EARLY ADOLESCENTS MOTIVATION AND ENGAGEMENT IN LEARNING IN LOW SOCIO-ECONOMIC DISTRICTS IN SRI LANKA (BASED ON TWO-WAY MANOVA AND ONE-WAY ANOVA RESULTS)

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Abstract: Even though, the Sri Lankan government provides a reasonable level of support for students at all levels of the school system, for example, free education, textbooks, school uniforms, subsidised public transportation, and school meals, low participation in learning among secondary students is an issue warranting investigation, particularly in low socio-economic districts. This study attempted to determine the levels of motivation and engagement amongst students in a number of schools in two low socio-economic districts of Sri Lanka. This study employed quantitative research design in an attempt to determine levels of motivation and engagement amongst Sri Lankan secondary school students. Motivation and Engagement Scale-Junior School was administered among 100 Sinhala-medium and 100 Tamil-medium eighth-grade students (50 students from each gender). The mean age of the students was 12.8 years. Schools were represented by type 2 government schools located in Monaragala and Nuwara Eliya districts in Sri Lanka. Confirmatory factor analysis was conducted to measure the construct validity of the scale. Since this did not provide a robust solution, exploratory factor analysis was conducted. Four factors were identified; Failure Avoidance and Anxiety (FAA), Positive Motivation (PM), Uncertain Control (UC), and Positive Engagement (PE). A two-way MANOVA were employed to compare the interaction effect of gender and ethnicity. In this study one-way ANOVA tests were employed to compare the levels of motivation and engagement among schools based on ethnicity. No significant multivariate gender groups by ethnic groups' interaction effect on the set of dependent variables were observed. There was a statistically significant difference between groups as determined by one-way ANOVA in both medium students.

Keywords: Early adolescents, motivation and engagement, low socio-economic districts, two-way MANOVA, one-way ANOVA.

I. INTRODUCTION

According to the annual report (2016) of the Central Bank of Sri Lanka, Sri Lanka is a lower middle-income country with a total population of 21.2 million people with a gender distribution of 49.3% male and 50.7% female. The Sri Lankan annual population growth rate is 1.1%, and the population density is 338 per sq. km. Of the total population, 25.22% are children[1] aged less than 18 years. In 2015, Sri Lanka's per capita income was USD 3,912 and its Human Development Index was 0.766. The Sri Lankan urban population is 18.3% and rural and estate population is 77.3% and 4.4%, respectively. The average literacy rate is 93.2% and expectation of life at birth is 75 years.

National policies and programmes are implemented by the central Ministry of Education which has as its adjuncts the National Institute of Education responsible for curriculum development in schools and teacher education institutions, the National Evaluation and Testing Centre which conducts all public examinations, and the Department of Publications responsible for the publication of primary and secondary school text books. Implementation at provincial and local levels is by provincial and zonal education departments assisted by the marginalised divisional offices of education. Financial allocations are made by the Ministry of Finance to the Central Ministry of Education for national programmes and schools and through the finance commission to the provincial governments, who in turn allocate for provincial schools through the zonal offices.

II. LITERATURE REVIEW

Although Sri Lanka is recognised as a South Asian country with a high literacy rate, this statistic masks major shortcomings of the education system (Liyanage, 2013). Sri Lankan education has been experiencing a number of problems. These include low participation in education and poor attendance, particularly in the secondary and tertiary levels. Poor performance in mathematics and science, unequal distribution of resources among schools, mainly between rural and urban schools, and over-loaded curricula are also major issues (Liyanage, 2013).According to Raju (2016) evidence from standardised tests for Sri Lanka suggests shortfalls in student learning. Also, Sri Lanka's rural schools tend to have the lowest performing students.

According to Little, Indika, and Rolleston (2011) in the Create Pathways Research Monograph, the main challenges facing Sri Lanka currently lie in increasing the achievement levels of all social groups. Disparities need to be reduced between females and males, between urban and rural areas, between school

types and between income groups in terms of enrolment in junior secondary and senior secondary education.

The above data and information show that junior secondary student lower participation in learning is considerable in Sri Lanka, particularly in low socio-economic districts. The reasons for these are varied, but a number of school-related conditions appear to impact negatively on student motivation and engagement in learning.

III. METHODOLOGY

This study employed quantitative research design in an attempt to determine levels of motivation and engagement amongst Sri Lankan secondary school students. Motivation and Engagement Scale-Junior School (Martin, 2014) was administered among 100 Sinhala-medium and 100 Tamil-medium eighth-grade students (50 students from each gender). The mean age of the students was 12.8 years. Schools were represented by type 2 government schools located in Monaragala and Nuwara Eliya districts in Sri Lanka. Confirmatory factor analysis was conducted to measure the construct validity of the scale. Since this did not provide a robust solution, exploratory factor analysis was conducted. Four factors were identified; Failure Avoidance and Anxiety (FAA), Positive Motivation (PM), Uncertain Control (UC), and Positive Engagement (PE).

