions of IQ, EQ and SQ in predicting the aforesaid variables. The implications have been discussed in the light of recent guidelines by NCTE for teacher education.

Keywords: intelligence, emotional intelligence, spiritual intelligence, positive psychology.
INTRODUCTION

With rising prosperity and flourishing civilizations in many parts of the globe people have stepped towards universal education, increased purchasing power, longer life span, more comfortable and mechanics aided life. People have started caring for the planet, have cut into and made inroads in social, racial, ethical injustice. On the other hand, some parts of the globe are dealing with scarcity and are striving to reach flourishing states. Be it a blooming or impoverished state, there is one asset with all human beings that helps them to invest the abundance or face the dearth with magnanimity, rising above the situation.

Positive psychology, the recent holistic approach to human behaviour, has accepted cognitive, affective, spiritual elements cardinal for a fulfilled existence (Diener, Lucas and Oishi 2002) and highlighted the role of buffer of positive human abilities to be tapped for amplifying the human strength (Seligman 2002). Searching the amazing criterion of human abilities, Neuroscience has made available the evidence of neural basis of philosophical and spiritual thinking in human beings that has led to behavioural sciences focusing upon searching a criterion of human strengths that sets them apart from the rest of the species. Psychology has witnessed a spur of research on emotional and spiritual thinking abilities (Gardner 1983; Goleman 1996; Emmons 2000; Zohar and Marshall 2000; Wolman 2001; King 2009).

The fundamental reality is that human beings are four-dimensional beings with body, mind, heart and spirit; and corresponding to it are their needs. Intellect, emotion and spirit depend on one another for wholeness; they are interwoven in human self and in education at its best (Palmer 1998). It’s the education system that has to handle the responsibility as it has the largest reach to the widest group at different stages of unbolting their potential. The task has to be handled by positive education in which the teachers embed the principles of well being into what they teach. Therefore, teachers’ thinking abilities and well being becomes vital for making them an efficient medium and model for unleashing the optimum potential in students. Understanding this is the key to the path towards unlocking the true potential in human beings.
National Curriculum Framework (NCF) for Teacher Education (2009) states that teachers are the single most important element of the school system, and put certain expectations from teachers in terms of positive and fine human sensibilities, flexibility and novel thinking. The document states the importance of emotional and spiritual dimensions of thinking in teachers other than their subject related competencies. Ironically, teachers all over the world are feeling beleaguered, even passionate teachers are exhausted in the face of apathy and resistance from around them (Hargraves and Fullan 1998).

In the past decade there have been many studies in the area of Intelligence (Rational dimension) and a few studies in the area of Emotional dimension of Intelligence, but fewer studies have been done in the area of Spiritual Intelligence. Intelligence (Rational dimension) individually has been studied in respect of its relationship with Achievement (Behera 2002; Varma, 2003), Achievement Motivation (Behera 2002; Varma 2003), Adjustment (Varma 2003), Alienation (Gupta 2001), Discipline of Science (Varma 2003), Frustration (Chand 2005), Moral Judgement (Arora 2003), Neuroticism (Behera 2002), Problem Solving Ability (Kwatra 2000), Residential Background (Kwatra 2000), Scientific Creativity (Kwatra 2000), Gender (Behera 2002; Chand 2005; Kwatra 2000; Tehlan 2001; Varma, 2003), and Socio-Economic Status (Chand 2005). Emotional Intelligence has been studied in respect of its relationship with Achievement (Anandmani 2006; Ahuja 2002), Age (Hassan, Sulaiman & Ishak 2009), Anxiety (Extemera & Fernandez-Berrocal 2006; Dewaele, Petrides & Furnham 2008; Hassan et al. 2009; Narimani, Sadeghieh, Homeily & Siahpoosh 2009), Cultural Adjustment (Jazaeri and Kumar 2008), Deprivation (Pandey 2006; Singh 2006b), Empathy (Pant & Prakash 2004), Examination Stress (Singh 2006a), Gender (Anandmani 2006; Hassan et al. 2009), Intelligence (Anandmani 2006), Personality (Kajal 2002), Professional Stress (Pandey 2006), Residential Background (Singh 2006a), Social Adjustment (Dhingra, Manhas & Thakur 2005), Teaching Attitude (Hor and Aik-kwang Ng. 2005), Teacher Effectiveness (Srivastava 2006), Personal Teaching Efficacy (Penrose, Perry & Ball 2007), Teaching Work Motivation (Mishra 2006) and Values (Kumar 2006; Pandey & Jaiswal 2006). Spiritual Intelligence
itself being a very rarely studied variable, only few studies have been done in the area of its correlates. It has been studied in respect of its relationship with Social Adjustment (Dhingra, Manhas & Thakur 2005), Culture (Yang & Wu 2009), Age, Religiosity, and Satisfaction with life (King & DeCicco 2009).

