



Brain Hemispheric Dominance as the Correlate of the Dimensions of Spiritual Intelligence of Student Teachers

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Abstract

The present study was undertaken to examine Spiritual intelligence in relation to brain hemispheric dominance of student teachers. The sample comprised of 500 student teachers studying in education colleges affiliated to Punjabi University Patiala. Data were collected by using spiritual intelligence scale (2008) developed by Dr. Tirath Singh; Brain hemispheric dominance scale developed by McCarthy (1986). The result revealed that there was negligible, negative and significant correlation between brain hemispheric dominance and spiritual intelligence of student teachers.

Keywords: Spiritual Intelligence, Brain Hemispheric Dominance, Teachers.

Introduction

Spiritual intelligence is necessary for discernment in making spiritual choices that contribute to psychological well-being and overall healthy human development. Spirituality exists in the hearts and minds of men and women everywhere, within religious traditions and independently of traditions. Spiritual intelligence is an intelligence by which we achieve our deepest states of significance, values, purposes and transcendental motivations. This intelligence helps how to apply such states in our thinking process, decisions we make and problems that we think have value to perform (Zohar and Marshall, 2004). Spiritual intelligence may be seen as a brain-based potential to utilize Spiritual abilities and Spiritual resources for solving problems of ultimate concern. Cerebral Dominance or Brain Hemisphericity is the tendency of an individual to process information through the left hemispheric or the right hemisphere or in combination Bradshaw and Nettleton (1981); Springer and Deutsch (1993); Mccarthy (1996). The Oxford Dictionary of Psychology (2005) defines brain hemispheric dominance as “the tendency for one of the cerebral hemispheres of the brain to dominate certain functions. Encarta (2006) also defines brain hemispheric dominance as dominance of one side of the brain and explains it as the normal tendency for one of the two sides of the brain or brain hemispheric dominance to have stronger control over some functions of the mind and the body. Gazzaniga and Sperry (1967); Duke (1968); Sperry (1968); Bogen et al. (1969); Gazzaniga (1970); Galin and Ornstein (1974); Sperry (1975) have confirmed that our brain consists of two distinctive but anatomically symmetrical units, the right and left hemispheres. Thus, brain hemispheric dominance is the ability of one cerebral Hemisphere, commonly referred to as the left or right side of the brain, to

predominately control specific tasks. Harth (1990) expounds brain hemispheric dominance refers to the functioning of the neo- cortex which is the outer, visible, portion of the brain that covers the brain stems like the head of a mushroom. It is divided by a longitudinal tissue into two highly convoluted walnuts like configuration of left and right hemisphere more commonly known as cortical hemispheres. The two hemispheres communicate with each other through a thick band of 200-250 million nerve fibers called the corpus collosum. Zohar and Marshall (1994); Singer and Gray (1995); Emmons (1999) discovered that there are neural processes in the brain devoted to making interconnections that unify the rational, emotional and spiritual experience. Spiritual intelligence may be seen as a brain-based potential to utilize Spiritual abilities and Spiritual resources for solving problems of ultimate concern. Kovalik and Olsan (1994) found that spiritual intelligence can be thought as a super process integrating stimuli to the left and the right brain with perspectives that cross to each other and also question about the meaning of present situation.

Method

Descriptive survey method was used in the present study.

Sample and design of the study:

Population for present study is student teachers studying in all colleges of education affiliated to Punjabi University Patiala. There are total 84 colleges of education affiliated to Punjabi University Patiala. Approximately 14,000 student teachers are studying in these colleges, out of these colleges 25 colleges will be selected through stratified random sampling technique. 500 student teachers in these colleges were selected through cluster sampling technique.

Tools

1. Spiritual Intelligence Scale developed by Dr. Tirath Singh (2008).
2. Brain Hemispheric Dominance Scale developed by McCarthy (1986).

Analysis and Interpretation of Data

Coefficient of correlation between Spiritual Intelligence and Brain Hemispheric Dominance of Student Teachers

Table 1
Coefficient of Correlation between Spiritual Intelligence and Brain Hemispheric Dominance of Student Teachers

Dimensions of Spiritual Intelligence	Brain Hemispheric Dominance	
	Sig. (2-tailed)	Pearson Correlation
Total Spiritual Intelligence Score	.001	-.124**
Commitment	.727	-.012
Divinity	.017	-.083*
Flexibility	.019	-.082*
Gratitude	.001	-.137**
Intuition	.001	-.106**
Inquisitive-behavior	.017	-.083*
Field-independent	.001	-.158**
Mission	.918	-.004
Inner-peace	.001	-.165**
Self-awareness	.001	-.090**
Vision	.176	-.047
Virtuous-behavior	.782	.010

*p<0.05; **p<0.01

The coefficient of correlation (table 1) between brain hemispheric dominance and spiritual intelligence is -.124 which is significant at .01 level. It means that there is negative and significant correlation between brain hemispheric dominance and spiritual intelligence of student teachers. In the light of this the null hypothesis that there is no significant correlation between spiritual intelligence and brain hemispheric dominance of student teachers, is rejected. Therefore it may be concluded that as score moves from left to right brain hemispheric dominance the score of spiritual intelligence of student teachers decrease slightly.

