Effect Spawned by Youth-led Remedial Class for Learning Recovery

Achievement of Students of Grade V and Grade VIII in Math and English

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FOREWORD

Public education is in crisis owing to a lack of quality education, most notably in terms of pupils' low learning results. Furthermore, the COVID-19 epidemic has disturbed the educational process and made equal access to school for all students more difficult, resulting in significant learning loss versus curriculum-defined learning objectives. The epidemic has created a new sort of exclusion and inequality among children from various social and economic backgrounds, with students from low-income families, marginalized groups, and rural places being excluded from new learning possibilities.

AAIN has initiated youth-led learning recovery programs in its working schools to overcome disruption and learning loss caused by the pandemic. A remedial class has become an important tool for addressing the learning gaps of children who have difficulty learning due to specific conditions. Children are able to continue their education and gain confidence through this widely accepted and effective method.

AAIN organized remedial classes by mobilizing 315 young volunteers in 10 districts, encompassing 58 schools and directly touching 8700 pupils from grades four to eight who had fallen behind in their studies owing to the COVID-19 epidemic. The remedial classes concentrated on the two key disciplines in which the majority of pupils score poorly: mathematics and English.

AAIN has extensively recorded the effort in order to monitor the outcomes and collect perspectives and learning from young volunteers, students, instructors, and parents. Independent experts performed pre- and post-assessment of the pupils for this purpose, so that the learning report could inform the government and other stakeholders on an alternate path for learning recovery. This report is essentially a record of their efforts.

I'd like to appreciate the youth volunteers for their enthusiasm and devotion in leading the remedial lessons. Similarly, I'd like to acknowledge all of the instructors who mentored and supported the young volunteers, as well as the partner organizations from ten districts who provided logistical help during pre- and post-assessment. I'd also like to sincerely thank Dr. Indra Mani Rai, Mr. Janak Singh Negi, and Mr. Toya Ammai for their contributions to volunteer research and capacity building, as well as AAIN team members Mr. Devendra Pratap Singh, Ms. Renu Shrestha, Mr. Rahul Dewan, and all the program officers for the initiative's overall operation and coordination.

Thank you,

SAROJ POKHREL
Head-Programme Policy
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We express our special thanks to the students, head/teachers, representatives of local governments, youth volunteers, and partner organizations of ActionAid International Nepal (AAIN) who directly and indirectly supported by providing information, engaging in delivery of lesson plans, and managing logistics for the operation of remedial classes. We would like to thank the activists and community members who facilitated to collect information for this study. We are very grateful to local political leaders who provided invaluable encouragement for conducting meaningful remedial classes. We appreciate the contribution of those who contributed to language editing and report formatting. Last but not least, we would like to thank representatives of ActionAid International Nepal who coordinated and facilitated in overall process of this project.

Executive Summary

With the expansion of COVID-19 paralyzing the functioning of educational institutions globally for more than two it affected the learning of about nine million students in Nepal. The alternative mode of learning (remote learning/online) adopted as an attempt to combat with the adversities of learning created by the pandemic was less effective due to unavailability and inaccessibility of internet and other facilities of Information and Communication Technologies (ICTs). The students from marginalized and deprived communities were more vulnerable in accessing quality learning. They faced learning loss questioning the campaign of promoting quality education. Realizing this fact, ActionAid International Nepal (AAIN) designed a project of implementing remedial classes in its project areas particularly focusing on the students from Grade IV to Grade VIII. This was an effective way to bridge the learning gap and make children able to continue their education and boost their confidence level. Youth-led remedial classes for learning recovery could be one of the best alternatives to recover the learning losses due to COVID-19.

In so doing, a test of each of Math and English of each Grade V and Grade VIII were developed based on the grid prescribed by the respective curriculums. The tests were administered to 330 Grade V students and 279 Grade VIII students from different districts. The students were selected as sample units using multistage sampling technique. Based on the Pre-Test of the learning performance of the students, the learning gaps were identified. The gaps (the ideas and concepts on which the students demonstrated weaker performance) were clustered in 12 thematic areas in order to develop 12 lesson plans in each of Math and English of Grade V and Grade VIII for one and half hours. The local volunteers were oriented to engage in teaching learning practices using the lesson plans conducting a workshop in each district. The youth volunteers delivered the lessons in the classes. The Post-Test (Post-Assessment) was conducted after 12 weeks using similar tests (slightly modifying the test items but retaining the same difficulty level) to measure the performance of the students. The Post-Test was administered to the same students from the same Grades.

Key Findings

1. The achievements of Grade V students were found to have significantly increased in Mathematics after the intervention of remedial classes but their achievements on English was not increased to the satisfactory level. They are still under achievers in English despite improvement brought by the remedial classes.
2. The achievements of Grade VIII students improved significantly by around 25% in the Post-Test unless otherwise they achieved only 30% or less in the pre-Test.
3. There were no gender differences among Grade V students in achievement improvements as both boys and girls improved almost equally in both Math and English. The progress of both boys and girls in English were not satisfactory (below 30%) though both of they achieved slightly more than 50% in Math.
4. Grade VIII students progressed by the mean difference 5 both in Math and English. The average achievements in the Post-Test of Math stands slightly more than 50% improved from around 30% in the Pre-Test and the achievement of the Post-Test of English stands nearly 50% improved from around 25% of the pre-Test.

