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EFFECT OF ORIENTATION IN NEUROCOGNITIVE STRATEGIES ON CULTURAL COMPETENCY OF PANIYA TRIBAL STUDENTS

Dr. S. Amutha¹ and Tomy K. O.²

¹ Assistant Professor, Department of Educational Technology, Bharathidasan University, Tiruchirappalli, Tamil Nadu.

² Research Scholar, Department of Educational Technology, Bharathidasan University, Tiruchirappalli, Tamil Nadu.

ABSTRACT:

Educational Neuroscience is an amalgamation of ideas from education, neuroscience and psychology to enhance learning capacity of the students. Neuroscience research provides framework; that is biologically driven for the development of cultural competence of the society. An experiment study was conducted to identify the effectiveness of orientation using Neurocognitive strategies on the cultural competency of Paniya tribal student is regarding the Customs,

Mother tongue, Arts, Assertiveness, Self-Confidence, Social Awareness and Insight. 60 participants from grade 8th, 9th and 12th from Paniya tribals of Sulthan Bathery Municipality of Wayanad district of Kerala formed the sample selected through Stratified Random Sampling technique. Investigator developed Structured Questionnaire to collect the data. Results revealed that there is a significant difference between the mean scores of Pre-test and Post-test. 21 days of residential orientation programme was provided effective.

KEYWORDS: Behavioral Inhibition, Assertiveness, Self-Confidence, Social Awareness, Neurocognitive Strategies.

INTRODUCTION :

The inner self and the ability of the individual are framed and honed through education. Indian subcontinent hosts variety of indigenous people and constitutes the single largest tribal population in the world. The Scheduled Tribes often experience isolation among other communities which lead to exclusion from educational opportunities, social participation, and access to their own land. The dropout rates are very high among

most underdeveloped and numerically significant Paniya and Adiyar tribes (Paul, 2014). They have strong feeling of marginality, helplessness or powerlessness, dependence inferiority and educational backwardness (Aerthayil, 2008). As a result of their socio economic backwardness and cultural practices Paniya students withdraw themselves from the main stream community (Justin, 2016, Sedwal & Kamat, 2008), Kaul, 2001). Paniya students have behavioral inhibition and show behavioral signs of fear and anxiety when introduced to unfamiliar persons and situations, elicit negative reactions to others often develop

problems, such as depression, anxiety and low social health (Amutha & Tomy, 2019). Cultural neuroscience studies have exemplified the cultural underpinnings connected with the structure and functions of human brain and its ability to coordinate thoughts and behavior within social groups for survival (Fiske, (2002). It aims to uncover how repeated engagement in different socio cultural environment influences the brain (Kitayama & Uskul, 2011). The

functional organization of the human brain elucidates the intrinsically biosocial nature of the human brain (Han Northoff, et al. 2013). Neuroscientists have confirmed that the impact of culture on our brains is so strong that it can change the way we see the world (Jim Warford, 2018). The intersection of cultural experiences and neurobiology of stress on genetic processes provides the relationship between adverse cultural experiences (e.g., racial discrimination) disrupt neurobiological functioning (Bolger et.al. 2005). The biological linkage between discrimination and health attributes to threats or actual acts of aggression (Hillet.al. 2017). Discrimination among the communities influences the Cortisol Rhythm and normal function of brain (Rowell et al. 2012). Cultural differences also in social and non-social processes are mediated by distinct neural networks (Han & Ma, 2014). Cognitive neuroscience has revealed the cross-cultural differences in the neuronal mechanisms underlying cognitive, perceptual and social domains and how education changes the brain (Ansari, 2012). With this background knowledge neurocognitive orientation was developed.

BACK DROP OF THE STUDY

Government has taken several initiatives for the educational improvement of tribal community; still their literacy rate is very low in comparison with the other communities in the country. Total literacy rate of Wayanad district is 89.03 percentage when tribal population; it was only 61.87 percentage (2011 census). Behavioral inhibition is an important factor for their indifferent attitude toward the formal system of education. Behaviorally inhibited children have fear and anxiety. Neurocognitive orientation was developed based on the principle of natural function and structure of the brain. Orientation in mindfulness, metacognitive awareness, assertiveness and self-confidence were given to Paniya tribal students to enhance the cultural competency of them.

OBJECTIVES OF THE STUDY

- To develop and validate neurocognitive strategies module for Paniya tribal students.
- To find out the effect of Orientation on Performance standard of Paniya tribal students towards their cultural competency.
- To evolve recommendations on the basis of the findings of the study for future policy and planning.

HYPOTHESES

1. Paniya tribal students in control group do not differ significantly in their cultural competency between pre-test and post-test.
2. Paniya tribal students in experimental group do not differ significantly in their cultural competency between pre-test and post-test.
3. Paniya tribal students in experimental group and control group do not differ significantly in their cultural competency in the post-test.