Majority of the studies done are in the context of correlates of the three dimensions of Intelligence separately, whereas Intelligence assessed in its comprehensive form (Rational, Emotional and Spiritual dimensions taken together) would be one of the crucial parameters for predicting the balanced, competent and effective behaviour of a teacher. Hitherto, there has been no effort so far to study the individual and joint contribution of Rational Intelligence, Emotional Intelligence and Spiritual Intelligence in predicting Psychological Risk and Change Proneness in teachers. Hence, this is totally an uninvestigated aspect indicating a research gap.

Looking to this, exploring the individual and joint contributions of rational, emotional and spiritual thinking abilities in predicting the Psychological Risk, Change Proneness, apparently vital affective variables influencing the desired behaviour and well being of a teacher would help establish the individual significance of each dimension of thinking, fetching them their due importance in theory and practice in the discipline of Education and behaviour modification of teachers and looking to the paucity of studies, this aspect has been explored in the present study.

**OBJECTIVE**

The objective of the study is to study the joint and individual contribution of Rational Intelligence, Emotional Intelligence, and Spiritual Intelligence in predicting Psychological Risk, and Change Proneness of Teachers separately.

**HYPOTHESIS**

The hypothesis of the study is that there is no significant joint and individual contribution of Rational Intelligence, Emotional Intelligence, and Spiritual Intelligence in predicting Psychological Risk and Change Proneness of Teachers separately.
METHOD

Sample: This study was conducted on the Teachers teaching in different schools and colleges of Bhopal, M.P. The schools from which the samples were taken were either affiliated to CBSE or M.P. Board. The sample comprised of 373, both male and female teachers graduated from Arts, Science and Commerce background teaching at Primary, Secondary and College levels selected by stratified random sampling technique. The age of the sample ranged from 22-60 yrs. They were at least graduates and good at reading English or Hindi or both languages.

TOOLS

Rational Intelligence (Verbal)

The verbal aspect of Rational Intelligence was assessed by administering The Group Test of General Mental Ability (20-52) (EGMAT) developed by Jalota containing 100 Questions with three to five alternatives for each Question assessing nine aspects, namely, Number Series, Mathematical Instructions, Following Instructions, Vocabulary Similar, Vocabulary Opposites, Classifications, Best Answers, Analogies and Reasoning. In all, forty-five minutes were required to administer the test. The split-half reliability ranges from 0.59 to 0.99 averaging to 0.91. The Kuder–Richardson reliability for the test is 0.85. The validity of the test has been computed using Samoohik Mansik Yogyata Pariksha (4/51) and College Exam marks of I and II yr.

