

## ABSTRACT

Academic Achievement (AA) portrays the academic outcome that indicates the extent to which students have attained their educational goals. To perform well academically, children must be made aware of not just their intelligence level but also the kind of intelligence that each possesses (Batdi, 2017). Learning Styles (LS) is concerned with how the learners learn rather than what they learn and are believed to be a crucial factor for students' AA (Gokalp, 2013. More so, Yasin, 2020) has stated that a well-thought-out Teaching Pedagogy (TP) is essential in aiding school children to learn more effectively and develop thinking skills of higher order. The study was undertaken with the primary objective of developing predictive models of MI, LS, and TP for the subject-wise AA of school children. The study's secondary objective was to determine the influence of socio-demographic variables on AA, MI, LS, and TP. An exploratory research design was adopted with randomly selected 3026 school children (studying in schools following the *Samacheer Syllabus* - Uniform syllabus of Tamil Nadu) enrolled in 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> standard who constituted the sample and 215 teachers handling classes for these children. Four tools were used to get the necessary data from school children, namely a self-formulated general background questionnaire to get the personal and parental profiles of the school children. Standardized tools, namely the Multiple Intelligence Scale developed by Agarwal & Pal and the Learning Style Inventory developed by Misra, were used to determine student respondents' intelligence and learning patterns, and the Teaching Style Scale developed by Sharma and Saran was used to assess the teaching style of the teacher respondents. Likert Scale to assess subject-wise Academic Achievement (secondary data procured from the student's report cards) of the selected students. The average marks of five major subjects (Language, English, Mathematics, Science, and Social Science) in the five major exams conducted in an academic year were categorized using the commonly used grading system of the schools of Tamil Nadu. The collected data were statistically computed using frequency analysis, t-test, and ANOVA with the independent (socio-demographic variables) and dependent variables (AA, MI, LS, and TP) Hierarchical regression was used with the outcome variable AA in all five subjects and predictor variables as the 9 types of MI, 6 types of LS, and 5 types of TP.

The study revealed that more than 50% of the student respondents had only average and above average levels of AA in almost all the subjects except Language. However, 60 - 70% of the respondents were observed to possess average and above-average levels in all

domains of MI. In terms of LS, except for FC, all other types of LS were practised only at an average level. The five types of TP, as practised by the selected teacher respondents, were at average and above-average levels. However, the Delegator type of TP was practised at a higher level (17.6%) than other teaching pedagogy. Among all the socio-demographic factors pertinent to school children, the type of family was found to be an independent factor for AA, MI, and LS. The father's educational status was the next least influencing factor. Teachers' experience and educational qualifications influenced the Formal authority TP and Demonstrator TP, respectively.

The five predictive models of a good fit for AA derived in each subject provided the following clues regarding positive and negative contributors to AA. Logical, Spatial, Naturalistic, and Intrapersonal types of MI positively predict the AA of one or the other subjects. Likewise, in terms of LS, only ER influenced AA on a positive note.

*Language* - the finding of the study stated that an increase in one unit of naturalistic intelligence and expert TP of teaching will increase the language scores of children by 0.075 and 0.081. The negative regression weight signifies an indirect relationship between these predictors and language score. Increase one unit of an existential intelligence, demonstrator and formal authority TP will decrease the language score of children by 0.090, 0.059 and 0.043 marks.

*English* - an increase in one unit of Facilitator style and Formal Authority style of teaching increases the score of children by 0.045 and 0.042 marks. The negative regression weight signifies an indirect relationship between these predictors and English score. Increase in one unit of figural reproducing, expert, and delegator will decrease the English score of children by 0.056, 0.070, and 0.138 marks respectively.

*Mathematics* - an increase in one unit of Logical, Spatial, Naturalistic, and Intrapersonal MI, Enactive Reproducing LS, and Delegator TP increases the Mathematics score of student respondents by 0.093, 0.069, 0.091, 0.119, 0.071 and 0.112 marks. All the more, an increase in one unit of Linguistic and Existential MI, Figural Reproducing LS, Formal Authority, Demonstrator, and Facilitator TP decreased the Mathematics score by 0.203, 0.114, 0.055, 0.094, 0.068, and 0.251 marks, respectively as it had a negative regression weight.

*Science (Fit Model)* -  $\beta_0 + .104$  (logical intelligence) +  $.077$  (spatial intelligence) +  $.076$  (naturalistic intelligence) +  $.138$  (intrapersonal intelligence) +  $.054$  (enactive reproducing) +  $.048$  (expert) +  $.115$  (facilitator) -  $.275$  (linguistic intelligence) -  $.151$

(existential intelligence)  $-.042$  (verbal Constructive)  $-.046$  (figural reproducing)  $-.228$  (formal authority).

*Social Science* - None of the LS had a significant relationship with the outcome variable with respect to social science score. Increase in one unit of facilitator style of TP, and one unit of intrapersonal MI will increase the social science scores of children by 0.087 and 0.103 marks. The negative regression weight signifies an indirect relationship between these predictors and social science score. Increase in one unit of linguistic MI, and demonstrator TP will decrease the Social Science score of children by 0.077 and 0.048 marks. Regarding TP, except for the Demonstrator, other styles predict AA. The higher the linguistic and existential MI, the lower the AA. Similarly, VC and FR were negatively contributing to the AA. The demonstrator style of TP negatively influenced all the subjects except Science.

The predictive models also suggested some of the non-contributing factors and cautious factors to AA. Bodily-kinesthetic, Musical, and Interpersonal domains of MI, EC, VR, and FC of LS were the non-contributing factors, as they did not show any relationship with AA. The cautious factors have positive and negative values and to be taken care of for the respective subjects. For example, Formal Authority TP, which positively predicted AA in English, negatively predicted Language, Mathematics, and Science learning. Similarly, Facilitator TP that positively predicted AA in English, Science, and Social Science was found to be negatively influencing Mathematics learning.

**Key Words:** -, Academic Achievement, Multiple Intelligence, Learning Style and Teaching Pedagogy, and Samacheer Kalvi