IMPACT EVALUATION OF THE KLC SCHOOL/ COMMUNITY-BASED PROJECT: DO IT YOURSELF (DIY)

EVALUATION REPORT

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EXECUTIVE SUMMARY

Introduction

KLC is implementing the 'Do It Yourself' (DIY) project which aims to provide a more holistic approach to developing successful learners through promoting meaningful youth participation as a core of improving the quality of education and learning outcomes. The intervention aims to: (i) empower young people through the process of meaningful youth engagement; (ii) improve the social and economic situations of youth through DIY club activities (e.g., entrepreneurship trainings, leadership opportunities, etc.), and; and (iii) improve the communities in which DIY club members live through service projects (e.g., sexual and reproductive health community events). The intervention was implemented in 8 treatment schools with 4 other schools used as the control.

- **G1 –** DIY exposure in school (treatment schools)
- **G2 –** No DIY exposure (control schools)

Objectives

The overall aim of the evaluation was to establish whether the DIY programme improves youth life skills, youth agency, participation and school environment. Specifically, the endline evaluation was conducted to: (i) investigate youth levels of life skills, agency, participation and school environment; and (ii) ascertain the level of improvement in the youth life skills, agency, participation and school environment as a result of the DIY intervention.

Methods

A quasi-experimental design, where measurements was done in the target schools both before and after exposure to the intervention, was adopted to assess the effectiveness of the DIY intervention. A total of 326 students (treatment=159, control=167) participated in both the baseline and endline surveys. A structured survey questionnaire was developed, validated and administered at both baseline and endline. The tool comprised 39 self-reported items under six constructs: Agency, Self-determination, Positive identity, School climate, Social and Communication skills, and Student participation. At endline, three items on gender and seven items on Covid-19 resilience were included in the tool. Each item was responded to by the students based on a 4-point Likert type scale whereby: *1=Strongly Disagree, 2=Disagree, 3=Agree, and 4=Strongly Agree*.

The baseline and endline data collection were conducted in the month of March, 2019 and September, 2022, respectively. Data analysis was performed in terms of percentages and means. In order to investigate the causal effects of the DIY intervention on the treatment schools over the control schools, Difference in Differences (DID) analysis was conducted, with and without baseline covariates.

Summary of findings

The summary findings below are presented based on the study constructs:

a) *Agency*: The intervention revealed significant (at 5%) improvements in the students' agency in the treatment than control schools, in terms of the average score on the construct (DID Estimate=0.21).
b) *Self-determination*: The intervention revealed small improvements in the students' self-determination in the treatment than control schools, in terms of the average score on the construct (DID Estimate =0.10).
c) *Positive identity*: The intervention revealed small improvements in the students' positive identity in the treatment than control schools, in terms of the average score on the construct (DID Estimate =0.06).
d) *Social and communication skills*: The intervention revealed small improvements in the students' social and communication skills in the treatment than control schools, in terms of the average score on the construct (DID Estimate =0.08).
e) *Students' participation*: The intervention revealed significant (at 5%) improvements in the students' participation in the treatment than control schools, in terms of the average score on the construct (DID Estimate =0.12).
f) *School climate*: The intervention revealed small improvements in the school climate in the treatment than control schools, in terms of the average score on the construct (DID Estimate =0.04).
g) *Gender perceptions*: Students in the treatment schools exhibited significantly (at 5% level) higher gender perception scores than those from the control schools (Average Treatment Effect=0.165)
h) *Covid-19 resilience*: Students in the treatment schools exhibited significantly (at 5% level) higher Covid-19 resilience scores than those from the control schools (Average Treatment Effect=0.175).

Key recommendations

Based on the evaluation findings, the following key recommendations are made:

a) There is need for a more intensive focus and effort towards sufficiently large improvements of the students' life skills especially on the constructs where improvements have not been significant.
b) Continued mentorship and support. This would allow youth who are still challenged in effectively developing and consequently applying the knowledge and skills. Platforms that can enable these youth to share with one another even beyond the usual school days could be explored.
c) Development of sustainability strategies that are based on the identification of possible threats to the students' retention and continuous application of the skills and knowledge achieved through the DIY club intervention.
d) There is a need to investigate other factors that could have affected the intervention's achievements. These may include but not limited to the influence of the school environment, role of the teachers, school leaders, and non-DIY club students towards the application of the knowledge and skills attained.

CHAPTER ONE: INTRODUCTION

1.1. About KOMO Learning Centres

KOMO Learning Centres (KLC) was established in 2009 as a non-profit organization with the goal of providing quality education to vulnerable children in Uganda. Since then, it has moved steadily towards implementing a holistic model of sustainable development for rural communities with an emphasis on youth leadership and livelihoods development. KLC is currently engaged in a number of projects directly impacting over 20,000 people in Uganda each year. One of them, which was a focus of this evaluation, is the Do It Yourself (DIY) clubs.

1.2. Background to the Evaluation

The DIY project provides a more holistic approach to developing successful learners through promoting meaningful youth participation as a core of improving the quality of education and learning outcomes. DIY promotes youth voice and decision-making while treating youth as partners rather than project "beneficiaries." DIY equips members with a holistic set of foundational trainings that include life skills, health education, facilitation, research; and program planning, implementation and evaluation. After participating in these initial capacity-building trainings, the DIY members take the lead to develop projects that address needs in their schools and communities. This is the key component of the program – learning through the participatory process itself. From conducting a needs assessment, to planning and implementation, young people are involved in genuine and meaningful ways.

In order to be successful in improving student learning outcomes through DIY, teachers are as well engaged in their own personal reflections and growth, and address teacher-student interactions. Training topics include self-awareness, financial literacy, etc. As KLC builds stronger relationships with teachers, more sensitive topics, such as non-corporal forms of discipline are handled.

Importantly, while DIY has an intense focus on club members and participating teachers, the program theory posits that program effects will "spill-over" and diffuse throughout the school as DIY participants begin to adopt and model positive attitudes and behaviours. It has also been noted that as teachers and school staff observe these examples of student leadership, their own views on youth capacity and potential begin to expand. Cumulatively, the pathways of change described above are expected to impact life skills acquisition for students and the overall environment in the school, leading to improved learning outcomes and quality education. The goals of the DIY club are:

i) To empower young people through the process of meaningful youth engagement;
ii) To improve the social and economic situations of youth through DIY club activities (e.g., entrepreneurship trainings, leadership opportunities, etc.), and;
iii) To improve the communities in which DIY club members live through service projects (e.g., sexual and reproductive health community events).