Rational Intelligence (Non- Verbal)

The Non-Verbal aspect of Rational Intelligence was assessed by administering the Raven’s Standard Progressive Matrices (SPM). It contains 60 meaningless designs requiring completion presented in 5 subsets, each subset with 12 designs arranged in sequence according to graded difficulty in a test booklet. From multiple-choice options, the testee chooses the design or design part which best fits to: (a) complete a pattern, (b) complete an analogy, (c) systematically alter a pattern, (d) introduce systematic permutations, or (e) systematically resolve figures into parts. Numerous reliability coefficients quoted by Raven vary from 0.80 to 0.90. Reliability reported by other investigators using the split-
half method ranged from 0.70 to 0.90 with older children and adults; test-retest reliability varied within approximately the same range as that found by the split-half method. Validity of the Progressive Matrices tests has been studied in the usual ways. When the Stanford Binet Test of Intelligence was used as the criterion, correlations varied from 0.50 to 0.86.

**Emotional Intelligence**

Emotional Intelligence was assessed by administering the tool developed by Pant and Prakash (2003), a 40 item five-point scale based on the ability model of Emotional Intelligence given by Mayer, Caruso and Salovey (1997) with inputs from Indian understanding of Emotions. The dimensions assessed by the tool are Expression and Regulation of Emotion, Analysis, Relating and using Emotions, Empathy, Perception and Identification of Emotion. The reliability of dimensions ranges from 0.37 to 0.79. The validity of the tool is computed on the basis of its discriminative ability of the construct between the two genders. There are certain group differences expected to be assessed by a valid measure of emotional intelligence (Schutte et al. 1998).

**Spiritual Intelligence**

Spiritual Intelligence was assessed with the help of Spiritual Intelligence questionnaire developed by the researcher, contains 34 situations/items related to behaviour in daily life with 4 options for each situation depicting different degrees of spiritual thinking. The tool assesses four components namely, higher critical thinking/purpose seeking, integration, transcendence, and will power. Corresponding to each situation respondent has to select one option that best represents his/her behaviour in that given situation. The tool possesses content validity. The test-retest reliability at the gap of 25 days is reported to be 0.30.

**Psychological Risk**

Psychological Risk was assessed with the help of Psychological Risk Factors Questionnaire (PRFQ) developed by Sinha et al. (2008) under a WHO sponsored multi-centre project of ‘Behavioural Risk Factors Surveillance Study’. Mental health is conceptualized having two aspects; one is diagnosable mental disorders and second is
psychological attributes in cognitive and affective domains independent of diagnosable mental disorders which determine general psychological well being. The Psychological Risk Factors covered in PRFQ in 30 items are Personal Stress, Maladaptive Coping Style, Negative Affective Regulation, Temperamental/Personality Factors, Negative Cognitive Schemas, and Lack of Emotional/Social Support. The tool is standardized on adults and represents five age groups (15-24, 25-34, 35-44, 45-54, and 55-64). The internal consistency ranges between 0.43 to 0.72, and the test-retest reliability over a month’s period is reported to be 0.88. The tool possesses Content Validity.

**CHANGE PRONENESS**

Change Proneness was assessed with the help of Mukhopadhyay’s Change Proneness Inventory (MCPI), a 5 point rating scale. Change Proneness in teachers was defined on the basis of presence of attributes like open mindedness, eagerness to know, readiness to make extra effort, review of own actions periodically, communicate ideas to others and have experimental attitude. The tool is standardized on 60 secondary school teachers and the split-half reliability of the tool is 0.82. It possesses content validity.

**PROCEDURE OF DATA COLLECTION**

Each Institute forming a part of study was visited and the teachers fulfilling the requirement of the study were contacted in person in their free time and rapport was established with them orienting them with the purpose of the study. All the tools were provided to the subjects in both Hindi and English language to respond according to their convenience except for ‘The Teacher’s Attitude Inventory’, which was available in Hindi Language only, and all the subjects conveniently comprehended the items. The tools were administered in the same sequence on the subjects adhering to the specified instructions in the respective manuals and scoring was done by following the given keys/Instructions.

**DATA ANALYSIS**

The data were analysed with the help of Multiple Correlation and Step wise Regression Analysis.
RESULTS

The results of Joint contribution of Rational Intelligence, Emotional Intelligence, and Spiritual Intelligence in predicting Psychological Risk, and Change Proneness of Teachers separately are given in Tables 1.

