

Effectiveness of Multiple Intelligence Approach on Academic Achievement in English

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INTRODUCTION

Twenty-first century classrooms challenge traditional, teacher-centered curriculum to meet the increasingly diverse needs of students. Classroom dynamics, diverse student needs, educational renewal, and technological advances place demands on teachers. The emergence of learner-centered classroom acts as a model for countering classroom challenges because of its viability for meeting diverse needs. Learner centered classrooms place students at the center of classroom organization and respect their learning needs, strategies, intelligences and styles. In learner-centered classrooms, students can be observed working individually or in pairs and small groups on distinct tasks and projects on their areas of interest.

The premise 'one teaching-learning approach fits all' does not work for a growing number of diverse student populations and has prompted the need of an inclusive setup (Kathy. L, 2003). An essential factor for a learner-centered approach is placing the learning characteristics of all learners under the microscope with specific emphasis on low-performing learners. The focus in a learner-centered approach is on individual learners' experiences, perspectives, backgrounds, talents, interests, capacities, and needs. Learner-centered approach is a foundation to create positive learning contexts to increase the likelihood of more students experiencing success and all students of learning. Teachers provide a variety of instructional methods and techniques for helping learners construct their learning. Differentiated instruction meets the needs of diverse student populations by coupling student needs with a focus on content, process, and learner characteristics. Learner needs and characteristics take precedence over knowledge of facts and skills; the emphasis is on engaging learners in learning for understanding and thinking, to help them build their own conclusions. Multiple intelligence, active learning are the buzz words all over the world among the academicians, but not much is translated into action, at least, in our country.

Children are born with Multiple Intelligences which most of the times are not catered to; in the classrooms this restricts their growth to a nutshell. Prof. H. Gardner believes that our society suffers from three biases, “Westist”, “Testist”, “Bestist”. 'Westist' involves putting certain western cultural values, 'Testist' suggests a bias towards focusing upon those human abilities or approaches that are readily testable, 'Bestist' labels the best and brightest only (Gardner, 1993) It is necessary to recognize and nurture all the varied human intelligences, to have a better chance of dealing appropriately with the teaching – learning problems that we face in the world.

Advantages of MI Approach

1. Through the MI approach teachers can offer different pathways for students to learn rather than just filtering all information and learning through the "scholastic intelligences" thus empowering more students to succeed in school. MI approach is "child-centered" and enables teachers to visualize the students' learning, instruction and assessment. Thus we see MI as a tool to reach more kids, and way to become better educators.
2. MI transforms the role of the teacher. In traditional schools the teachers rely more on textbooks and adopt a lecture method with very few opportunities of activity based learning.
3. Through an MI approach students learn through numerous ways, that enhances their interest, caters to individual differences and thus making learning meaningful.
4. An MI teacher contrasts sharply with a teacher in a traditional classroom, who lectures while standing at the front of the class, writes on the blackboard, asks questions about the assigned reading or handouts and waits while students finish their written work. In contrast to this is the MI classroom, where the teacher continually shifts her method of presentation from linguistic to spatial to musical and so on, often combining intelligences in creative ways.
5. In an MI setup, not only are students more likely to learn and teachers more likely to bring their creativity to the fore, other opportunities are also presented keeping in mind that intelligences are multidimensional and students have the potential to change.

Aim of the study:

1. To study the main effect as well as the interaction effects of the Multiple Intelligence Approach mode to curriculum transaction and the level of achievement of the students in English (Average, Below Average and Above Average) on the achievement of educational objectives among secondary school students, as given by Revised Bloom's Taxonomy

2. To study the main effect as well as the interaction effects of the Multiple Intelligence mode of curriculum transaction in English and gender of secondary school students on the achievement of educational objectives, as given by Revised Bloom's Taxonomy.

Hypotheses:

H₀1. There is no significant main effect as well as interaction effect of the approaches to curriculum transaction (MIA,TA) and the level of achievement in English(LOA) of the participants (Average, Below Average and Above Average) on the achievement of educational objectives of RBT among secondary school students;

H₀2. There is no significant main effect as well as interaction effect of the approaches to curriculum transaction of English(MIA, TA) and gender on the achievement of educational objectives of RBT among secondary school students.

Sample of the Study: In the present study, the researcher made use of **stratified random sampling technique** in order to select the experimental groups for the study. The schools affiliated to the various Boards were listed and two schools affiliated to each of the Boards - SSC, CBSE, CISCE and CIE - were selected at random. From each of the schools selected, two divisions of Standard VI were selected at random. Total 736 students were selected which was the sample for this study. Care was taken to see that the sample characteristics represented the population from which it was drawn: girls and boys, who came from different family and academic backgrounds. For this, the researcher selected the schools from various localities in Mumbai and Navi Mumbai. They belonged to the age group between 11 to 12 years. The subject taught was English and the topic was taught was Adjectives and Adverbs

Tools for Data Collection

The researcher will make use of the following tools to collect data:

Personal Data Sheet; Multiple Intelligence Test; MI/ RBT Grid; Instructional Module; Field notes; Criterion Referenced Post- test.