5. The scores of the students of both Grade V and Grade VIII distributed normally with improved achievements in both Math and English.
6. The highest positive effect of remedial classes appeared in Palpa and Siraha districts as the average achievements in Post-Test in Grade V Mathematics were 70.25% and 76.67% respectively. However, the lowest average achievements in Grade V Mathematics were in Doti (27.50%) and Bhaktapur (35.00%). The achievements in the Post-Test were lowered in Doti and Bardiya.
7. The achievements in English in the Post-Test of Grade V were improved in most of the districts but the scores were not so much satisfactory. The Post-Test achievements in Doti and Bhaktapur were significantly improved standing at 41.09% and 49.29%. However, the achievements of the students in Sankhuwasabha were lowered by half standing at 25.50%. The achievements in Tehrathum, Bajura, Kathmandu, and Palpa were also not satisfactory (below 30%).
8. There was significant progress in achievements of the students in Grade VIII Math in Doti, Siraha, and Palpa. However, the scores were found to be decreased in Tehrathum (35% to 32%) and Bhaktapur (28% to 27%). The achievements in Grade VIII Mathematics as improved were satisfactory in other districts except Bhaktapur.
9. The eighth graders were found to have improved their performance in English. The students of Tehrathum, Doti, Siraha, Parsa, Bhaktapur, Bardiya, and Palpa improved their scores significantly. Even though, the students of Sankhuwasabha and Kathmandu moderately improved their performance in English. The students from all the districts achieved more than 40% in English in the Post-Test.
10. The achievement of the students in Grade V Math stands around 50% in the post-Test. However, the improvements in English were not satisfactory as all Janajati, Dalit, and Brahman/Chhetri (except Madhesi students) scored less than 30% in the Post Test. Even though, the students from Madhesi groups improved the best followed by Janajati, Dalit, and Brahman/Chhetri.
11. The students from Dalit and Madhesi communities improved their achievements significantly as compared to Brahmin/Chhetri students. Dalit students were able to increase their achievement in mathematics from 22.25% to 57.61% and Madheshi students from 34.00% to 67.04%.
12. The achievement change of Janajati students was the lowest in English than the achievement changes of Brahaman/Chhetri, Dalit, and Madhesi groups. The Madhesi students achieved the best standing at 55.02%. However, the achievement of the Grade VIII students of all caste/ethnic groups increased more than 42 % in the Post-Test unless otherwise they had achievements less than 30%.
13. There were significant changes in the achievements of the students of Grade V in Math in rural and urban areas. However, the achievement in English in both rural and urban areas could not be changed as desired as the students in the Post-Test of English underscored (less than 30%). The improvements in Math were better than in English. The urban students improved better in Mathematics than the students from rural areas. On contrary, the students from rural areas improved better than the students from urban areas in English. Even though the achievements of the students of Grade V from both rural and urban areas were not satisfactory.
14. The significant changes in average scores of Grade VIII students in Math and English. Importantly, the rural students were able to demonstrate better achievements and improvements than the students from urban locations. The rural students were able to score slightly more than 50% both in Math and English but the students from urban areas scored less than 40% in both Math and English.

Key Recommendations

This research may provide an excellent example on how to conduct remedial classes for recovering the learning losses of the students due to pandemic situations. The study gives a way on how to engage volunteers to boost up the students in learning providing meaningful support.

1. It is important to make schools and local governments responsible to conduct remedial classes for learning recovery beyond school hours. The local governments should manage the budget for remedial classes.
2. Local volunteers and teachers can be used to engage in remedial classes. They have to engage in planned teaching-learning activities identifying the gap of competency of the students.
3. The focus should be given to conceptualizing ideas and concepts of major subjects rather than rote memorizations.
4. The achievement on English in Grade V was not improved satisfactorily. Thus, the more attention should be given to improve the achievements on Grade V English.
5. The schools and local governments should be made responsible to manage the learning resources (including the ICT tools and reference materials) for effective remedial classes.
6. The focus is to be given to those students who left behind in learning in the COVID-19 pandemic situations particularly the students from under poverty families and underprivileged groups such as Dalits, highly marginalized groups, and religious minorities.
7. It is crucial to analyze the results of ongoing assessments during the remedial classes and provide feedback to the students, head/teachers, parents, and other actors of education.
8. The parents are to make responsible to help and guide their children in learning at homes and communities.
9. It should be encouraged to manage and use the Information Communication and Technologies (ICTs) such as radio, television, local FM, and social media in learning processes.
10. Assuring integrity in assessment practices is a must. Fair and dignified internal assessment practices support identifying the weaknesses and areas of improvements of the students. The classroom interventions should stem based on such ongoing assessments.
11. It is essential to have a shift in changes from rigid, structured, time-bound, and testing model of examination systems to more flexible performance-based assessments such as take-home assignments, projects, and group works or any other locally grounded task-based assessments.