Table 1: Multiple Correlation Coefficients for Psychological Risk and Change Proneness of Teachers

<table>
<thead>
<tr>
<th>Criterion Variable</th>
<th>Multiple Correlation coefficient</th>
<th>Remark</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological Risk</td>
<td>R1(234)* = 0.35</td>
<td>p&lt;0.01</td>
<td>0.124</td>
</tr>
<tr>
<td>Change Proneness</td>
<td>R1(234)* = 0.39</td>
<td>p&lt;0.01</td>
<td>0.153</td>
</tr>
</tbody>
</table>

*(2: Rational Intelligence, 3: Emotional Intelligence, 4: Spiritual Intelligence)

From table 1, it is evident that the Multiple Correlation coefficients for Psychological Risk, and Change Proneness of Teachers are 0.35, and 0.39 respectively, which are significant at 0.01 level. It shows that the joint contribution of Rational Intelligence, Emotional Intelligence and Spiritual Intelligence in predicting separately Psychological Risk and Change Proneness of Teachers is significant. Thus, the null hypothesis that there is no significant joint contribution of Rational Intelligence, Emotional Intelligence and Spiritual Intelligence in predicting Psychological Risk and Change Proneness of Teachers separately is rejected. Further, the percentage of joint contribution of Rational Intelligence, Emotional Intelligence and Spiritual Intelligence in predicting separately Psychological Risk and Change Proneness of Teachers are 12.4% and 15.3%, respectively which are significant and substantial. For studying the individual contribution, the data were further analysed with the help of step wise Regression Analysis and the results are given in Table 1.1

Table 1.1: Variable-wise Beta Coefficients and percentage of individual contribution in predicting Psychological Risk, Change Proneness of Teachers

<table>
<thead>
<tr>
<th>Criterion Variable</th>
<th>Predictors</th>
<th>Beta Coefficient</th>
<th>t-value</th>
<th>Remark</th>
<th>% of contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological Risk</td>
<td>Emotional Intelligence</td>
<td>-0.12</td>
<td>2.36</td>
<td>p&lt;0.01</td>
<td>2.4 %</td>
</tr>
<tr>
<td></td>
<td>Spiritual Intelligence</td>
<td>-0.30</td>
<td>5.92</td>
<td>p&lt;0.01</td>
<td>10.0 %</td>
</tr>
<tr>
<td>Change Proneness</td>
<td>Emotional Intelligence</td>
<td>0.39</td>
<td>8.21</td>
<td>p&lt;0.01</td>
<td>15.3 %</td>
</tr>
</tbody>
</table>
From table 1.1, it is apparent that the individual contribution of Rational Intelligence in predicting Psychological Risk is not significant but individual contribution of Emotional and Spiritual Intelligence is significant. Hence, the null hypothesis that there is no significant individual contribution of Rational Intelligence in predicting Psychological Risk is not rejected. On the other hand, the null hypothesis that there is no significant individual contribution of Emotional Intelligence and Spiritual Intelligence in predicting Psychological Risk is rejected. The individual contributions of Emotional Intelligence and Spiritual Intelligence in predicting Psychological Risk are 2.4% and 10.0% respectively. The individual contribution of Emotional Intelligence is too low but for Spiritual Intelligence it is moderate. It may, therefore, be said that Psychological Risk may be predicted on the basis of Spiritual Intelligence.

From Table 1.1, it is evident that the individual contribution of only Emotional Intelligence in predicting Change Proneness is significant at 0.01 level but individual contribution of Rational Intelligence and Spiritual Intelligence is not significant. Hence, the null hypothesis that there is no significant individual contribution of Rational Intelligence and Spiritual Intelligence in predicting Change Proneness is not rejected. On the other hand, the null hypothesis that there is no significant individual contribution of Emotional Intelligence in predicting Change Proneness is rejected. Further, the percentage of significant individual contribution of Emotional Intelligence in predicting Change Proneness is 15.3% which is moderate. It may, therefore, be said that Change Proneness can be predicted on the basis of Emotional Intelligence.