The coefficient of correlation (table 1) between brain hemispheric dominance and commitment dimension of spiritual intelligence is -.012 which is not significant at .05 level. It means that brain hemispheric dominance and commitment dimension of spiritual intelligence of student teachers not share variance significantly. In the light of this the null hypothesis that there is no significant correlation between brain hemispheric dominance and commitment dimension of spiritual intelligence of student teachers, is not rejected. Therefore it may be concluded that there is no significant correlation between coping-stress and commitment dimension of spiritual intelligence of student teachers.

The coefficient of correlation (table 1) between brain hemispheric dominance and divinity dimension of spiritual intelligence is -.083 which is significant at .05 level. It means that there is negative and significant correlation between brain hemispheric dominance and spiritual intelligence of student teachers. In the light of this the null hypothesis that there is no significant correlation between brain hemispheric dominance and divinity dimension of spiritual intelligence of student teachers, is rejected. Therefore it may be concluded that as

score moves from left to right brain hemispheric dominance the score of divinity dimension of spiritual intelligence of student teachers decrease slightly.

The coefficient of correlation (table 1) between brain hemispheric dominance and flexibility dimension of spiritual intelligence is $-.082$ which is significant at $.05$ level. It means that there is negative and significant correlation between brain hemispheric dominance and spiritual intelligence of student teachers. In the light of this the null hypothesis that there is no significant correlation between brain hemispheric dominance and flexibility dimension of spiritual intelligence of student teachers, is rejected. Therefore it may be concluded that as score moves from left to right brain hemispheric dominance the score of flexibility dimension of spiritual intelligence of student teachers decrease slightly.

The coefficient of correlation (table 1) between brain hemispheric dominance and gratitude dimension of spiritual intelligence is $-.137$ which is significant at $.01$ level. It means that there is negative and significant correlation between brain hemispheric dominance and spiritual intelligence of student teachers. In the light of this the null hypothesis that there is no significant correlation between brain hemispheric dominance and gratitude dimension of spiritual intelligence of student teachers, is rejected. Therefore it may be concluded that as score moves from left to right brain hemispheric dominance the score of gratitude dimension of spiritual intelligence of student teachers decrease slightly.

The coefficient of correlation (table 1) between brain hemispheric dominance and intuition dimension of spiritual intelligence is $-.106$ which is significant at $.01$ level. It means that there is negative and significant correlation between brain hemispheric dominance and spiritual intelligence of student teachers. In the light of this the null hypothesis that there is no significant correlation between brain hemispheric dominance and intuition dimension of spiritual intelligence of student teachers, is rejected. Therefore it may be concluded that as score moves from left to right brain hemispheric dominance the score of intuition dimension of spiritual intelligence of student teachers decrease slightly.

The coefficient of correlation (table 1) between brain hemispheric dominance and inquisitive-behavior dimension of spiritual intelligence is $-.083$ which is significant at $.05$ level. It means that there is negative and significant correlation between brain hemispheric dominance and spiritual intelligence of student teachers. In the light of this the null hypothesis that there is no significant correlation between brain hemispheric dominance and inquisitive-behavior dimension of spiritual intelligence of student teachers, is rejected. Therefore it may be concluded that as score moves from left to right brain hemispheric dominance the score of inquisitive-behavior dimension of spiritual intelligence of student teachers decrease slightly.

The coefficient of correlation (table 1) between brain hemispheric dominance and field-independent dimension of spiritual intelligence is $-.158$ which is significant at $.01$ level. It means that there is negative and significant correlation between brain hemispheric dominance and spiritual intelligence of student teachers. In the light of this the null hypothesis that there is no significant correlation between brain hemispheric dominance and field-independent dimension of spiritual intelligence of student teachers, is rejected. Therefore it may be concluded that as score moves from left to right brain hemispheric

dominance the score of field-independent dimension of spiritual intelligence of student teachers decrease slightly.

The coefficient of correlation (table 1) between brain hemispheric dominance and mission dimension of spiritual intelligence is $-.004$ which is not significant at $.05$ level. It means that brain hemispheric dominance and mission dimension of spiritual intelligence of student teachers not share variance significantly. In the light of this the null hypothesis that there is no significant correlation between brain hemispheric dominance and mission dimension of spiritual intelligence of student teachers, is not rejected. Therefore it may be concluded that there is no correlation between empathy and mission dimension of spiritual intelligence of student teachers.

The coefficient of correlation (table 1) between brain hemispheric dominance and inner-peace dimension of spiritual intelligence is $-.165$ which is significant at $.01$ level. It means that there is negative and significant correlation between brain hemispheric dominance and spiritual intelligence of student teachers. In the light of this the null hypothesis that there is no significant correlation between brain hemispheric dominance and inner-peace dimension of spiritual intelligence of student teachers, is rejected. Therefore it may be concluded that as score moves from left to right brain hemispheric dominance the score of inner-peace dimension of spiritual intelligence of student teachers decrease slightly.