Section I

Introduction, Purpose, and Methods

1.1 Introduction

As elsewhere in the world, the outbreak and expansion of COVID-19 had hardly hit multiple sectors of society including education. The students in schools, colleges, and universities could not engage in learning due to the lockdown. As of the second week of May 2020, UNESCO (2020) estimated that nearly nine million (8,796,624) students in Nepal were affected due to school/university closures in response to the pandemic. Out of this number, 958, 127 (11%) were in pre-primary, 2,466,570 (28%) were in primary, 3,463,763 (39%) were in secondary, and 404,718 (5%) were in tertiary education. The Government of Nepal developed a contingency plan and initiated lately alternative learning approaches using online platforms under a lack of resources and untrained students and teachers. Because of the compulsory closure of schools and universities for a considerable period, the education system was changed dramatically, with the distinctive rise of e-learning whereby teaching and learning were undertaken remotely and on digital platforms. There was an urgent need for the collective effort of three-tiered governments, stakeholders, civil societies, and communities to combat the learning adversities of students. However, the right to education of students in times of crisis could not be ensured as desired. The students from marginalized and deprived communities were much more vulnerable in accessing learning through alternative mode. There were many challenges around equitable access to e-learning.

Because of COVID-19, educational attainment levels in the developing world were often quite low, and even when students attended school, they often learnt very little. The situation was particularly alarming in some form of intervention, especially in rural parts of Nepal. There were attempts in the developing world to address low learning levels of the students. In several Nepali settings, supplementary teaching as a remedial attempt after or before the classes other than regular school has proven to be effective. The governments, CSOs, and like-minded individuals are trying to respond to the situation from their own perspectives with their available capacities. The level of response to the health crisis has become stronger and the economic recovery has been progressing. However, the need for education recovery has not been acknowledged properly so that the attention on the issue of learning losses and possible recovery actions has merely been discussed in education.

It indicated less accountability towards the children and their rights to quality education, which should be unconditional. There was an urgent need for a learning recovery plan to speed up the learning process of the children who have simply upgraded without learning from the previous grades. Otherwise, it would impact the learning process that might be instrumental to lead to the dropout of the students from the schools. Further, the learning loss would worsen the performance. It was also clearly seen that only teachers could not meet the learning losses of the children in a post-pandemic context.

Realizing the facts, ActionAid International Nepal (AAIN) is a member of the Federation working to achieve social justice, gender equality, human rights, and poverty eradication, conceived to provide remedial classes in its programs areas to support students (of Grade V and Grade VIII) to overcome the learning loss. It was understood the remedial classes were instrumental to address the learning gaps caused by the COVID-19 pandemic to those children who faced the problem in the learning process due to any reason like slow learner characteristics, physical disabilities, and gaps in attendance or learning activities. This was an effective way to bridge the learning gap and make children able to continue their education and boost their confidence level. Youth-led remedial classes for learning recovery could be one of the best alternatives to recover the learning losses due to COVID-19.

1.2 Purpose of the Study

The overall purpose of this study was to assess the changes in the achievement of students of Grade V and Grade VIII after remedial classes particularly in Math and English subjects. In so doing, a project developed a lesson plan and trained youth volunteers to implement the plan. Before the intervention, a Pre-Test (Pre-Assessment) was conducted to assess the learning level of the students. After the intervention of lesson plans, a Post Test (Post Assessment) was conducted to evaluate their progress. In other words, pre-assessment was to set a baseline of remedial class and post-assessment was conducted to examine the change brought by remedial class.

1.3 Methods

The goal of this research was to implement the lesson plans of remedial teaching in Math and English of Grade V and Grade VIII for three months. The remedial support was given for 36 hours. (i.e., 12 days and one session per week for each subject of each Grade) in 61 public schools of program areas of Action Aid Nepal. Remedial support was provided to nearly 8700 students. For this purpose, 315 local youth volunteers were mobilized with responsibility to implement the remedial package. In this context, a design of Pre-Test and Post-Test of learning performance of the students is presented below.

1.3.1 Developing the Tests

A test of each of Math and English of each Grade V and Grade VIII were developed based on the grid prescribed by the respective curriculums. The ideas from the literature were taken into consideration while developing tests particularly the assessments done by Education Review Office (ERO) Nepal. The tests were prepared by the experts and reviewed by other experts. Further, the tests were revised based on the feedback and comments of the reviewers. The focus was given to the appropriateness of the items, language, coherence, timing, and content coverage and so on.

1.3.2 Population, Sample, and Sampling Technique

As per the record of ActionAid International Nepal (AAIN), it was estimated that there were 1500 students in each of Grade V and Grade VIII in its program areas. However, it was supposed to benefit 8700 students from 61 public schools from Grade IV to VIII by the project intervention (remedial classes). Even though, the population for each of Grade V and Grade VIII was supposed to be 1500 students. The sample size was calculated by Yamane's statistical formula as follows.

$$n = \frac{N}{1 + N\,(e)^2}$$

Where n = sample size

N = Population size = 1500

e = Level of precision or sampling error = ∓5%

Thus, sample size (n) = $\frac{1500}{1 + 1500\,(0.05)^2} = \frac{1500}{4.75}$ = 315.79 ~ 316 from each Grade V and Grade VIII

The sample size of each Grade would statistically be 316 on which the test was to be administered. However, n = 330 were randomly selected from Grade V and n = 279 were randomly selected from Grade VIII. Multi-stage sampling technique was used to select the sample units. In so doing, the districts, schools, and students were selected randomly. The girls, boys, Dalits, Janajatis, religious minorities, and high caste groups were selected proportionately in order to ensure the representation of students from diverse groups.

1.3.3 Pre-Test (Pre-Assessment)

The tests were administered to the students of each grade of each subject who were selected as sample units gathering them in a school of appropriate locations. The performance of the students was assessed based on the results of statistical analysis of the scores.