It is against this background that KLC thought viable to conduct an evaluation of the DIY project. The evaluation aimed at investigating the impact that has been created by the DIY intervention on the youth life skills. The evaluation was conducted by Luigi Giussani Institute of Higher Education (LGIHE) in collaboration with KLC.

1.3. Objectives of the evaluation

The overall aim of the evaluation is to establish whether the DIY programme improves youth life skills, agency, participation and school environment. Specifically, the endline evaluation was conducted to address the following objectives:

i) To investigate youth levels of life skills, agency, participation and school environment.
ii) To ascertain the level of improvement in the youth life skills, agency, participation and school environment as a result of the DIY intervention.

CHAPTER TWO: METHODOLOGY

2.1. Introduction

This section presents the evaluation design, target population, data collection methods and tools, sample size and sampling strategies, fieldwork process, data quality control, tool development and validation process, data entry and analysis, ethical considerations, and limitations to the study.

2.2. Evaluation Design

The evaluation followed a pre-program/post-program comparison group design where measurements were done in the two groups (treatment and control schools) both before and after exposure to the program. Specifically, a Quasi Experimental Design (QED) was adopted in order to establish a causal relationship between the intervention and changes in outcomes. The schools were grouped as follows:

- **G1 –** DIY exposure in schools (treatment schools): Countryside College Walusubi, St Andrews Secondary School Lugazi, Fairmont High School Mukono, St Balikuddembe S.S Kisoga, Vision High School Nakifuma, Kisowera Secondary School, Lugazi Homeland College, Wellstar Bright Secondary School, Mpoma School Satellite Campus, and Mt St Henrys High School.
- **G2** – No DIY exposure (control schools): Equator College Lugazi, Green Valley School, Juliana High School, and Lugazi Progressive School.

2.3. Target Population

The target population consisted of students enrolled in the DIY clubs in the study schools in Mukono, Buikwe and Kayunga districts.

2.4. Data Collection Methods and Tools

Students' survey: A survey with students subscribing to the DIY club in the target schools was conducted. A structured questionnaire that was developed, validated and administered at baseline was adapted for the endline evaluation. The tool comprised 39 self-reported items under six (6) constructs: Agency, Self-determination, Positive identity, School climate, Social and Communication skills, and Student participation. At endline, three (3) items on gender and seven (7) items on Covid-19 resilience were included in the tool. Each item was responded by the students based on a 4-point Likert type scale whereby: *1=Strongly Disagree, 2=Disagree, 3=Agree, and 4=Strongly Agree*.

2.5. Sample Sizes and Sampling Strategies

A total of 326 students (treatment=159, control=167) participated in both the baseline and endline surveys. To arrive at the desired sample size, students in both the treatment and control schools were first enrolled into the DIY clubs and then all those who had enrolled into the clubs were targeted for interviews. The characteristics of the students surveyed are explored in **Section 3.1** of the findings. The number of students surveyed at baseline and endline per group, school and sex were as below.

Table 1: Number of students surveyed per group and school

Group	School	Male	Female	Total
Treatment	Countryside College Walusubi	7	18	25
	Kisowera Secondary School	8	23	31
	Lugazi Homeland College	9	7	16
	Mpoma School Satellite Campus	11	7	18
	St Andrews Secondary School Lugazi	5	8	13
	St Balikuddembe S.S Kisoga	7	14	21
	Vision High School Nakifuma	1	7	8
	Wellstar Bright Secondary School	9	18	27
Total (G1)		***57***	***102***	***159***
Control	Equator College Lugazi	14	23	37
	Green Valley School	9	9	18
	Juliana High School	16	56	72
	Lugazi Progressive School	14	26	40
Total (G2)		***53***	***114***	***167***
	Overall Total	**110**	**216**	**326**

2.6. Fieldwork Process

The baseline data collection was conducted in the month of March, 2019 while the endline data collection was conducted in the month of September, 2022 in the target schools. Data collection was carried out using smart devices such as Tablets so as to improve on the quality of the data and also to minimize data entry time and errors. The students completed the survey on a one-on-one basis with the Research Assistants.

2.7. Data Quality Control

- *Training of Research Assistants (RAs):* To ensure that quality data is collected, training of the RAs was conducted. The training was facilitated by the Monitoring, Evaluation and Learning staff from KLC who emphasised on the aspects of: evaluation methodology, objectives, interviewing skills, research ethics, tool administration and informed consent administration.
- *Checks by the M&E officer*: The KLCs M&E officer regularly checked that the RAs are following the evaluation protocol. Furthermore, the MEL officials checked on the quality of the data collected and performed all the necessary cleaning before any analysis was conducted.
- *Working with the Champion Teachers:* Before the data collection, necessary preparations such as scheduling of the data collection date, mobilisation of participants, etc. were conducted in collaboration with the Champion Teachers in the various project schools.

2.8. Tool Development and Validation Process

In order to develop a valid and reliable tool, the self-reported tool for students followed various stages and processes. These included:

i. Development of the Empirical Framework

The first stage in the tool development involved conducting literature review to develop an empirical framework that contained the constructs, variables and indicators of interest that could be developed through the DIY intervention that was to be given to the treatment group students. These constructs were then assigned an appropriate name based on the Social and Emotional Learning (SEL) competences. Social and emotional learning enhances students' capacity to integrate skills, attitudes, and behaviours to deal effectively and ethically with daily tasks and challenges.

ii. Validation Phase I: Cognitive Testing and Expert Validation of the Tool

The aim of Phase I validation exercise was to check the clarity and relevance of the items included in the Version 1 of the tool. Ultimately, this phase led to revision of the tool that was used in Phase II validation stage, with many students in form of a survey so as to assess the functionality of the scales and the associated items.

- *Cognitive Testing the Tool*

Cognitive testing has been demonstrated as a useful approach for the development of questionnaire items and determining item meaning[1,2]. This validation phase was conducted

[1] Alaimo, K., Olson, M. C., Frongillo, E. A., (1999). Importance of Cognitive Testing for Survey Items: An Example from Food Security Questionnaires, *Journal of Nutrition Education*, 269-275.
[2] Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quiñonez, H. R., & Young, S. L. (2018). Best Practices for Developing and Validating Scales for Health, Social, and Behavioral Research: A Primer. *Frontiers in public health*, *6*, 149. doi:10.3389/fpubh.2018.00149

with 2 groups of 6 students each (totalling to 12 students), of Senior One to Senior Three from Luigi Giussani High School, Wakiso district, Uganda. The session consisted of 2 parts: (i) students were asked to rate the items in the questionnaire based on a 4-point Likert scale, considering each variable at a time; and (ii) the facilitators engaged the students in a conversation/discussion to explore which items or words they found difficult or not clear, and also the meaning of some items (that sounded difficult) and the respondent's answers.