A two-way MANOVA were employed to compare the interaction effect of gender and ethnicity. In relation to two-way MANOVA test, inspection of relevant indicators revealed that no problems conforming to the assumptions other than the homogeneity of variances. In gender, PM, PE, and FAA in ethnicity PM and FAA scales variances were equal. Therefore, only PM and FAA scales were considered for analyses in two-way MANOVA.

In this study one-way ANOVA tests were employed to compare the levels of motivation and engagement among schools based on ethnicity. In relation to one-way ANOVA tests, inspection of relevant indicators revealed that no problems conforming to the assumptions other than the homogeneity of variances. In relation to schools, only PM scale variances were equal. Therefore, One-way ANOVA was conducted using schools as the independent variable (14 groups) defining the groups to be compared and PM as the dependent variable in relation to both ethnic groups.

IV. RESULTS AND DISCUSSIONS

A two-way between groups factorial MANOVA was conducted using gender and ethnicity as the independent variables defining the interaction between groups to be compared and PM and FAA as the dependent variables.

Table 1

Summary two-way MANOVA tables analysing gender and ethnicity differences on PM and FAA

Multivariate Tests

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Wilks' Lambda	.992	.794[b]	2.000	193.000	.454	.008

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Gender *	PM	.086	1	.086	.026	.872	.000
Ethnicity	FAA	14.869	1	14.869	1.578	.211	.008
Error	PM	646.357	194	3.332			
	FAA	1828.253	194	9.424			
Corrected Total	PM	775.540	197				
	FAA	3011.273	197				

According to the Table 1, no significant multivariate gender groups by ethnic groups' interaction effect on the set of dependent variables were observed.

Table 2

Summary one-way ANOVA tables (SPSS) analysing school differences on PM in Tamil-medium

ANOVA

PM

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	51.150	5	10.230	3.459	.007
Within Groups	248.450	84	2.958		
Total	299.600	89			

Multiple Comparisons
Dependent Variable: PM

Tukey HSD	(J) School	Mean	SD	Mean Difference (I-J)	Sig.
School 2 M=18.64 SD=1.45	School 13	15.75	.70	2.89706*	.002
School 5 M=18.41 SD=1.90	School 13	15.75	.70	2.66176*	.007
School 13 M=15.75 SD=.70	School 2	18.64	1.45	-2.89706*	.002
	School 5	18.41	1.90	-2.66176*	.007

According to Table 2, there was a statistically significant difference between groups as determined by one-way ANOVA (F (5, 84) = 3.459, p= .007). A Tukey post-hoc test revealed that Tamil-medium schools two (M=18.64, SD=1.45) and five (M=18.41, SD=1.90) had significantly higher mean scores compared to school thirteen (M=15.75, SD=.70) in PM.

Table 3

Summary one-way ANOVA tables (SPSS) analysing school differences on PM in Sinhala-medium

ANOVA

PM

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	88.385	7	12.626	4.693	.000
Within Groups	269.050	100	2.690		
Total	357.435	107			

Multiple Comparisons
Dependent Variable: PM
Tukey HSD

(I) School	(J) School	Mean	SD	Mean Difference (I-J)	Std. Error	Sig.
School 6 M=18.10 SD=1.68	School 8	14.25	1.25	3.85000*	.89842	.001
	School 9	16.00	1.93	2.10000*	.65838	.039
	School 10	16.12	1.40	1.97500*	.55016	.012
	School 11	16.10	1.88	2.00000*	.51870	.005
	School 12	16.15	1.89	1.95000*	.51870	.007
	School 14	15.60	1.07	2.50000*	.63528	.004
School 8 M=14.25 SD=1.25	School 6	18.10	1.68	-3.85000*	.89842	.001
School 9 M=16.00 SD=1.93	School 6	18.10	1.68	-2.10000*	.65838	.039
School 10 M=16.12 SD=1.40	School 6	18.10	1.68	-1.97500*	.55016	.012
School 11 M=16.10 SD=1.88	School 6	18.10	1.68	-2.00000*	.51870	.005
School 12 M=16.15 SD=1.89	School 6	18.10	1.68	-1.95000*	.51870	.007
School 14 M=15.60 SD=1.07	School 6	18.10	1.68	-2.50000*	.63528	.004

According to Table 3, there was a statistically significant difference between groups as determined by one-way ANOVA (F (7, 100) = 4.693, p = .001). A Tukey post-hoc test revealed that Sinhala-medium schools six (M=18.10, SD=1.68) had significantly higher mean scores compared to school eight (M=14.25, SD=1.25); nine (M=16.00, SD=1.93); ten (M=16.12, SD=1.40); eleven (M=16.10, SD=1.88); twelve (M=16.15, SD=1.89); and fourteen (M=15.60, SD=1.07) in PM.

Therefore, it could be concluded that, those two schools students' higher levels of PM might have affected for Tamil-medium students significantly higher levels of PM compared to Sinhala-medium students. Also, Sinhala-medium students significantly lower levels of PM compared to Tamil-medium students might have affected by those six schools students' lower levels of PM.

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