1.3.4 Intervention with lesson plan

Based on the Pre-Test of the learning performance of the students, the learning gaps were identified. The gaps (the ideas and concepts on which the students demonstrated weaker performance) were clustered in 12 thematic areas in order to develop 12 lesson plans in each of Math and English of Grade V and Grade VIII for one and half hours. The local volunteers were oriented to engage in teaching learning practices using the lesson plans conducting a workshop in each district. The youth volunteers delivered the lessons in the classes.

1.3.5 Post-Test (Post-Assessment)

The Post-Test (Post-Assessment) was conducted after 12 weeks using similar tests (slightly modifying the test items but retaining the same difficulty level) to measure the performance of the students. The Post-Test was administered to the same students from the same Grades. The performance of the Pre-Test and Post-Test were compared to figure out the changes brought by the intervention of planned teaching-learning activities.

1.3.6 Approaches of Data Analysis and Interpretation

The researchers used the SPSS software for analyzing test scores. In so doing, first, the collected quantitative data was cleaned, coded, and prepared for the entry in SPSS program. The results of Pre-Test and Post-Test were compared to analyze the effectiveness of the program. Thus, descriptive statistics were useful to identify and explain the effectiveness of the remedial classes.

Section II

Results/Achievement Analysis

This section presents the results/achievements of the students of Grade V and Grade VIII selected for Pre-Test and Post-Test. The focus of analysis stems on how the changes on achievement in Math and English subjects appear after the intervention of remedial classes by the volunteer youths trained by the workshops conducted by Action Aid Nepal. The first section presents the demographic features of student respondents, and the second section deals with the effect generated by the remedial class. The focus of analysis lies on differences of the effect in relation to gender, caste/ethnicity, and geographical locations (districts and rural/urban contexts).

2.1 Demographic Glimpse of Student Respondents

The research focused on capturing the demographic feature student respondents. In so doing, caste/ethnicity, religion, gender, and locations of student respondents are presented below. This is because the Education Review Office (ERO) Nepal and other actors of education have shown these aspects are instrumental to low achievements and determinants of quality of education. These are also the equity barriers in access, participation, and learning outcomes in context Nepal.

Table 1 Student Respondents by Caste/Ethnicity

Caste/Ethnicity	Grade	Grade VIII
Bramin	21 (6.4)	18 (6.5)
Chhetri	63 (19.1)	18 (6.5)
Dalit	64 (19.4)	20 (7.2)
Janajati	64 (19.4)	74 (26.5)
Madheshi	113 (33.9)	147 (52.7)
Missing	5 (1.5)	2 (0.7)
Total	N=330 (100.0)	N=279 (100.0)

(Source: Pre-Test and Post Test)
(Figures in parentheses represent percentage)

Table 1 reveals that there were one third (33.9%) of the Grade V student respondents from Madhesi communities and this was followed by the Chhetri, Dalit, and Janajati each of which occupied 19%. There were least number of student respondents from Brahman communities. Similarly, there were a majority of student respondents (52.7%) from Madhesi communities in Grade VIII which was followed by about one fourth (26.5%) of Janajatis. There were fewer number of student respondents from Chhetri and Brahman communities in Grade VIII. The focus of selecting student respondents were given to marginalized and deprived communities as the achievements of the students from those communities were the lowest as reported by Education Review Office (ERO) Nepal. The following table demonstrates the religious features of respondents.

Table 2 Student Respondents by Religion

Religion	Grade V	Grade VIII
Baudha	10 (3.0)	10 (3.6)
Hindu	272 (82.4)	250 (89.6)
Christian	3 (0.9)	1 (0.4)
Islam	23 (7.0)	9 (3.3)
Kirat	1 (0.3)	1 (0.4)
Missing	21 (6.4)	8 (2.9)
Total	N=330 (100.0)	N=279 (100.0)

(Source: Pre-Test and Post Test)
(Figures in parentheses represent percentage)

Table 2 shows that there were overwhelming majority of student respondents (82.4% in Grade V and 89.6% in Grade VIII) from the Hindu religious group which was followed by Islam (7.0% in Grade V and 3.3% in Grade VIII). The student respondents from Budhdha religion, Christian, and Kirat were very few. The following table gives a picture of gender composition of student respondents in the study.

Table 3 Student Respondents by Gender

Gender	Grade V	Grade VIII
Girls	179 (54.2)	153 (54.8)
Boys	146 (44.2)	123 (44.1)
Missing	5 (1.5)	3 (1.1)
Total	N=330 (100.0)	N=279 (100.0)

(Source: Pre-Test and Post Test)
(Figures in parentheses represent percentage)

The table above shows that there were majority of girls from both Grade V (54.2%) and Grade VIII (54.8%) as the respondents. However, there were equal percentage of Grade V and Grade VIII students were participated in Pre-Test and Post-Test.

Table 4 Student Respondents by Location

Location	Grade V	Grade VIII
Rural	280 (84.8)	234 (83.9)
Urban	44 (13.3)	41 (14.7)
Missing	6 (1.8)	4 (1.4)
Total	330 (100.0)	279 (100.0)

(Source: Pre-Test and Post Test)
(Figures in parentheses represent percentage)

Table 4 shows that most of the students from Grade V and Grade VIII were from rural areas. There were almost equal number Grade V and Grade VIII students who participated in Pre-Test and Post-Test.