DESIGN OF THE STUDY

Experimental method with single group pre-test post-test design was adopted in this study. Pre-test was administered in the beginning to ascertain the entry behavior of the students. Post-test was conducted after 21 days of residential orientation programme using Neurocognitive strategies. 60 students of Paniya tribal community participated in the study selected through stratified random sampling technique. Structured Questionnaire was used to collect data. This study investigated the effect of neurocognitive strategic orientation on cultural competency of Paniya tribal students of 8th, 9th and 12th grade in government schools at Sulthan Bathery Municipality, located in Wayanad district of Kerala. Questionnaire was the tool used in this study which consisted of 36 items with 5-point scale (Never=1, Occasionally=2, Rarely=2, Indecisive=3, Often=4, Always=5).

ANALYSIS AND INTERPRETATION

Table 1: Descriptive Analysis for Pre-Test and Post-Test of Control Group in their Cultural Competency

Group	N	Pre-test		Post-test		Df	t-value	Sig.
		Mean	SD	Mean	SD			
Control Group	30	8.80	1.095	9.40	1.610	58	1.687	0.01

Figure 1: Pre-Test and Post-Test of Control Group in their Cultural Competency

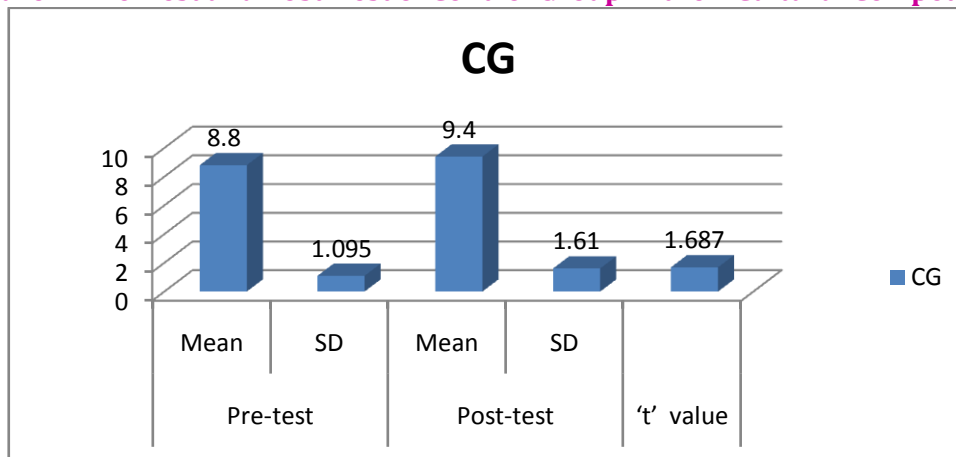


Table-1 depicts that the students of control group without orientation on neurocognitive strategies differ significantly in their cultural competency scores between the pre-test and post-test at 0.01 level of significance. The mean score of the post-test (M=9.40) and (SD=1.610) are almost same than that of pre-test (M=8.8) and (SD=1.095).

Table 2: Descriptive Analysis for Pre-Test and Post-Test of Experimental Group in their Cultural Competency

Group	N	Pre-test		Post-test		Df	t-value	Sig.
		Mean	SD	Mean	SD			
Experimental Group	30	9.33	1.322	24.80	1.710	58	.000	0.01

Figure 2: Pre-Test and Post-Test of Experimental Group in their Cultural Competency

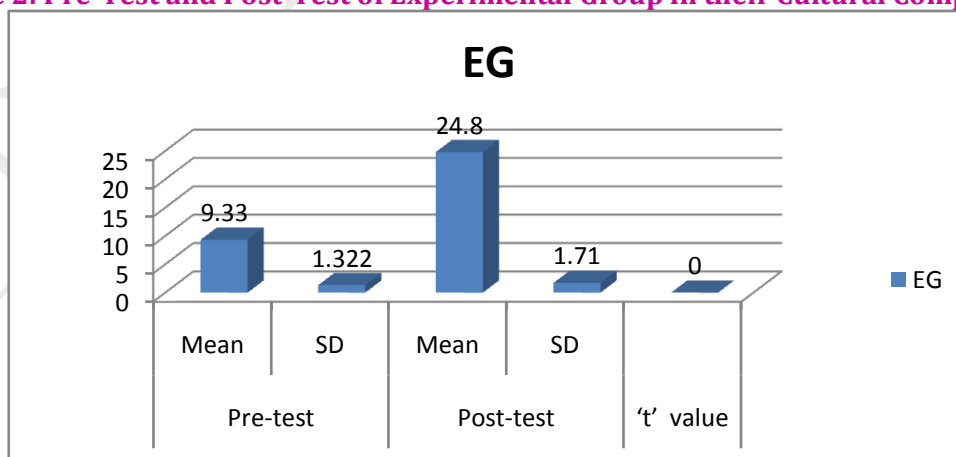


Table-2 shows that the students of experimental group with orientation on neurocognitive strategies showed significant difference in their cultural competency scores between the pre-test and

post-test at 0.01 level of significance. The mean score of the post-test ($M=24.80$) and ($SD=1.710$) is greater than that of pre-test ($M=9.33$) and ($SD=1.322$). It shows that the effect of orientation in neurocognitive strategies on the cultural competency of Paniya tribal students was effective.