- *Expert Validation of the tool*

As part of the process in validating the survey tool, evidence of validity based on test content was investigated. According to Polit (2006)[3], content validity concerns with the degree to which a sample of items, taken together constitutes an adequate operational definition of a construct. Specifically, this is based on the relationship between the content addressed on a test and the underlying construct (or characteristic) it is trying to measure. The validity index is derived from ratings of at least 5 experts on the subject matter (Burns, 1987)[4], based on a 4-point relevance scale (Lynn, 1986)[5]. Then, for each item j, the Item-level Content Validity Index $(I-CVI_j)$ was computed as the number of experts giving a rating of either 3 or 4, divided by the total number of experts. Hence, for an item to be judged as having excellent content validity, it should have a minimum $I-CVI_j$ score of 0.78.

This phase involved 5 purposively selected experts who were asked to validate the items/questions in the draft tool on the aspects of relevance and clarity using the scales provided. These scales were; (a) 4-point relevance scale: *1=not relevant; 2=somewhat relevant; 3=quite relevant; 4 =highly relevant*; and (b) 4-point clarity scale: *1=not clear; 2=somewhat clear; 3=quite clear; 4 =very clear*. Furthermore, comments were solicited from the experts to identify items/aspects that needed clarification or revision.

iii. Validation Phase II: Assessing Functionality of the Scales and the Associated Items

The aim of Phase II validation exercise was to assess the functionality of the scales and the associated items included in the tool (*Version 2*). This led to the revision of the tool to have Version 3.

The tool used in this phase was based on the findings and way-forward from Phase I validation exercises – cognitive testing (by students of Senior One to Senior Three) and content validity (by purposively selected experts with experience in tool development).

[3] Polit, D. B. (2006). The content validity index: are you sure you know what's being reported? Critique and recommendations. *Research in nursing & health, 29(5),* , 489-497.
[4] Burns, N. G. (1987). The practice of nursing research: Conduct, critique and utilization. *WB Saumder International Edition* , 293-300.
[5] Lynn, M. R. (1986). Determination and quantification of content validity. . *Nursing research, 35(6),* , 382-386.

During this pilot, the students' questionnaire was tested on 733 students of Senior One (308), Senior Two (254), and Senior Three (171) from three of the schools in Wakiso, Mukono and Lugazi districts. These schools included: Luigi Giussani High School, Namakwa Senior Secondary School and Lugazi Homestone Boarding School. The students were asked to answer the questions/items based on the response formats provided and as guided by the Assessor.

As a result of this exercise, a revised tool (Version 3) was developed. This was the final tool that included constructs, variables and items as shown in the framework below.

Table 2: Constructs, Variables and Number of items per construct

Construct	Variables	Number of items
1) Agency	1. Cognitive competence 2. Self-efficacy	▪ 9 items
2) Self-determination	3. Self-determination	▪ 5 items
3) Positive identity	4. Positive identity	▪ 5 items
4) Communication and social skills	5. Communication and Social skills	▪ 5 items
5) Students' participation	6. Classroom Participation 7. School Participation	▪ 6 items
6) School climate	8. Bonding/Sense of belonging and Membership 9. Physical and psychological safety 10. Teacher-student relationship	▪ 9 items
7) Extra Items		▪ 3 items
Additional items (only at endline)		
8) Gender perceptions		▪ 3 items
9) Covid-19 resilience		▪ 7 items

iv. Reliability Analysis at Baseline

The baseline data was subjected to reliability analysis and the reliability coefficients of the constructs included in the final tools are as shown below.

Table 3: Reliability analysis of the tool

Constructs	Number of items	Scale reliability coefficients
1) Agency	9 items [5 reversed items]	0.61
2) Self-determination	5 items [5 reversed items]	0.51
3) Positive identity	5 items [4 reversed items]	0.62
4) Communication and social skills	5 items [1 reversed item]	0.64
5) Students' participation	6 items [0 reversed items]	0.58
6) School climate	9 items [2 reversed items]	0.74

As seen from the above table, the constructs exhibited moderate to strong reliability coefficients when compared with the conventional Cronbach alpha cut-offs.

2.9. Data analysis

Data cleaning was performed in order to identify any erroneous records prior to analysis. The cleaning and analysis of the data was done using STATA (Version 14.2) statistical package with the best practice of using 'do-files' which ease the process of code correction. The results were analysed in terms of percentages, means, and Difference in Differences (DID) Estimates. During analysis, row means for each student per construct under study were computed at both baseline and endline, after reversing negative items and average construct scores were determined. This meant that the average scores ranged from 1 (lowest level) to 4 (highest level). Frequency distribution tables were also used to represent the way students responded on each item.

In order to investigate the causal effects of the DIY intervention on the treatment schools over the control schools, DID analysis was conducted. The DID method removes the difference in the outcome between treatment and control groups at the baseline. It was implemented as an interaction term between the time (where 1 is assigned to the endline period and 0 is assigned to baseline period) and treatment (where 1 is assigned to the treatment group and 0 is assigned to control group) variables in a regression model as below:

$$Y = \beta_0 + \beta_1 * [Time] + \beta_2 * [Treatment] + \beta_3 * [Time * Treatment] + \varepsilon$$

Where; β_0 is the baseline average; β_1 is the time trend in control group; β_2 is the difference between two groups (treatment vs control) at baseline and β_3 is the difference in changes over time.

And with covariates as in the regression model below:

$$Y = \beta_0 + \beta_1 * [Time] + \beta_2 * [Treatment] + \beta_3 * [Time * Treatment] + \beta_4 * [Covariates] + \varepsilon$$

2.10. Ethical Considerations

The Research Assistants and MEL Officials utilised approaches that address ethical issues in dealing with study participants such as obtaining informed consent and ensuring confidentiality of the data collected.

2.11. Limitation to the study

Much as quasi-experimental design was appropriate for this kind of study, it has limitations when the parallel trend assumption is not fulfilled. This assumption requires that in absence of the DIY intervention, then the difference in observed outcomes between the treatment and control groups is constant over time. In other words, we need to ask the question: *Would the treated students have experienced the same outcomes as the control group students if they did not receive the DIY intervention?* This is definitely the hardest assumption to fulfil when there are only 2 data points. The best practice is always to acquire more data points before and after so as to have a visual inspection of this assumption. That said, care must be taken when making

conclusions about the program effects as it was not possible to investigate this assumption. Nonetheless, the strongest points for the analyses performed in this evaluation are:

- Robust standard errors are used to account for autocorrelation between pre-intervention and post-intervention in the same individual;
- Additionally, key variables are included as covariates in the estimation of the project effects.