2.2 Effect Generated by the Remedial Classes

The remedial classes were designed for the purpose of closing the gap between what the students knew and what they were expected to be competent in. The classes were conducted as the students were facing learning challenges due to the COVID-19 pandemic. The focus was given to Math and English subjects. It was expected to help students who are having problems with advanced concepts to fully understand the basics of the subjects. Students were expected to catch up on material after a long break from education. Remedial classes could be a positive environment for students suffering from low self-esteem, as they could be encouraged to ask as many questions as necessary to understand a subject, rather than feeling pressured to learn everything immediately. The following table shows the effectiveness of remedial classes.

Table 5 Mean/Average Scores in Pre and Post Tests in Overall

		Pre-Test (FM: 20)	Post-Test (FM: 20)	Change
		Mean	Mean	
Grade V (N=330)	**Math**	8.00 (40.00 %)	10.97 (54.85%)	**2.97 (14.85%)**
	English	3.95 (19.75%)	5.97 (29.85%)	**2.02 (10.10%)**
Grade VIII (N=279)	**Math**	6.28 (31.40%)	10.94 (54.70%)	**4.66 (23.30%)**
	English	4.85 (24.25 %)	9.96 (49.80%)	**5.11 (25.55%)**

(Source: Pre-Test and Post Test)
(Figures in parentheses represent percentage)

Table 5 shows the achievement change brought about by the intervention of remedial classes in Math and English for Grades V and Grade VIII. The change in mean achievement score in both subjects and both grades were significant ranging from 10% to 25.55%. However, the achievement in Grade V English was not satisfactory even after remedial classes. The level of achievement in other subjects reached slightly more than 50%.

Table 6 Mean Achievement Change in Grade V by Gender

	Math		Change	English		Change
	Pre-Test (FM: 20)	Post-Test (FM: 20)		Pre-Test (FM: 20)	Post-Test (FM: 20)	
Boys	7.38 (36.39)	10.62 (53.10)	**3.24**	3.96 (19.80)	5.51 (27.60)	**1.55**
Girls	8.50 (42.51)	10.94 (54.69)	**2.44**	3.93 (19.64)	5.78 (28.88)	**1.85**

(Source: Pre-Test and Post Test)
(Figures in parentheses represent percentage)

Table 6 reveals that the sample boys and girls achieved almost equal after the intervention of remedial classes in Grade V Math and English. The level of achievements in English in Grade V were improved but which were less than average scores (less than 30%). Both boys and girls were still poorer in English. This shows the further intervention of remedial classes in English.

Table 7 Mean Achievement Change in Grade VIII by Gender

	Math		Change	English		Change
	Pre-Test (FM: 20)	Post-Test (FM: 20)		Pre-Test (FM: 20)	Post-Test (FM: 20)	
Boys	6.04 (30.22)	10.78 (53.92)	**4.74**	4.73 (23.63)	9.75 (48.73)	**5.02**
Girls	6.07 (30.33)	11.08 (55.39)	**5.01**	4.95 (24.77)	10.17 (50.83)	**5.22**

(Source: Pre-Test and Post Test)
(Figures in parentheses represent percentage)

Table 7 depicts the average scores achieved in Pre-Test and Post Test. Both boys and girls improved their scores significantly in the both the subjects as the change in average marks stand at around 5. They showed satisfactory achievements after the remedial classes. The following table shows the Average, Mid-Value, Mode, Standard Deviation, and Range of the scores.

Table 8 Achievement Change in Grade V

	Math		Change	English		Change
	Pre-Test (FM: 20)	Post-Test (FM: 20)		Pre-Test (FM: 20)	Post-Test (FM: 20)	
Mean	7.00	10.79	**3.79**	3.94	5.65	**1.71**
Median	7.00	10.00	**3.00**	3.50	5.00	**1.50**
Mode	7.00	10.00	**3.00**	2.50	0.00	**-2.5**
SD	4.58	4.76	**0.18**	2.60	3.34	**0.74**
Range	20.0	20.00	**0.00**	13.5	14.5	**1.00**

(Source: Pre-Test and Post Test)
(Figures in parentheses represent percentage)

The Mean, Median, and Mode of the scores of the Pre-Test and Post-Test in Grade V Math were found equal standing at 7 and 10. This indicates the scores of the students distributed normally. The SD was almost equal in the Pre-Test and Post-Test. The Range value in the Pre-Test and Post-Test of Grade V Math shows the scores varied from 0 to 20. The achievements of Grade V students in English seem to have improved to some extent but bot at the satisfactory level. The effects of remedial classes in English could not be generated as that of achievements in Math.

Table 9 Achievement Change in Grade VIII

	Math		Change	English		Change
	Pre-Test (FM: 20)	Post-Test (FM: 20)		Pre-Test (FM: 20)	Post-Test (FM: 20)	
Mean	6.06	10.94	**4.88**	4.85	9.96	**5.11**
Median	5.00	11.00	**6.00**	4.50	10.00	**5.50**
Mode	3.00	16.00	**13.00**	5.00	11.50	**6.50**
SD	3.86	4.98	**1.12**	2.53	3.16	**0.63**
Range	19.00	20.00	**1.00**	12.50	16.50	**4.00**

(Source: Pre-Test and Post Test)
(Figures in parentheses represent percentage)

Table 9 shows the overall results of the achievements of the Grade VIII students. The change in the mean score of Math and English stand around 5. The change in the mid value of the series of the scores of Math and English stand at 6 and 5.50. The change in mode values with big differences and smaller SD values indicate that the most students improved better in the Post Test achievements. The performance changes were higher in Mathematics than in English. The following table shows the achievement change by districts.

