Abstract

The elementary school stage is a significant phase for the human child. It is the initial developmental stage in life, at which various developments occur. The development of cognitive aspects is crucial at this stage. Cognitive Equivalence (CE) and Learning (LS) are two fundamental aspects of human cognition. CE is the logical explanation of similarity. It is an ability that includes other abilities like identifying and classifying. It is the ability to classify stimuli (pictures, models or words) based on commonness and the logical explanation of similarity. CE have a significant role in teaching-learning in the school context. LSs are the ways or, patterns or preferences in learning or processing information. Each individual prefers to learn, process information, memorize and retrieve information in their ways. Therefore, knowing LSs is crucial for the individual as well as for teachers. Like all other cognitive abilities, CE and LSs are also not limited to a particular individual, group, or culture; these are universal. It changes with age and varies person to person, culture to culture. So, it is important to have knowledge about the variations and causes of variations in CE and LSs among different individuals, groups and cultures. The present study is an attempt to study CE and LSs of Muslim elementary school children in West Bengal, India. This study specifically measured the number of stimuli taken to form groups by the participants in each class and the time taken to complete all their CE test. It also measured the influence of Anthro-Pedagogical variables like- age, class, gender, birth type, birth order, BMI, number of siblings, parental educational qualification, family type and family monthly income on CE and LS. Further, it also assessed the influence of LS on CE, and the moderating role of selected anthro-pedagogical variables. For this study, the researcher followed quantitative, Descriptive, observational method with a cross-sectional design. The study included randomly selected 172 Muslim elementary school children studying in Class I, II, III, IV and V. Participants were selected from two government-aided primary schools in Purba Bardhaman District in the state of West Bengal. LS was measured through a Learning Style Inventory translated and adopted into Bengali by Khan and Mohakud (2023). Students were categorized as Visual, Auditory, Read/Write, Kinaesthetic and Multi-Modal Learners. Cognitive equivalence was measured through three cognitive equivalence tests (Picture, Model and Word-based Tests) developed by Mohakud and Khan (2023). The researcher counted the number of stimuli taken to form groups and the time to complete the CE tests. Scores were assigned for overall, test-wise and dimensions-wise CE. The specific dimensions were perceptible equivalence (PE), functional equivalence (FE), nominal equivalence (NE), affective

equivalence (AE) and fiat equivalence (FiE). Data normality was checked through Kolmogrov-Smirnov, Shapiro-Wilk test and Skewness and Kurtosis statistics. Accordingly, data were analyzed using mean, SD, frequency, percentage, t-test, Mann-Whitney U test, ANOVA, Kruskal-Wallis test, and regression analysis in SPSS. Results revealed that most students preferred the read/write learning style overall and class-wise. Compared to lower class students (Class I, II, III), on average, higher class students (Class IV and V) formed groups with more stimuli and took more time to complete the cognitive equivalence tests (CETs). The model and picture test were easier than the word test. Further, the hypothesis testing results showed that except picture based cognitive equivalence (PCE) and PE and NE dimensions, all other aspects of CE significantly increased with age. Except for PE, the trend was similar in terms of class. Further, gender, birth type, birth order, number of siblings, family type, and family income do not significantly influence overall, task-wise, or dimensions-wise CE. In the case of parental educational qualification, no significant variation was found in all the aspects of CE except NE for the mother's educational qualification. Concerning BMI, a significant variation was observed in model-based cognitive equivalence (MCE) and in the AE and FiE dimensions. In the case of LSs, except gender, no other anthro-pedagogical variables significantly influenced LS preferences of Muslim elementary school children. Finally, the result also revealed significant variations in overall cognitive equivalence (OCE), PCE and FE; however, other aspects of CE do not vary significantly concerning LS preferences of Muslim elementary school children. Findings also revealed that selected anthro-pedagogical factors like number stimuli taken to form groups, time taken to complete the CESs, age, BMI and family monthly income do not significantly moderate the relationship between LSs and OCE. The study's findings highlight the importance of understanding individual LSs and CE variations in early schooling. Educators must modify their teaching strategies to address different learning preferences, with particular emphasis on read/write learners, the predominant style recognized. The escalating intricacy of cognitive engagement tasks with age indicates the need for age-appropriate, more challenging activities to facilitate cognitive development. The little impact of socio-demographic characteristics underscores that cognitive equivalence and learning styles are universal, necessitating educators prioritizing task-specific support over external demographic influences.