Secondly, a challenge with self-reported tool is that it is always associated with social desirability issues whereby some respondents tend to report an answer in a way that they believe to be more socially acceptable than would be their 'true' answer. Some respondents do this in order to attain a favourable image of themselves and to avoid receiving negative evaluations. In addition to this, there is a tendency of some respondents perceiving themselves better in some skills than others thus confusing their opinion with reality. Attempts were made to minimise this bias by explaining in details and clearly to the respondents, the purpose of the study and the associated objectives, the confidentiality issues, the voluntary aspect to participation, and how useful their honest responses would be.

CHAPTER THREE: PRESENTATION OF FINDINGS

3.1. Baseline Characteristics of the Students Considered at Endline

A total of 326 students (Control=167 and Treatment=159) participated in both the baseline and endline surveys. The baseline characteristics of these students are shown in the table below.

Table 4: Baseline Characteristics of Learners

Control=167; Treatment=159; Total=326					
	(1)	(2)	(3)	(4)	(5)
Variable(s)	**Mean Control**	**Mean Treatment**	**Difference**	**t-value**	**P-value**
Age	14.79	13.981	-0.809	6.11	0.0000***
Female	0.683	0.642	-0.041	0.78	0.434
Leader	0.126	0.075	-0.05	1.50	0.1333
Club member	0.317	0.987	0.67	17.62	0.0000***
*** p<0.01, ** p<0.05, * p<0.1					

- **Age**: The mean age of the students interviewed was 14.4 years (14.8 years for control; 14.0 years for treatment), ranging from 11.0 to 19.0 years.
- **Sex**: Two thirds (66.3%) of the students interviewed were females (control=68.3%; treatment=64.2%).
- **Leader**: Only 10.1% of the students interviewed held a leadership position in their school (control=12.3%; treatment=7.6%).
- **Club member**: Nearly two-thirds (64.4%) of the students interviewed were members of at least one club in their school, including DIY club (control=31.7%; treatment=98.7%).

In order to improve on effect size estimations, baseline values of these variables are included in the final analyses as covariates. Also, the results without the covariates are reported.

3.1.Agency

Agency is the ability to employ one's assets and aspirations to make or influence their own decisions about their lives and set their own goals, as well as to act upon those decisions in order to achieve desired outcomes[6] . This construct had 9 items under the two variables:

- **Cognitive competence** refers to the ability to identify an issue, absorb information from multiple sources and evaluate options to reach a reasonable conclusion[6].
- **Self-efficacy** refers to belief in one's abilities to do many different things well (particularly the things that are the focus of the intervention)[6].

The students' self-ratings on each of the items under this construct disaggregated by group (treatment and control) were as shown below.

Table 5: How students rated themselves on the items about agency

Item	Group	Baseline				Endline			
		SD	D	A	SA	SD	D	A	SA
		Percent				Percent			
I have confidence that I will be a useful person when I grow up	Treatment	0.6	1.3	25.8	72.3	0.0	0.0	18.9	81.1
	Control	0.6	0.0	28.7	70.7	0.6	5.4	22.8	71.3
I do not expect to get what I want in future	Treatment	42.8	42.8	11.3	3.1	49.7	41.5	7.6	1.3
	Control	43.1	50.9	4.2	1.2	40.7	47.3	9.0	3.0
I can see that my future will not be positive	Treatment	41.5	39.6	11.3	7.6	45.3	49.7	3.1	1.9
	Control	38.3	55.1	3.6	3.0	38.9	49.1	7.2	4.8
It is not possible for me to be happy in future	Treatment	39.6	51.6	5.0	3.8	49.1	48.4	1.9	0.6
	Control	40.1	54.5	3.6	1.8	35.3	56.3	6.0	2.4
I believe there is a solution for any problem	Treatment	1.9	5.7	41.5	50.9	1.3	0.6	42.1	56.0
	Control	1.8	4.2	49.1	44.9	2.4	4.2	47.3	46.1
I do not have any solutions for some of the problems I am facing	Treatment	13.2	35.9	40.3	10.7	12.0	34.0	48.4	5.7
	Control	10.2	40.7	40.1	9.0	8.4	48.5	34.1	9.0
I know how to develop plans to achieve my objectives	Treatment	1.9	10.7	49.1	38.4	0.6	4.4	61.6	33.3
	Control	1.8	3.6	53.3	41.3	5.4	4.8	65.9	24.0
Problems do not stop me from achieving my goals	Treatment	5.7	12.0	39.6	42.8	2.5	2.5	50.3	44.7
	Control	3.0	7.2	46.7	43.1	6.6	14.4	46.1	32.9
I feel my life is determined by other people	Treatment	15.7	42.1	32.1	10.1	18.2	42.8	32.1	6.9
	Control	13.8	36.5	37.1	12.0	11.4	44.3	35.3	9.0
SD=Strongly Disagree; D=Disagree; A=Agree; SA=Strongly Agree; N=326									

The endline findings revealed that:

- The majority (96.9%) of the students (94.0% of control and 100.0% of treatment) 'agreed or strongly agreed' with the statement "*I have confidence that I will be a useful person when I grow up*";

[6] DIY - Empirical Framework for KOMO LC

- The majority (89.5%) of the students (88.0% of control and 91.2% of treatment) 'disagreed or strongly disagreed' with the statement "*I do not expect to get what I want in future*";
- The majority (91.4%) of the students (88.0% of control and 94.9% of treatment) 'disagreed or strongly disagreed' with the statement "*I can see that my future will not be positive*";
- The majority (94.5%) of the students (91.6% of control and 97.5% of treatment) 'disagreed or strongly disagreed' with the statement "*It is not possible for me to be happy in future*";
- The majority (95.7%) of the students (93.4% of control and 98.1% of treatment) 'agreed or strongly agreed' with the statement "*I believe there is a solution for any problem*";
- More than half (51.5%) of the students (56.9% of control and 45.9% of treatment) 'disagreed or strongly disagreed' with the statement "*I do not have any solutions for some of the problems I am facing*";
- The majority (92.3%) of the students (89.8% of control and 95.0% of treatment) 'agreed or strongly agreed' with the statement "*Problems do not stop me from achieving my goals*";
- The majority (86.8%) of the students (79.0% of control and 95.0% of treatment) 'agreed or strongly agreed' with the statement "*I know how to develop plans to achieve my objectives*";
- Most (58.3%) of the students (55.7% of control and 61.0% of treatment) 'disagreed or strongly disagreed' with the statement "I feel my life is determined by other people".