**DISCUSSION**

Thus, as the findings reflect, Psychological Risk may be predicted on the basis of Spiritual Intelligence and Change Proneness on the basis of Emotional Intelligence. Previous research findings exploring a few aspects of the present study provide evidence confirming and supporting the results. It may be noted that in earlier studies, Agashe (1991) found that IQ was not significantly related to Mental Health, teachers with high emotional Intelligence were found to be more effective (Srivastava, 2006), had low professional stress (Pandey 2006)
and better Teaching motivation (Mishra 2006), and higher level of Emotional Intelligence corresponded to significantly lower level of Anxiety (Extremera & Fernandez-Berrocal 2006; Dewaele, Petrides and Furnham 2008; Hassan et al. 2009; Narimani et al. 2009).

With coordinated and integrated functioning of thinking abilities being proved by brain studies (Damasi 1996), cognition and emotion being found to be interdependent (Averill 1982; Zillmann 1983; Baumeister, Stillwell & Heatherton 1994; Medvec, Madey & Gilovich 1995; Tangney et al. 1996), it is difficult to psychometrically assess the pure individual contribution of rational, emotional and spiritual thinking abilities and this is a limitation of the study. Yet it has been attempted, as leaving out any one of them would end in partial assessment of the human potential.

**IMPLICATIONS**

Results emerged suggest that jointly all the predictors have a significant contribution but individually Emotional and Spiritual Intelligence are significant contributors in predicting pivotal criterion variables for the well being of teachers. Even a partial validation of the contention implies that the concepts are of immense utility to the human resource. NCTE in their document of national significance, National Curriculum Framework for Teacher Education, 2009 marking the value of teachers, highlights the importance and need of self-analysis, self evaluation, reflection, social-emotional sensitivity, consciousness, creativity, flexibility, finer human sensibility, response towards inclusive, peace and environmental issues, responsibility towards society in teachers towards building a better world. “While the dimensions of teaching other than the informational and cognitive may have suffered in modern times due to a variety of factors, one cannot deny that they constitute an integral part of the teacher’s role and functions (NCTE 2009, 15).” The idea that objectivity, which is a necessary constituent of knowledge, can be achieved only if knowledge is free from emotions (care, concern, and love) must be abandoned.

Teachers who incorporate spiritual dimension in their work are more inclined towards self reflection; they are attentive to their relationship with their inner self, with others; and with a power greater
than self, their decisions tend to be influenced by virtues as empathy, humility and love (Pecks 1997). Teacher’s inner quest for connectedness, meaning and transcendence often leads to reaching out to others, to an acceptance of and regard for human dignity and to the forming of meaningful relationships (Palmer 1999). The assertion is supported that it will be necessary for higher education to become a more hospitable environment for the spiritual development of both faculty and pre-service teachers (Vokey 2003).

The research findings and the NCTE recent guidelines are a sufficient cause for teacher educators to shift the current cognitive-affective emphasis while equipping the prospective teachers with content, methods, techniques and technology towards a holistic development of Intelligence. Teachers’ professional development should not be viewed as a course where teachers can learn a new skill in a week, but ought to focus on support for teachers’ spiritual growth so that they experience meaning in what they do, turning their job into a vocation by achieving sense of personal wholeness, purpose and direction. In earlier studies Emotional and Spiritual Intelligence have been found to be the fundamental ability aiding effectiveness in cross cultural environment (Jazaeri and Kumar 2008; Yang and Wu 2009). Taking cognizance of cultural differences in societies facing cultural diffusion, the teachers are posed with unique challenges and the use of Emotional and Spiritual Intelligence in dealing with variations would come to their advantage by enhancing their capability. A close inspection reveals the fact that though the results are significant it is not worth being jubilant as low variance is shared between the predictors and the criterion variables leaving further room for research.
REFERENCES