The coefficient of correlation (table 1) between brain hemispheric dominance and self-awareness dimension of spiritual intelligence is $-.090$ which is significant at $.01$ level. It means that there is negative and significant correlation between brain hemispheric dominance and spiritual intelligence of student teachers. In the light of this the null hypothesis that there is significant correlation between brain hemispheric dominance and self-awareness dimension of spiritual intelligence of student teachers, is rejected. Therefore it may be concluded that as score moves from left to right brain hemispheric dominance the score of self-awareness dimension of spiritual intelligence of student teachers decrease slightly.

The coefficient of correlation (table 1) between brain hemispheric dominance and vision dimension of spiritual intelligence is $-.047$ which is not significant at $.05$ level. It means that brain hemispheric dominance and vision dimension of spiritual intelligence of student teachers not share variance significantly. In the light of this the null hypothesis that there is no significant correlation between brain hemispheric dominance and vision dimension of spiritual intelligence of student teachers, is not rejected. Therefore it may be concluded that there is no significant correlation between brain hemispheric dominance and vision dimension of spiritual intelligence of student teachers.

The coefficient of correlation (table 1) between brain hemispheric dominance and virtuous-behavior dimension of spiritual intelligence is $.010$ which is not significant at $.05$ level. It means that brain hemispheric dominance and virtuous-behavior dimension of spiritual intelligence of student teachers not share variance significantly. In the light of this the null hypothesis that there is no significant correlation between brain hemispheric dominance and virtuous-behavior dimension of spiritual intelligence of student teachers, is not rejected. Therefore it may be concluded that there is no correlation between brain hemispheric dominance and virtuous-behavior dimension of spiritual intelligence of student teachers.

Findings

- Brain hemispheric dominance was negligible, negative and significantly correlated with spiritual intelligence and its dimensions (divinity, flexibility, gratitude, intuition, inquisitive-behavior, field-independent, peace and self-awareness) of student teachers. It implies that as score moves from left to right brain hemispheric dominance the score of spiritual intelligence decrease slightly.
- Brain hemispheric dominance was not significantly correlated with (commitment, mission, vision and virtuous-behaviour) dimensions of spiritual intelligence.

Discussion

The result of the present study revealed that spiritual intelligence of student teacher was negligible, negatively and significantly correlated with brain hemispheric dominance. There was relatively less literature found on brain hemispheric dominance particularly in education. Further there are rare studies which studied on the relation between spiritual intelligence and spirituality related variables with brain hemispheric dominance of student teacher. It is difficult to say that whether the literature found (discussed below) support or not support the present finding. Most related finding in previous literature showed mixed trend. Studies such as Anderson (1980); Zohar and Marshall (1994); Kovalik and Olsan (1994); Singer and Gray (1995); Presinger (1996); Deacon (1997); Deutsch and Springer (1997); Kirk and Martin (1999); Kirk et al. (1999); Emmons (1999); Ramachandran (1999); Lutz et al. (2001); Keenan et al.(2001); Newberg and D'Aquili (2001); Wolman (2001); Cozolino (2002); Gallese (2003); Davidson et al.(2003); Lutz et al. (2004); Swarup (2010); Owen et al. (2011) and Miller et al.(2013) found that spiritual experiences are gained by intensifying awareness and alertness of the brain. Zohar and Marshall (2001) revealed that spiritual intelligence can be thought of as a super-process integrating stimuli to the left- and right-brain with perspectives that cross-cue each other, and also question about the meaning of present situation. Miller et al. (2013) report that they have found a direct correlation between the level of importance a person places on spirituality in their lives and the thickness of certain regions of their brains. Owen et al. (2011) showed that religion have potentially beneficial effects on brain function, anxiety, and depression. Anderson (1980) and Kovalik and Olsan (1994) found that spiritual intelligence can be thought as a super process integrating stimuli to the left and the right brain with perspectives that cross to each other and also question about the meaning of life. Presinger (1996) and Ramachandran (1999) independently claim to have discovered the "God Spot" within the brain. The "God Spot" is an area in the brain that functions like a built in the spiritual center located within neural connections in the temporal lobes and found that human are naturally predisposed to think in spiritual terms. Deacon (1997) and Wolman (2001) found that the brain has the ability to construct symbolic imaginative processes resulting in deep reflective thinking about the meaning of life, experience and human existence. Presinger (1996) and Newberg and D'Aquili (2001) showed that there is a clear relationship between language, reading and spiritual development and the area of partial lobe. This portion of the brain helps us to have a

sense of our body and help to integrate our spiritual experiences. Newberg and D'Aquili (2001) noted that during a peak spiritual experience participants showed a decreased activity in the parietal lobe. The frontal lobe is involved in motor behavior, expressive language, executive functioning, abstract reasoning and directed attention. Cozolino (2002) found that spiritual experiences are gained by intensifying awareness and alertness of the brain. In previous literature no direct study was found which examined the correlation between the dimensions of spiritual intelligence such as and the brain hemispheric dominance of student teachers. In previous literature no direct study was found which examined the correlation between the dimensions of spiritual intelligence such as and the brain hemispheric dominance of student teachers. This gap also indicate the need of further research on different population of regarding relationship of brain hemispheric dominance and the dimensions of spiritual intelligence.

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