Effectiveness of the DIY intervention on Agency

Overall, students scored an average of 3.19 out of 4.00 on agency (treatment=3.27, control=3.11), ranging from 1.11 to 4.00. The standard deviations for the treatment and control groups were 0.33 and 0.47 respectively. The students' average scores on this construct by group and sex are shown in the figure below.

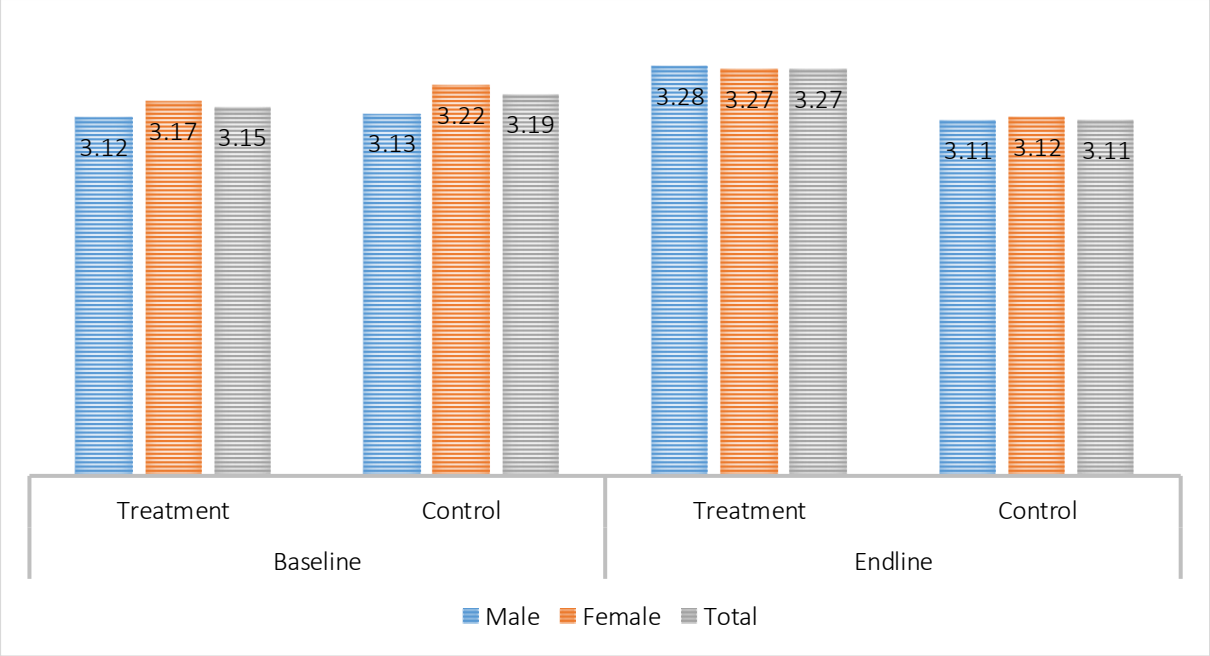

Figure 1: Students' average scores on Agency

The impact of the intervention on the construct of agency is investigated using the difference in difference approach considering the intent to treat estimations, with and without covariates.

Table 6: Average scores on Agency

	Estimates	Std. Error	t-value	P-value
Panel 1: ITT Estimates without covariates				
Mt – Mc at baseline	-0.041	0.039	-1.07	0.287
Mt – Mc at endline	0.161	0.045	3.56	0.000***
DID	0.202	0.059	3.4	0.001***
R-square	0.02			
Panel 2: ITT Estimates with covariates				
Mt – Mc at baseline	-0.069	0.049	-1.4	0.162
Mt – Mc at endline	0.141	0.055	2.57	0.010**
DID	0.21	0.059	3.56	0.000***
R-square	0.05			

Notes: The intent-to-treat estimates of the project impact and robust standard errors are reported. The ITT is based on the baseline and endline samples for only students who were interviewed at these 2 points. The baseline covariates in Panel 2 include: age of the student, sex of the student, whether student holds a leadership role and whether student subscribes to any club in the school. Mt - the mean of the treatment group; Mc - the mean of the control group. DID – Difference in Difference

*** p<0.01, ** p<0.05, * p<0.1

The results depict that the intervention improved the students' *agency* in the treatment than control schools, in terms of the average score on the construct (DID Estimate=0.21). This effect is statistically significant at 5% level.

3.2.Self-determination

Self-determination refers to the capacity to sustain both effort and interest in long-term projects regardless of perceived or real difficulties. This construct had 5 items under the variable self-determination[7].

The students' self-ratings on each of the items under this construct disaggregated by group (treatment and control) were as shown below.

Table 7: How students rated themselves on the items about self-determination

Item	Group	Baseline				Endline			
		SD	D	A	SA	SD	D	A	SA
		Percent				Percent			
I usually set a goal but later choose to follow a different one	Treatment	8.8	47.2	34.6	9.4	10.1	45.3	37.1	7.6
	Control	13.8	36.5	36.5	13.2	7.8	44.3	40.1	7.8
I get focused on an idea for a short time and then lose interest	Treatment	14.5	49.7	27.7	8.2	10.7	54.7	30.8	3.8
	Control	15.0	48.5	28.7	7.8	12.6	47.9	32.3	7.2
I cannot do much to change things in my life	Treatment	13.8	45.3	29.6	10.7	28.9	54.7	14.5	1.9
	Control	16.2	47.9	24.0	11.4	18.6	55.1	20.4	6.0
When I face life difficulties, I feel helpless	Treatment	14.5	43.4	28.9	13.2	13.8	37.1	36.5	12.6
	Control	10.2	43.1	31.7	15.0	7.2	41.3	40.7	10.8
I do things that feel good in the moment but regret later on	Treatment	12.0	40.9	38.4	8.8	8.8	56.0	32.7	2.5
	Control	10.2	39.5	40.7	9.6	10.8	43.7	37.7	7.8
SD=Strongly Disagree; D=Disagree; A=Agree; SA=Strongly Agree; N=326									

The endline findings revealed that:

- More than half (53.7%) of the students (52.1% of control and 55.3% of treatment) 'disagreed or strongly disagreed' with the statement "*I usually set a goal but later choose to follow a different one*";
- Most (62.9%) of the students (60.5% of control and 65.4% of treatment) 'disagreed or strongly disagreed' with the statement "*I get focused on an idea for a short time and then lose interest*";
- The majority (78.5%) of the students (73.6% of control and 83.6% of treatment) 'disagreed or strongly disagreed' with the statement "*I cannot do much to change things in my life*";
- Nearly half (49.7%) of the students (48.5% of control and 50.9% of treatment) 'disagreed or strongly disagreed' with the statement "*When I face life difficulties, I feel helpless*";
- Most (59.5%) of the students (54.5% of control and 64.8% of treatment) 'disagreed or strongly disagreed' with the statement "*I do things that feel good in the moment but regret later on*".