Table 3: Descriptive Analysis for Pre-Test and Post-Test of Control Group and Experimental Group on their Cultural Competency

Group	N	Pre-test		Post-test		Df	t-value	Sig.
		Mean	SD	Mean	SD			
Control Group	30	8.80	1.095	9.40	1.610	58	1.687	0.01
Experimental Group	30	9.33	1.322	24.80	1.710	58	.000	0.01

Figure 3: Pre-Test and Post-Test of Control Group and Experimental Group on their Cultural Competency

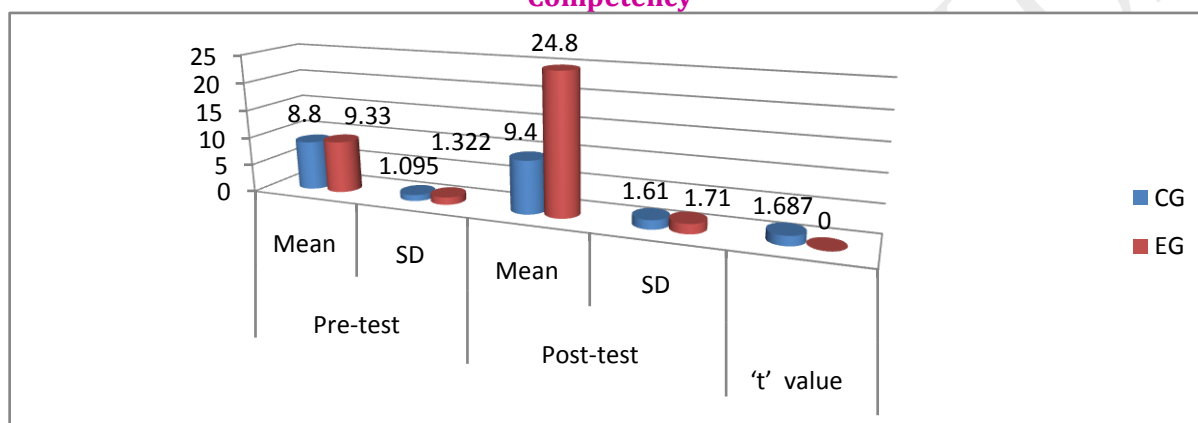


Table-3 reveals that the mean score of control group in the post-test ($M=9.40$) and ($SD=1.610$) are almost same from the pre-test ($M=8.80$) and ($SD=1.095$) scores. The mean scores and standard deviation of the experimental group in post-test ($M=24.80$) and ($SD=1.710$) is greater than that of pre-test ($M=9.33$) and ($SD=1.322$). This increased mean score of experimental group clearly indicates that there is a significant influence of orientation in Neurocognitive Strategies on the cultural competency of Paniya students. Hypothesis is rejected.

FINDINGS OF THE STUDY

- There is no significant difference found between the pre-test and post-test of Paniya tribal students' cultural competency in control group.
- There is significant difference found between the pre-test and post-test of Paniya tribal students' cultural competency in experimental group.
- In the post-test of Experimental group, Paniya tribal students' cultural competency was high.

DISCUSSION

Clayton et al. (2007), Losin & Iacoboni (2009), Ansari, D. (2012), Han, S., & Ma, Y. (2014), Muthukrishna et al. (2018) says that the neuroscience studies have exemplified the cultural nature connected with the structure and functions of human brain. Research done by Justin (2016), Sedwal & Kamat (2008), Kaul (2001) gave a detailed report about the cultural factors considerably shape social interactional milieu of Paniya tribal students within the school regarding the poor friendships, poor social support, poor school integration, disconnections, distance, sense of otherness, rejections and dominance in cultural competency among tribal students. Present study identified the customs, mother tongue, arts, assertiveness, self-confidence, social awareness and insights are some of the factors affect cultural competency of Paniya tribal students.

Research done by Fiske, A. P. (2002), Bolger, D. J., Perfetti, C.A., & Schneider, W. (2005), Kitayama, S., & Uskul, A.K. (2011), Kitayama, S., & Uskul, A. K. (2011), Fuller-Rowell, T. E., Doan, S. N., & Eccles, J.S. (2012), Han, S., Northoff, G., Vogeley, K., Wexler, B.E., Kitayama, S., & Varnum, M.E.W. (2013), Hill, L.K., Hoggard, S., Richmond, A.S., Gray, D.L., Williams, D.P., & Thayer, J.F. (2017), Michael Muthukrishna, Michael Doebeli, Maciej Chudek, Joseph Henrich (2018) et al. found that the developmental disorders that begin early in life influences the persistent health disparities associated with poverty, discrimination, or maltreatment and intercultural reticence in childhood which is the reason for their behavioral inhibition. Present study also goes in line with their findings. Orientation based on Neurocognitive Strategies improved the cultural competency of Paniya tribal students.

CONCLUSION

Cultural competency is vital for education. Learning will not happen unless the learner feels safe (Sylwester, 1996). Stress and constant fear circumvent the brain's normal circuits (Viadero, 1996). This study proved that restructuring the behavioral pattern through orientation using neurocognitive strategies was found very effective for improving the cultural competency of Paniya tribal students. Therefore, orientation could enhance the cultural competency of Paniya students. Hence Paniya tribal students became socially healthy.

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