6

Primary Students' Mastery on Minimum Learning Competencies in Cognitive Areas based on Gender

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Abstract

The purpose of the study is to find out the mastery of primary school students on minimum level of learning competencies in cognitive areas in relation with their gender. The primary data were collected by administering three standardised achievement questionnaires of NCERT (Hindi, mathematics and environment studies) on 600 primary and elementary school students from 30 schools (20 from Haryana and 10 from Chandigarh). The data were analysed with the help of descriptive and non-parametric statistics. The study revealed a significant difference existed between boys and girls as regards to mastery on minimum level of learning competencies in cognitive areas. Girls showed a higher level of minimum level of learning in Hindi than boys. It was found that both boys and girls did not notice any statistical difference in mathematics and environmental studies. Overall, only 21, 10 and 8 per cent students were found to have achieved mastery on minimum level of learning competencies in Hindi, mathematics and environmental science, respectively. On the basis of the findings, it is suggested that teachers, educational institutions and administration take care about the evaluation of learning competencies and feedback. Besides, constructive approach must be adopted in teaching at the primary level for ensuring better performance by students.

INTRODUCTION

Universal achievement in elementary education means that all students receive quality education. Various reports, surveys and research studies point out that the aim of achieving universal quality of education has not been met due to the use of conventional

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instructional strategies and poor quality of instruction material. Besides, the teaching–learning and evaluation process being followed in schools at the primary and elementary level is faulty. One of the biggest reasons behind not being able to achieve universal quality education is that educational institutions have no defined national achievement standards of learning.

To achieve universal quality of elementary education, a programme titled Minimum Level of Learning (MLL) was suggested to be adopted at each stage of primary education by the National Policy on Education (NPE), 1986. The MLL programme set performance goals for learning process and evaluation to ensure that all students attain the minimum level of learning at the primary stage.

The NPE–1986 focuses on essential aspects of the Universalisation of Elementary Education (UEE). It calls for paying immediate attention to the following.

- Improving the unattractive school environment like the condition of buildings and lack of instructional material
- Laying down the minimum level of learning so that all children completing different stages of education are able to achieve universal achievement in education

Hence, MLL's approach can be defined in a variety of ways, for example in terms of learning competencies and behaviour of children studying in different classes. Each learning competency can be further delineated in terms of sub-competencies while specifying the content inputs or measures of learning. Overall, MLLs are a set of rational criteria adopted for judging the adequacy of curricular inputs provided and learning outcomes to be expected at a particular level of education. Hence, the focus of the curriculum and organised teaching–learning activities is to provide content of facts and information that would have more relevance to the life or needs of a majority of students studying at the primary level. On account of evaluation, emphasis is laid on establishing an accountable education system and its functionaries can reflected in the actual achievement of the learners.

Besides, the NCERT (1991) also emphasises recognising the need for rectifying this prevailing anomalous situation with respect to quality.

REVIEW OF LITERATURE

Review of the available literature represented the students' academic achievements in relation with their gender (review regarding MLL in students in terms of gender is not available).

A study was conducted by Tiwari (2007) on 1200 students (624 male and 576 female) studying in Class V of different districts in Uttar Pradesh. The result vindicates that demographical and socio-economic factors like gender, caste, education,

occupation and income of the family, and location of schools had a significant effect of the dropout and attendance rate in schools.

A similar study was conducted by Khatoon and Mahmood (2010) on 863 male and 789 female students studying in 15 secondary schools of Uttar Pradesh. The findings showed that among the three independent variables, school type had the greatest influence on mathematics achievement (46 per cent), mathematics anxiety stood second, while gender showed no significant influence. Further, male students reported more mathematics achievement than female students. Students with low mathematics anxiety showed the highest achievement scores.

Ahmar and Anwar (2013) examined the effects of gender and socio-economic status of a family on the academic achievement of higher secondary school students in Lucknow, Uttar Pradesh. A sample, consisting of 102 male and 98 female students in the age group of 15 to 19 years from five higher secondary schools in Lucknow was selected for the study. The result of the study shows that gender does not influence achievement in science at the higher secondary (Class XI) level.

In a study conducted by Kulkarni (2013), 60 male and 120 female students from three ashram schools in tribal areas were selected as sample. There existed no major impact of gender and grade on the academic achievement of the students. The study concluded that the role of gender in academic performance is limited.