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Effectiveness of the DIY intervention on Self-determination

Overall, students scored an average of 2.67 out of 4.0 on agency (treatment=2.73, control=2.61), ranging from 1.00 to 3.80. The standard deviations for the treatment and control groups were 0.46 and 0.49 respectively. The students' average scores on this construct by group and sex are shown in the figure below.

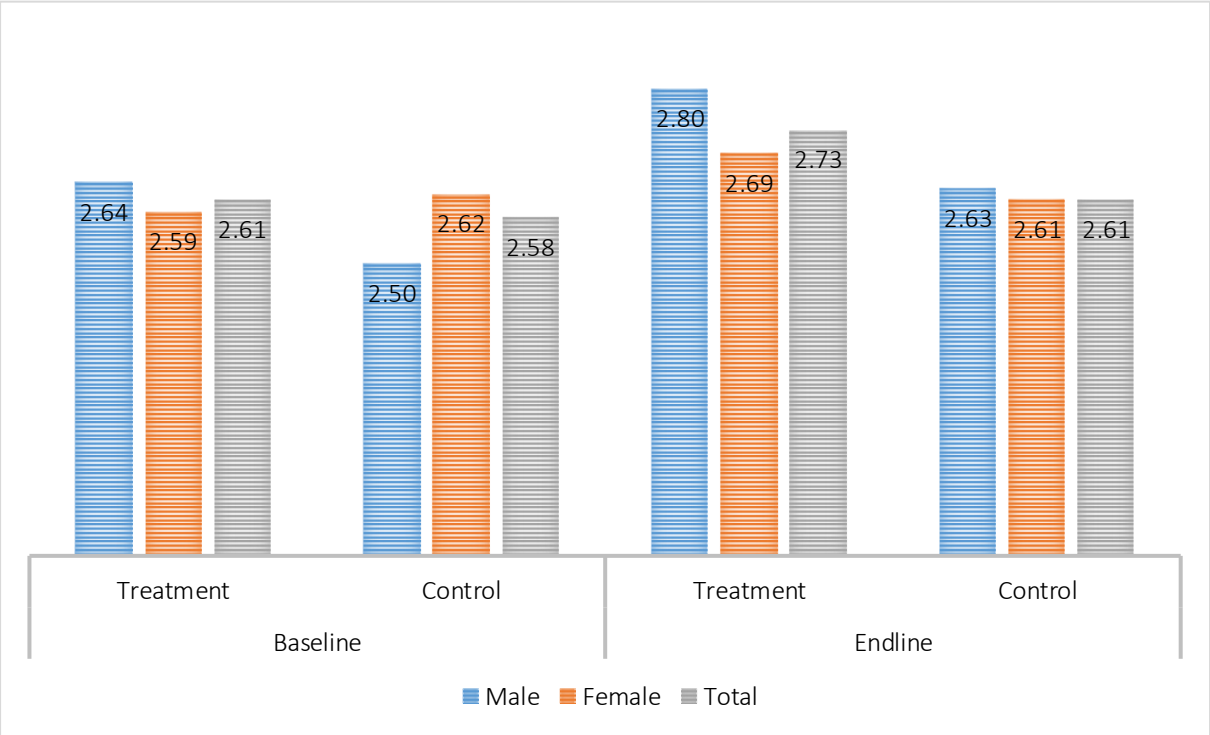

Figure 2: Students' average scores on Self-determination

The impact of the intervention on the construct of self-determination is investigated using the difference in difference approach considering the intent to treat estimations, with and without covariates.

Table 8: Average scores on Self-determination

	Estimates	Std. Error	t-value	P-value
Panel 1: ITT Estimates without covariates				
Mt – Mc at baseline	0.028	0.055	0.52	0.605
Mt – Mc at endline	0.115	0.053	2.19	0.029**
DID	0.087	0.076	1.15	0.252
R-square	0.01			
Panel 2: ITT Estimates with covariates				
Mt – Mc at baseline	-0.051	0.071	-0.72	0.473
Mt – Mc at endline	0.044	0.068	0.65	0.516
DID	0.095	0.076	1.26	0.209
R-square	0.03			

Notes: The intent-to-treat estimates of the project impact and robust standard errors are reported. The ITT is based on the baseline and endline samples for only students who were interviewed at these 2 points. The baseline covariates in Panel 2 include: age of the student,

sex of the student, whether student holds a leadership role and whether student subscribes to any club in the school. Mt - the mean of the treatment group; Mc - the mean of the control group. DID – Difference in Difference
*** p<0.01, ** p<0.05, * p<0.1

The results show that the intervention improved the students' *self-determination* in the treatment than control schools, in terms of the average score on the construct (DID Estimate=0.10). However, this effect is not statistically significant at 5% level.

3.3. Positive identity

Positive identity refers to the positive and coherent attitudes, beliefs and values that one holds about him/herself and his/her future. This construct had 5 items under the variable positive identity[8].

The students' self-ratings on each of the items under this construct disaggregated by group (treatment and control) were as shown below.