Table 10 Mean Achievement Change in Grade V by Districts

	Math		Change	English		Change
	Pre-Test (FM: 20)	Post-Test (FM: 20)		Pre-Test (FM: 20)	Post-Test (FM: 20)	
Tehrathum	7.14 (35.68)	8.06 (40.28)	**0.92**	3.74 (18.72)	5.15 (25. 76)	**1.41**
Sankhuwasabha	8.17 (40.83)	8. 80 (44.00)	**0.65**	10.67 (53.33)	5.10 (25.50)	**-5.57**
Doti	6.00 (30.00)	5.50 (27.50)	**-0.50**	2.03 (10.16)	8.22 (41.09)	**6.19**
Bajura	8.13 (40.66)	8.44 (42.21)	**0.31**	3.95 (19.74)	4.21 (21.07)	**0.26**
Siraha	9.63 (48.15)	15.33 (76.67)	**5.70**	4.52 (22.61)	6.89 (34.43)	**2.37**
Parsa	9.51 (47.56)	12.70 (63.47)	**3.19**	2.46 (12.31)	6.41 (32.03)	**3.95**
Bhaktapur	5.00 (25.00)	7.00 (35.00)	**2.00**	3.64 (18.21)	9.86 (49.29)	**6.22**
Kathmandu	5.61 (28.04)	10.64 (53.20)	**5.03**	4.75 (23.75)	6.00 (30.00)	**1.25**
Bardiya	12.24 (61.18)	10.44 (52.22)	**-1.80**	3.50 (17. 50)	6.56 (32.78)	**3.06**
Palpa	7. 23 (36.14)	14.05 (70.25)	**6.62**	4.39 (21.93)	0.76 (3.88)	**-3.63**

(Source: Pre-Test and Post Test)
(Figures in parentheses represent percentage)

Table 10 shows that the highest positive effect of remedial classes appeared in Palpa and Siraha districts as the average achievements in Post Test in Grade V Mathematics were 70.25% and 76.67% respectively. However, the lowest average achievements in Grade V Mathematics were in Doti (27.50%) and Bhaktapur (35.00%). The achievements in the Post Test were lowered in Doti and Bardiya. Even though, the Grade V students in Bardiya were able to maintain average achievement score 52.22%.

The achievements in English in the Post Test of Grade V were improved in most of the districts but the scores were not so much satisfactory. The Post Test achievements in Doti and Bhaktapur were significantly improved standing at 41.09% and 49.29%. However, the achievements of the students in English in the Post Test lowered by half in Sankhuwasabha standing at 25.50%. The achievements in Tehrathum, Bajura, Kathmandu, and Palpa were also not satisfactory (below 30%). Table 11 shows the achievements of Grade VIII in different districts.

Table 11 Mean Achievement Change in Grade VIII by Districts

	Math		Change	English		Change
	Pre-Test (FM: 20)	Post-Test (FM: 20)		Pre-Test (FM: 20)	Post-Test (FM: 20)	
Tehrathum	6.88 (34.38)	6.43 (32.14)	**-0.45**	4.56 (22.81)	10.35 (51.79)	**5.79**
Sankhuwasabha	6.92 (34.62)	10.83 (54.17)	**3.91**	7.46 (37.31)	11.33 (56.67)	**3.87**
Doti	4.00 (20.00)	14.6 (73.00)	**10.60**	4.15 (20.75)	13.00 (65.00)	**8.85**
Bajura	-	-	**-**	-	-	**-**
Siraha	6.52 (32.61)	14.13 (70.66)	**7.61**	5.70 (28.48)	11.71 (58.57)	**6.01**
Parsa	7.16 (35.82)	12.33 (61.66)	**5.17**	3.95 (19.74)	9.94 (49.69)	**5.99**
Bhaktapur	5.56 (27.78)	5.5 (27. 4)	**-0.06**	5.11 (25.56)	11.19 (55.94)	**6.08**
Kathmandu	4.31 (21.52)	7.36 (36.81)	**3.05**	4.47 (22.35)	7.91 (39.53)	**3.44**
Bardiya	-	7.17 (35.83)	**7.17**	-	8.15 (40.73)	**8.15**
Palpa	6.22 (31.11)	12.63 (63.13)	**6.41**	5.17 (25.83)	10.67 (53.33)	**5.50**

(Source: Pre-Test and Post Test)
(Figures in parentheses represent percentage)

Table 11 reveals that there was significant progress in achievements of the students in Grade VIII Mathematics in Doti (from 20% to 73%), Siraha (33% to 71%), and Palpa (31% to 63%). However, the scores were found to be decreased in Tehrathum (35% to 32%) and Bhaktapur (28% to 27%). The achievements in Grade VIII Mathematics as improved were satisfactory in other districts except Bhaktapur.

As compared to the achievements of Grade V in English (as analyzed in the earlier table), the eighth graders were found to have improved their performance in English. As shown in the above table, the students of Tehrathum, Doti, Siraha, Parsa, Bhaktapur, Bardiya, and Palpa improved their scores significantly. Even though, the students of Sankhuwasabha and Kathmandu moderately improved their performance in English. The students from all the districts achieved more than 40% in English in the Post Test. The following table shows the performance of the students of Grade V by caste and ethnicity.