Inferential Analysis:

- To verify the hypotheses, Two Way ANOVA was used.
- To estimate the magnitude of variance of the means of Traditional Approach and MI Approach to curriculum transaction on gender, type of schools, and levels of achievement in achieving objectives of Revised Bloom's Taxonomy of secondary school students, the researcher used ω^2_{est} .

Verification of the Hypothesis H₀1

The hypotheses reads: There is no significant main effect as well as interaction effect of the approaches to curriculum transaction (MIA,TA) and the level of achievement in English (Average, Below Average and Above Average) on the achievement of educational objectives of RBT among secondary school students.

The statistical technique used to test this hypothesis was two way ANOVA. The table shows the relevant statistics

Main Effect and Interaction Effects of the TA, MIA and the LOA on the Achievement of Objectives of RBT

Sources	Sum of Squares	Df	Mean Square	Table Value of F	LOS*	100 ω^2
SS between MIA and TA	23245.31	1	23245.31	6.676	S** (0.01)	98.29
SS between Levels of Achievement(LOA)	75014.5	2	37507.29	6.676	S** (0.01)	98.93
Interaction	127.49	2	63.74	6.676	S** (0.01)	13.05
Residual Error	4009.02	1466	2.73			
Corrected Total	106140	1471				

*LOS=Level of Significance; S**=Significant

1. The calculated F= 8500.22 (SS between MIA and TA) is significant at 0.01 level and therefore, the null hypothesis regarding the main effect of approaches on the achievement of objectives of RBT is rejected at 0.01 level. Hence, it can be concluded that there is significant main effect of the approaches to curriculum transaction (MIA, TA) on the achievement of objectives of RBT. Further, ω^2 estimate indicates that 98.29% variance of approaches is associated with the achievement of objectives of RBT.

2. The calculated F = 13715.47 (SS between LOA) is significant at 0.01 level and therefore the null hypothesis regarding the main effect on LOA is rejected at 0.01 level. Hence, it can be concluded that there is significant main effect of the LOA on the achievement of objectives of RBT. Further, ω^2 estimate indicates that 98.93% variance of LOA is associated with the achievement of objectives of RBT.

3. The calculated $F = 23.31$ (Interaction) is significant at 0.01 level and therefore, the null hypothesis regarding the interaction effect of approaches and LOA on the achievement of objectives of RBT is rejected at 0.01 level. Further, ω^2 estimate indicates that 13.05% variance of the interaction is associated with the achievement of objectives of RBT.

Conclusion:

There is significant main effect as well as interaction effect of the approaches to curriculum transaction (MIA, TA) and the LOA in English (Average, Below Average and Above Average) on the achievement of educational objectives of RBT among secondary school students at 0.01 level.

Discussion

This implies that the MIA to curriculum transaction interspersed with activities catering to the levels of objectives as given by RBT was favourable for student learning. The activities addressed the multiple intelligences of the participants, which helped them perform tasks as per their preferred learning styles. They seemed to have benefitted from group work which promoted inclusive learning environment. Below Average and Above Average students seemed to have benefitted the most from MIA.

Further t- test was done to find out the significance among the Levels of Achievement in English(Average, Below Average and Above Average)

Table shows the Inferential Statistics for estimating the Significance of Difference between the Means of MIAS of Participants on the basis of their LOA

Inferential Statistics for estimating the Significance of Difference between the Means of MIAS of Participants on the basis of their LOA

S. No.	Comparison of Groups	Mean	SD	t-ratio	LOS	100 ω^2
1.	Below Average	18.42	0.80	105.5	S* (0.01)	96
	Average	26.51	1.10			
2	Below Average	18.42	0.80	54.65	S* (0.01)	87
	Above Average	35.91	5.73			
3	Average	26.51	1.10	91.26	S* (0.01)	92
	Above Average	35.91	5.73			

The calculated $t=105.5$ is more than 2.58. Thus 't' is significant at 0.01 level. Further, ω^2 estimate indicates that 96% variance of the Levels of Achievement among Below Average and Average students.

The calculated $t=91.26$ is more than 2.58. Thus 't' is significant at 0.01 level. Further, ω^2 estimate indicates that 92% variance of the Levels of Achievement among Average and Above Average students.

The calculated $t=54.65$ is more than 2.58. Thus 't' is significant at 0.01 level. Further, ω^2 estimate indicates that 87% variance of the Levels of Achievement among Below Average and Above Average students.

Conclusion: This confirms the findings from the table that the BA and AA participants were the beneficiaries.