Table 9: How students rated themselves on the items about positive identity

Item	Group	Baseline				Endline			
		SD	D	A	SA	SD	D	A	SA
		Percent				Percent			
I am worried about what other people think of me	Treatment	13.2	42.1	35.2	8.8	6.9	40.3	42.8	10.1
	Control	10.8	42.5	36.5	10.2	15.0	39.5	32.3	13.2
I get scared when I am to speak in front of a group	Treatment	23.3	30.8	30.2	15.7	17.0	45.9	31.5	5.7
	Control	21.0	41.3	28.1	9.6	15.6	50.3	25.2	9.0
I fear to present my opinions in public	Treatment	15.7	38.4	32.1	13.8	15.1	49.1	32.7	3.1
	Control	16.2	43.7	31.7	8.4	15.0	50.3	28.1	6.6
I feel confident to speak in public	Treatment	7.6	23.9	41.5	27.0	1.3	27.7	47.8	23.3
	Control	3.6	22.8	45.5	28.1	7.2	15.6	51.5	25.8
I can easily get disappointed	Treatment	18.2	34.6	39.0	8.2	8.8	45.3	39.6	6.3
	Control	15.0	41.9	34.7	8.4	7.8	41.9	38.9	11.4

SD=Strongly Disagree; D=Disagree; A=Agree; SA=Strongly Agree; N=326

The findings revealed that:

- A half (50.9%) of the students (54.5% of control and 47.2% of treatment) 'disagreed or strongly disagreed' with the statement "*I am worried about what other people think of me*";
- Most (64.4%) of the students (65.9% of control and 62.9% of treatment) 'disagreed or strongly disagreed' with the statement "*I get scared when I am to speak in front of a group*";
- Most (64.7%) of the students (65.3% of control and 64.1% of treatment) 'disagreed or strongly disagreed' with the statement "*I fear to present my opinions in public*";
- The majority (74.2%) of the students (77.2% of control and 71.1% of treatment) 'agreed or strongly agreed' with the statement "*I feel confident to speak in public*";

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- Over a half (51.8%) of the students (49.7% of control and 54.1% of treatment) 'disagreed or strongly disagreed' with the statement "I can easily get disappointed".

Effectiveness of the DIY intervention on Positive identity

Overall, students scored an average of 2.69 out of 4.00 on positive identity (treatment=2.69, control=2.69), ranging from 1.00 to 4.00. The standard deviations for the treatment and control groups were 0.49 and 0.62 respectively. The students' average scores on this construct by group and sex are shown in the figure below.

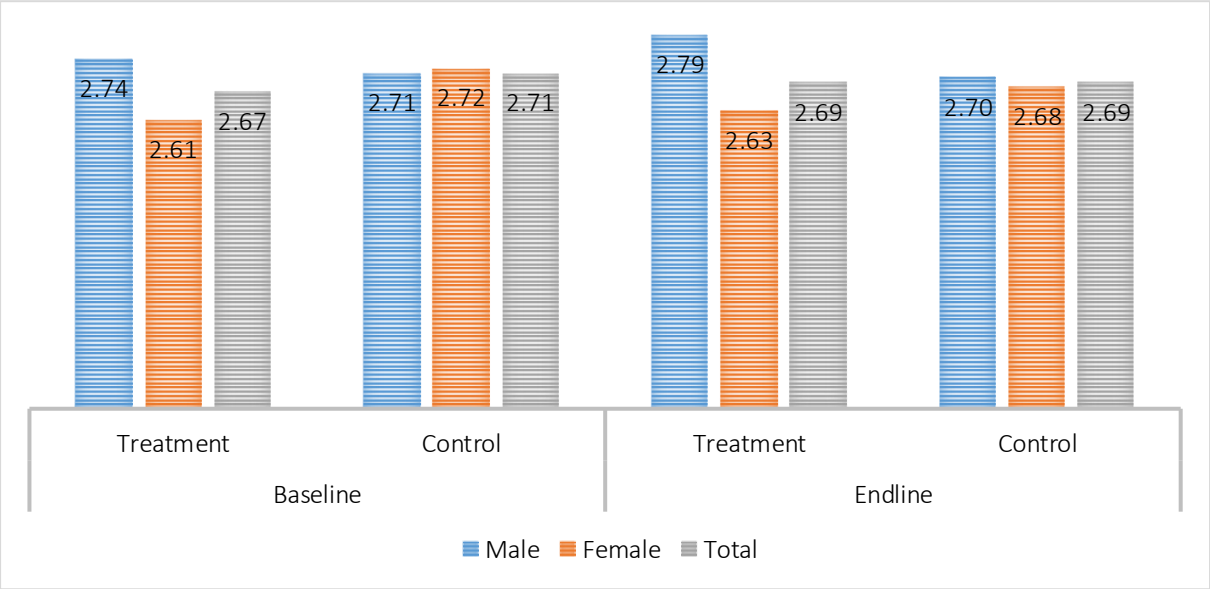

Figure 3: Students' average scores on positive identity

The impact of the intervention on the construct of positive identity is investigated using the difference in difference approach considering the intent to treat estimations, with and without covariates.

Table 10: Average scores on Positive identity

	Estimates	Std. Error	t-value	P-value
Panel 1: ITT Estimates without covariates				
Mt – Mc at baseline	-0.057	0.064	-0.89	0.374
Mt – Mc at endline	-0.001	0.062	0.01	0.993
DID	0.056	0.089	0.63	0.528
R-square	0.00			
Panel 2: ITT Estimates with covariates				
Mt – Mc at baseline	-0.129	0.081	-1.59	0.112
Mt – Mc at endline	-0.069	0.081	0.86	0.391
DID	0.06	0.088	0.68	0.497
R-square	0.01			

Notes: The intent-to-treat estimates of the project impact and robust standard errors are reported. The ITT is based on the baseline and endline samples for only students who were interviewed at these 2 points. The baseline covariates in Panel 2 include: age of the student, sex of the student, whether student holds a leadership role and whether student subscribes to

any club in the school. Mt - the mean of the treatment group; Mc - the mean of the control group. DID – Difference in Difference
*** p<0.01, ** p<0.05, * p<0.1

The results show that the intervention improved the students' *positive identity* in the treatment than control schools, in terms of the average score on the construct (DID Estimate=0.06). However, this effect is not statistically significant at 5% level.

3.4. Communication and Social skills

Social and Communication skills are a range of skills used to communicate and interact with others, including communication (verbal and non-verbal and listening), assertiveness, conflict-resolution and negotiation strategies. These are skills that help to integrate feelings, thinking and actions to achieve specific social and interpersonal goals[9]. An orientation of one's interests and energies towards the outer world of people and things rather than the inner world of subjective experience. The construct of communication and social skills is characterised by positive affect and sociability. This construct had 5 items.

The students' self-ratings on each of the items under this construct disaggregated by group (treatment and control) were as shown below.