The review of various literature shows that a number of factors influence the students' levels of achievement in learning. Most of the literature review, particularly, focus on the learning achievements and factors affecting the learning achievements of students. Some research studies define that gender influence the academic achievements of students, while others suggest that there is no effect of gender on the academic achievements of the students.

OBJECTIVES OF THE STUDY

The paper aims to find out the minimum levels of learning in the cognitive area (Hindi, mathematics and environmental studies) of primary school students in relation with their gender.

HYPOTHESES OF THE STUDY

- There is no significant difference between different levels of MLL in Hindi in relation with the gender of the students.
- There is no significant difference between different levels of MLL in mathematics in relation with the gender of the students.
- There is no significant difference between different levels of MLL in environmental studies in relation with the gender of the students.

RESEARCH METHODOLOGY AND COLLECTION OF DATA

Research methodology

The present study is descriptive in nature, so survey method has been adopted for the collection of data. The cognitive domain of students in languages (Hindi), mathematics and environmental studies (including social studies and sciences) has been covered in the study. Three standardised questionnaires of Hindi, mathematics and environmental studies of NCERT (1991) were administered on to 600 primary or elementary school students from Haryana and Chandigarh. The sample was taken from 30 schools (20 from Haryana and 10 from Chandigarh).

Multi-stage sampling technique was used to ensure that the sample obtained was evenly distributed with regard to the socio-economic condition, demography and location of the students. The sample was taken from both rural and urban areas. For the sample, 20 to 25 students were selected from each school. Out of 600 students, only 523 responses were considered appropriate for analysis.

Statistical techniques

The data collected were subjected to statistical analysis, using appropriate tools. Descriptive and non-parametric statistic techniques like frequency, Chi-squares, etc., were used to analyse the data.

ANALYSIS AND INTERPRETATION

Of the total sample size of 523, 245 (47 per cent) were boys and 278 (53 per cent) girls. The analysis and interpretation with regard to primary school students' mastery on the minimum level of learning competencies in cognitive areas in relation with gender are discussed in the following paragraphs.

MLL in cognitive areas on the basis of gender

The main objective of the study was to analyse the minimum level of learning of primary school students in cognitive areas (Hindi, mathematics and EVS) in relation with their gender. Chi-square test was administered for the purpose.

MLL in Hindi on the basis of gender

The primary school students' (boys and girls) minimum level of learning in Hindi is presented in Table 1.

Table 1: MLL of primary school students in Hindi in relation with gender

Gender	Minimum Level of Learning in Hindi (%)			Total
	Mastery	Partial mastery	Non-mastery	
Boys	43 (17.6)	85 (34.7)	117 (47.8)	245 (100)
Girls	68 (24.5)	106 (38.1)	104 (37.4)	278 (100)
Total	111 (21.2)	191 (36.5)	221 (42.3)	523 (100)

χ^2 =6.64,   d. f.=2,   P>0.05 (two-tailed)

Table 1 depicts the minimum level of learning of primary school students in Hindi in relation with their gender. Overall, 42.3 per cent students do not have mastery on the minimum level of learning in Hindi. It is also indicated that 36.5 per cent students from both the gender have partial mastery on the minimum level of learning in Hindi. On the contrary, more girls around 24.5 and 38.1 per cent have mastery and partial mastery, respectively, as compared to boys as regards to the minimum level of learning in Hindi. Most boys (47.8 per cent) have non-mastery on the minimum level of learning in Hindi as compared to girls (37.4 per cent).

The value of the data calculated as per the Chi-square test came out to be 6.64, which was greater than the tabulated value at degree of freedom (2), i.e., 5.99. It was found significant at the 0.05 level of significance. Therefore, the null hypothesis that there is no significant difference between minimum levels of learning in Hindi in primary school students in relation with gender is rejected.

On the basis of the above analysis, it can be concluded that there exists a significant difference between the minimum levels of learning in Hindi among boys and girls at the primary stage. Girls have a higher level of minimum level of learning in Hindi as compared to boys.

MLL in mathematics on the basis of gender

The boys and girls in minimum level of learning in mathematics is depicted in Table 2.