Table 12 Mean Achievement Change in Grade V by Caste/Ethnicity

	Math		Change	English		Change
	Pre-Test (FM: 20)	Post-Test (FM: 20)		Pre-Test (FM: 20)	Post-Test (FM: 20)	
Brahman/Chhetri	7.74 (38.69)	9.35 (46.75)	**1.61**	4.21 (21.07)	4.66 (23.28)	**0.45**
Dalit	7. 47 (37.34)	10.05 (50.25)	**2.52**	3.88 (19.41)	5.82 (29.11)	**1.94**
Janajati	6.98 (34.92)	10.15 (50.76)	**3.17**	4.15 (20.74)	5.41 (27.06)	**1.26**
Madhesi	9.04 (45.22)	13.17 (65.90)	**4.13**	3.65 (18.27)	6.54 (32.70)	**2.89**

(Source: Pre-Test and Post Test)
(Figures in parentheses represent percentage)

Table 12 shows that the remedial classes brought significant changes in the achievement of the students in Grade V Math standing around 50% of mean score. However, the improvements in English were not satisfactory as all Janajati, Dalit, and Brahman/Chhetri (except Madhesi students) scored less than 30% in the Post Test. Even though, the students from Madhesi groups improved the best followed by Janajati, Dalit, and Brahman/Chhetri. The following table presents the mean achievement change in Grade VIII students in Math and English.

Table 13 Achievement Change in Grade VIII by Caste/Ethnicity

	Math		Change	English		Change
	Pre-Test (FM: 20)	Post-Test (FM: 20)		Pre-Test (FM: 20)	Post-Test (FM: 20)	
Brahman/Chhetri	5.89 (29.44)	9.72 (48.64)	**3.83**	5.28 (26.39)	10.55 (52.73)	**5.27**
Dalit	4.45 (22.25)	11.52 (57.61)	**7.07**	4.65 (23.25)	10.17 (50.87)	**5.52**
Janajati	5.09 (25.47)	8.34 (41.70)	**3.25**	4.92 (24.59)	8.47 (42.33)	**3.55**
Madhesi	6.80 (34.00)	13.41 (67.04)	**6.61**	4.74 (23.71)	11.00 (55.02)	**6.26**

(Source: Pre-Test and Post Test)
(Figures in parentheses represent percentage)

The table shows that the students from Dalit and Madhesi communities improved their achievements significantly. They were able to change their achievements from 22.25% to 57.61% and 34.00% to 67.04%. In Math, the achievement changes of the students from Brahmin/Chhetri and Janajati were less than the achievements of students from Dalit and Madhesi communities.

The achievement change of Janajati students was the lowest in English than the achievement changes of Brahaman/Chhetri, Dalit, and Madhesi groups. The Madhesi students achieved the best standing at 55.02%. However, the achievement of the Grade VIII students of all caste/ethnic groups increased more than 42 percent in the Post-Test unless otherwise they had achievements less than 30%.

Table 14 Mean Achievement Change in Grade V by Locations

	Math		Change	English		Change
	Pre-Test (FM: 20)	Post-Test (FM: 20)		Pre-Test (FM: 20)	Post-Test (FM: 20)	
Rural	8.58 (42.89)	10.92 (54.60)	**2.34**	3.77 (18.87)	5.72 (28.62)	**1.95**
Urban	4.43 (22.17)	9.58 (47.90)	**5.15**	4.96 (24.78)	4.98 (24.90)	**0.02**

(Source: Pre-Test and Post Test)
(Figures in parentheses represent percentage)

Table 14 shows that there were significant changes in achievements of the students of Grade V in Math in rural and urban areas. However, the achievement in English in both rural and urban areas could not be changed as desired as the students in the Post Test of English underscored (less than 30%). The improvements in Math were better than in English. The urban students improved better in Mathematics than the students from rural areas. On contrary, the students from rural areas improved better than the students from urban areas in English. Even though the achievements of the students from both rural and urban areas were not satisfactory. The following table shows the mean achievement change in Grade VIII Math and English by rural and urban locations.

Table 15 Mean Achievement Change in Grade VIII by Locations

	Math		Change	English		Change
	Pre-Test (FM: 20)	Post-Test (FM: 20)		Pre-Test (FM: 20)	Post-Test (FM: 20)	
Rural	6.40 (31.98)	11.48 (57.41)	**5.08**	4.84 (24.20)	10.30 (51.51)	**5.46**
Urban	4.21 (21.05)	7.39 (36.97)	**3.18**	4.92 (24.59)	7.76 (38.79)	**2.84**

(Source: Pre-Test and Post Test)
(Figures in parentheses represent percentage)

Table 15 reveals the significant changes in mean scores of Grade VIII students in Math and English. Importantly, the rural students were able to demonstrate better achievements and improvements than the students from urban locations. The rural students were able to score slightly more than 50% both in Math and English but the students from urban areas scored less than 40% in both Math and English.

Section III

Key Findings and Recommendations

This section presents the major findings based on the statistical analysis done in the earlier section. Further, the key recommendations are provided to the concerned educational actors who engage in improving quality education at the local, regional, and national levels.

3.1 Key Findings

1. The achievements of Grade V students were found to have significantly increased in Mathematics after the intervention of remedial classes but their achievements on English was not increased to the satisfactory level. They are still under achievers in English despite improvement brought by the remedial classes.

2. The achievements of Grade VIII students improved significantly by around 25% in the Post-Test unless otherwise they achieved only 30% or less in the pre-Test.