Discussion: The students may be at an advantage as the activities catered to a broader range of intellectual ability. Drawing a picture, composing a rap, or listening to stories, interpreting the stories, preparing a collage, designing an alternate plan, debating, critiquing - all these activities catered to diverse learning styles and promoted learning. The activities seemed to provide opportunities for real life and authentic learning experiences that was well suited to the participants' needs, interests and talents. Participants were at no time left unnoticed or isolated. Since the activities were planned as per the levels of objectives given by Revised Bloom's Taxonomy, the quest for evaluating and creating also increased among the participants. The activities emphasized multisensory approach to learning and this might have enhanced the motivation and conceptual clarity of students; group learning also might have contributed to the enhanced understanding of the subject matter and thus seemed to result in higher levels of achievement.

The findings of the present study were in consensus with the studies by Bahaddin (2005), Abdallah.A (2008), Temur, Dogan (2007); Kausar, Gujjar (2008), which have demonstrated the advantage of MIA in achieving the educational objectives.

Verification of the Hypothesis H₀2

The hypotheses reads: *There is no significant main effect as well as interaction effect of the approaches to curriculum transaction in English (MIA,TA) and gender on the achievement of educational objectives of RBT among secondary school participants;*

The statistical technique used to test this hypothesis was two way ANOVA. The table shows the relevant statistics:

Main Effect and Interaction Effects of the TA, MIA and Gender on the Achievement of Objectives of RBT

Sources	Sum of Squares	Df	Mean Square	LOS*	ω^2
SS between approaches	25589.34	1	25589.34	S**(0.01level)	70.14
SS between type of Schools	31.419	1	31.419	NS	
Interaction	3.180	1	3.180	NS	
Residual Error	79116.508	1468	53.894		
Corrected Total	106140.108	1471			

LOS=Level of Significance; S**=Significant; NS: Not Significant

Interpretation:

1. The calculated $F = 474.80$ (SS between approaches) is significant at 0.01 level and therefore, the null hypothesis regarding the main effect of approaches on the achievement of objectives of RBT is rejected at 0.01 level. Hence, it can be concluded that there is significant main effect of the approaches to curriculum transaction (MIA, TA) on the achievement of objectives of RBT. Further, the obtained value of ω^2 estimate indicates that 70.14% variance of the approaches is associated with the achievement of objectives of RBT.
2. The calculated $F = 0.583$ (SS between Gender) is less than 3.86 and therefore, the 'F' is not significant at 0.05 level and the null hypothesis regarding the main effect on type of gender is accepted. There is no significant main effect of Gender on the achievement of educational objectives of RBT.
3. The calculated $F = 0.589$ (**Interaction**) is less than 3.86 and therefore, the 'F' is not significant at 0.05 level and the null hypothesis regarding the interaction effect is accepted. There is no significant interaction effect of the approaches to curriculum transaction (MIA, TA) and Gender on the achievement of educational objectives of RBT.

Conclusion:

1. There is significant main effect of approaches to curriculum transaction in Mathematics on the achievement of educational objectives of RBT among secondary school students.
2. There is no significant main effect of gender on the achievement of educational objectives of RBT among secondary school students.
3. There is no significant interaction effect of approaches to curriculum transaction in Mathematics and gender on the achievement of educational objectives of RBT among secondary school students.

Discussion

The activities seemed to have benefitted both the boys and girls equally. The cognitive activities might have been beneficial to both boys and girls. This might have boosted that the MIA to curriculum transaction that may seem to be beneficial to both boys and girls almost equally.

The study corroborates the findings by Verma (1992) and revealed that the gender did not make a difference on the academic achievement and motivation; Abdallah. A (2008) also confirmed the results that the experimental study on the 9th grade participants' reading comprehension had no gender significance.

The present research seemed to showcase the preference of secondary school students for MIA to curriculum transaction, activity based constructivist approach to learning and for group learning.

Suggestions:

- Learner-centered classrooms to be created for success-oriented students. Teachers should provide extensive opportunities for guided practice, repetition, and review for their students, giving them ample opportunities to practice before they are given tests or other forms of assessment.
- Student learning must be developmentally appropriate and compatible with students' levels of intellectual, physical, social, and emotional development.
- Teaching – learning must address many different learning styles. Teachers must remember that their students learn in different ways. Teachers should also keep in mind that students oftentimes will do their best if learning opportunities are aligned with their particular type of intelligence, e.g., verbal- linguistic, logical-mathematical, visual-spatial, bodily-kinesthetic, musical- rhythmic, interpersonal, intrapersonal, or naturalistic.

- Variety of instructional materials can be used during the teaching- learning process to make learning enjoyable and student centered.
- An awareness of Multiple Intelligences and Multiple Intelligence Approach of curriculum transaction could be given at schools, which would help students identify their dominant intelligence and teachers to plan activities to meet the diverse student community.
- Teachers should provide positive feedback to students performance during the assessment conducted at classroom level.
- Teachers can address the MI and RBT by preparing the MI/RBT grid while their lesson planning which would also be tool and direction to follow the same.

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