Table 2: MLL of primary school students in mathematics in relation with gender

Gender	Minimum Level of Learning in mathematics (%)			Total
	Mastery	**Partial mastery**	**Non-mastery**	
Boys	21 (8.6)	38 (15.5)	186 (75.9)	245 (100.0)
Girls	32 (11.5)	42 (15.1)	204 (73.4)	278 (100.0)
Total	53 (10.1)	80 (15.3)	390 (74.6)	523 (100.0)

$\chi^2 = 1.23$,   d. f.=2,   P<0.05 (two-tailed)

The data given in Table 2 reflect that most primary school students, irrespective of gender, i. e., 74.6 per cent have non-mastery on the minimum level of learning in mathematics. It is also noticed that around 15 per cent students from both the gender have partial mastery over the minimum level of learning in mathematics. Around 11.5 per cent girls and 8.6 per cent boys have mastery over the minimum level of learning in mathematics. Mostly, boys do not have mastery over the minimum level of learning in mathematics, i.e., 75.9 per cent as against 73.4 per cent girls.

The calculated value of the Chi-square test was 1.23, which is

lesser than the tabulated value and not found significant at any level. Thus, the null hypothesis that there is no significant difference between the minimum levels of learning in mathematics for primary school students in relation with their gender is not rejected.

The analysis of the data inferred that primary school students (boys and girls) had not noticed any statistical difference. Thus, the students (boys and girls) possessed almost similar levels of minimum level of learning in mathematics.

MLL in environmental studies on the basis of gender

The minimum level of learning in environmental studies (EVS) of primary school students (boys and girls) is presented in Table 3.

Table 3: MLL of primary school students in EVS in relation with their gender

Gender	Minimum Level of Learning in EVS (%)			Total
	Mastery	Partial mastery	Non-mastery	
Boys	20 (8.2)	35 (14.3)	190 (77.6)	245 (100)
Girls	24 (8.6)	33 (11.9)	221 (79.5)	278 (100)
Total	44 (8.4)	68 (13.0)	411 (78.6)	523 (100)

$\chi^2 = 0.68$, d.f.=2, $P<0.05$ (two-tailed)

Table 3 reveals that most students having partial mastery over the minimum level of learning in EVS are boys (14.3 per cent), while girls stand at 11.9 per cent. It is also noticed that 8.2 per cent boys and around 8.6 per cent girls have mastery over the minimum level of learning in EVS. Approximately, 7.6 per cent boys and 79.5 per cent girls have non-mastery over the minimum level of learning in EVS.

The calculated value of Chi-square test stood at 0.68, which was found less than the tabulated value and not found significant at any level. Thus, the null hypothesis that there is no significant difference between the minimum levels of learning in EVS in primary school students in relation with their gender is not rejected.

The data show that there exists an absence of significant difference between the minimum level of learning in EVS among boys and girls. Thus, primary school students (both boys and girls) possess almost similar level of MLL in EVS.

CONCLUSION

The findings of the study reveal that there exists a significant difference between boys and girls as regards to mastery on minimum level of learning competencies in cognitive areas. Girls have higher minimum level of learning in Hindi as compared to boys. This may be considered because females, generally, have better linguistic skills than boys. Moreover, Hindi was found to be the favourite subject of most girls, which made them spend more time studying

it and completing their class and home assignments on time.

An absence of significant difference between minimum level of learning in mathematics and EVS was noticed among boys and girls. Thus, boys and girls possessed almost similar levels of minimum level of learning in mathematics and EVS as they studied the same concepts of the subjects, and had the same curriculum and learning environment at schools.

Overall, only 21, 10 and 8 per cent students had achieved mastery on the minimum level of learning competencies in Hindi, mathematics and EVS, respectively.

On the basis of the findings, it is suggested that teachers, educational institutions and administration take care about the evaluation of students and their feedback. Moreover, a constructive approach must be adopted in teaching at the primary level so as to encourage the students to perform better.

The findings of the study suggest that the government must take care of the students' minimum levels of learning in cognitive areas. It must also ensure to promote quality education by incorporating programmes for continuous professional and character development of teachers, pre–service teacher trainings and imparting appropriate competency-based learning skills to students. A two-way critical evaluation of students' learning and teachers' teaching is essential for quality education.

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