3. There were no gender differences among Grade V students in achievement improvements as both boys and girls improved almost equally in both Math and English. The progress of both boys and girls in English were not satisfactory (below 30%) though both of they achieved slightly more than 50% in Math.

4. Grade VIII students progressed by the mean difference 5 both in Math and English. The mean achievements in the Post-Test of Math stands slightly more than 50% improved from around 30% in the Pre-Test and the achievement of the Post-Test of English stands nearly 50% improved from around 25% of the pre-Test.

5. The scores of the students of both Grade V and Grade VIII distributed normally with improved achievements in both Math and English.

6. The highest positive effect of remedial classes appeared in Palpa and Siraha districts as the average achievements in Post Test in Grade V Mathematics were 70.25% and 76.67% respectively. However, the lowest average achievements in Grade V Mathematics were in Doti (27.50%) and Bhaktapur (35.00%). The achievements in the Post Test were lowered in Doti and Bardiya.

7. The achievements in English in the Post Test of Grade V were improved in most of the districts but the scores were not so much satisfactory. The Post Test achievements in Doti and Bhaktapur were significantly improved standing at 41.09% and 49.29%. However, the achievements of the students in Sankhuwasabha were lowered by half standing at 25.50%. The achievements in Tehrathum, Bajura, Kathmandu, and Palpa were also not satisfactory (below 30%).

8. There was significant progress in achievements of the students in Grade VIII Math in Doti, Siraha, and Palpa. However, the scores were found to be decreased in Tehrathum (35% to 32%) and Bhaktapur (28% to 27%). The achievements in Grade VIII Mathematics as improved were satisfactory in other districts except Bhaktapur.

9. The eighth graders were found to have improved their performance in English. The students of Tehrathum, Doti, Siraha, Parsa, Bhaktapur, Bardiya, and Palpa improved their scores significantly. Even though, the students of Sankhuwasabha and Kathmandu moderately improved their performance in English. The students from all the districts achieved more than 40% in English in the Post Test.

10. The achievement of the students in Grade V Math stands around 50% in the post-Test. However, the improvements in English were not satisfactory as all Janajati, Dalit, and Brahman/Chhetri (except Madhesi students) scored less than 30% in the Post Test. Even though, the students from Madhesi groups improved the best followed by Janajati, Dalit, and Brahman/Chhetri.

11. The students from Dalit and Madhesi communities improved their achievements significantly. They were able to change their achievements from 22.25% to 57.61% and 34.00% to 67.04%. In Math, the achievement changes of the students from Brahmin/Chhetri and Janajati were less than the achievements of students from Dalit and Madhesi communities.

12. The achievement change of Janajati students was the lowest in English than the achievement changes of Brahaman/Chhetri, Dalit, and Madhesi groups. The Madhesi students achieved the best standing at 55.02%. However, the achievement of the Grade VIII students of all caste/ethnic groups increased more than 42 percent in the Post-Test unless otherwise they had achievements less than 30%.

13. There were significant changes in the achievements of the students of Grade V in Math in rural and urban areas. However, the achievement in English in both rural and urban areas could not be changed as desired as the students in the Post Test of English underscored (less than 30%). The improvements in Math were better than in English. The urban students improved better in Mathematics than the students from rural areas. On contrary, the students from rural areas improved better than the students from urban areas in English. Even though the achievements of the students of Grade V from both rural and urban areas were not satisfactory.

14. The significant changes in mean scores of Grade VIII students in Math and English. Importantly, the rural students were able to demonstrate better achievements and improvements than the students from urban locations. The rural students were able to score slightly more than 50% both in Math and English but the students from urban areas scored less than 40% in both Math and English.

3.2 Recommendations

This research may provide an excellent example on how to conduct remedial classes for recovering the learning losses of the students due to pandemic situations. The study gives a way on how to engage volunteers to boost up the students in learning providing meaningful support.

1. It is important to make schools and local governments responsible to conduct remedial classes for learning recovery beyond school hours. The local governments should manage the budget for remedial classes.
2. Local volunteers and teachers can be used to engage in remedial classes. They have to engage in planned teaching-learning activities identifying the gap of competency of the students.
3. The focus should be given to conceptualizing ideas and concepts of major subjects rather than rote memorizations.
4. The achievement on English in Grade V was not improved satisfactorily. Thus, the more attention should be given to improve the achievements on Grade V English.
5. The schools and local governments should be made responsible to manage the learning resources (including the ICT tools and reference materials) for effective remedial classes.
6. The focus is to be given to those students who left behind in learning in the COVID-19 pandemic situations particularly the students from under poverty families and underprivileged groups such as Dalits, highly marginalized groups, and religious minorities.
7. It is crucial to analyze the results of ongoing assessments during the remedial classes and provide feedback to the students, head/teachers, parents, and other actors of education.
8. The parents are to make responsible to help and guide their children in learning at homes and communities.
9. It should be encouraged to manage and use the Information Communication and Technologies (ICTs) such as radio, television, local FM, and social media in learning processes.
10. Assuring integrity in assessment practices are a must. Fair and dignified internal assessment practices support identifying the weaknesses and areas of improvement of the students. The classroom interventions should stem based on such ongoing assessments.
11. It is essential to have a shift in changes from rigid, structured, time-bound, and testing model of examination systems to more flexible performance-based assessments such as take-home assignments, projects, and group works or any other locally grounded task-based assessments.

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