Table 11: How students rated themselves on the items about social and communication skills

Item	Group	Baseline				Endline			
		SD	D	A	SA	SD	D	A	SA
		Percent				Percent			
I know how to communicate with others	Treatment	1.3	4.4	51.6	42.8	0.6	1.9	61.6	35.9
	Control	0.0	1.2	62.3	36.5	1.2	1.2	61.1	36.5
I can patiently listen as others are talking	Treatment	1.3	5.7	57.9	35.2	0.0	1.3	67.3	31.5
	Control	0.6	4.8	61.1	33.5	1.8	4.8	65.3	28.1
I can confidently talk to my teachers any time	Treatment	2.5	12.0	52.8	32.7	0.0	9.4	59.1	31.5
	Control	0.0	8.4	56.3	35.3	3.0	8.4	59.9	28.7
I can confidently talk to my fellow schoolmates any time	Treatment	0.0	7.6	52.8	39.6	1.3	5.7	58.5	34.6
	Control	0.0	3.6	58.1	38.3	1.2	6.0	61.1	31.7
I do not work well with fellow students	Treatment	28.9	53.5	14.5	3.1	22.0	67.9	8.8	1.3
	Control	21.6	65.9	9.6	3.0	16.2	74.9	7.8	1.2

SD=Strongly Disagree; D=Disagree; A=Agree; SA=Strongly Agree; N=326

The findings revealed that:

- The majority (97.5%) of the students (97.6% of control and 97.5% of treatment) 'agreed or strongly agreed' with the statement "*I know how to communicate with others*";
- The majority (96.0%) of the students (93.4% of control and 98.8% of treatment) 'agreed or strongly agreed' with the statement "*I can patiently listen as others are talking*";
- The majority (89.6%) of the students (88.6% of control and 90.6% of treatment) 'agreed or strongly agreed' with the statement "*I can confidently talk to my teachers any time*";

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- The majority (92.9%) of the students (92.8% of control and 93.0% of treatment) 'agreed or strongly agreed' with the statement "*I can confidently talk to my fellow schoolmates any time*";
- The majority (90.5%) of the students (91.0% of control and 89.9% of treatment) 'disagreed or strongly disagreed' with the statement "*I do not work well with fellow students*".

Effectiveness of the DIY intervention on Communication and Social skills

Overall, students scored an average of 3.22 out of 4.00 on social and communication skills (treatment=3.24, control=3.19), ranging from 1.40 to 4.00. The standard deviations for the treatment and control groups were 0.38 and 0.44 respectively. The students' average scores on this construct by group and sex are shown in the figure below.

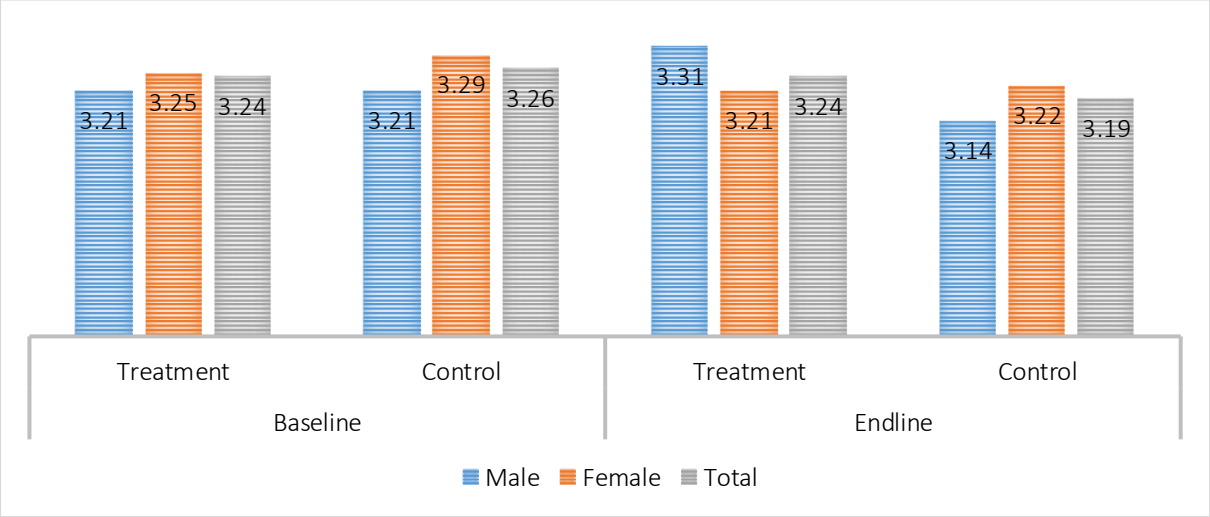

Figure 4: Students' average scores on social and communication skills

The impact of the intervention on the construct of social and communication is investigated using the difference in difference approach considering the intent to treat estimations, with and without covariates.

Table 12: Average scores on Social and Communication skills

	Estimates	Std. Error	t-value	P-value
Panel 1: ITT Estimates without covariates				
Mt – Mc at baseline	-0.023	0.045	-0.52	0.604
Mt – Mc at endline	0.051	0.046	1.12	0.261
DID	0.075	0.064	1.16	0.244
R-square	0.00			
Panel 2: ITT Estimates with covariates				
Mt – Mc at baseline	-0.075	0.055	-1.35	0.177
Mt – Mc at endline	0.006	0.057	0.11	0.915
DID	0.081	0.064	1.27	0.205
R-square	0.02			

Notes: The intent-to-treat estimates of the project impact and robust standard errors are reported. The ITT is based on the baseline and endline samples for only students who were

interviewed at these 2 points. The baseline covariates in Panel 2 include: age of the student, sex of the student, whether student holds a leadership role and whether student subscribes to any club in the school. Mt - the mean of the treatment group; Mc - the mean of the control group. DID – Difference in Difference
*** p<0.01, ** p<0.05, * p<0.1

The results show that the intervention improved the students' Social and Communication skills in the treatment than control schools, in terms of the average score on the construct (DID Estimate=0.08). However, this effect is not statistically significant at 5% level.

3.5. Students' Participation

This construct had 6 items and two variables were considered:

- **Classroom participation** is defined as the behaviour engagement and includes, paying attention in class, coming prepared, asking and answering questions; and participating in class discussions (Fredricks, Filsecker, & Lawson, 2016).[10]
- **School participation** is defined as student behaviours involving social interaction with peers and teachers in the school with academic and socio-emotional purpose[11].

The students' self-ratings on each of the items under this construct disaggregated by group (treatment and control) were as shown below.

Table 13: How students rated themselves on the items about students' participation

Item	Group	Baseline				Endline			
		SD	D	A	SA	SD	D	A	SA
		Percent				Percent			
My teachers encourage me to ask questions in class	Treatment	0.0	2.5	42.1	55.4	0.6	1.3	40.9	57.2
	Control	0.6	1.2	40.1	58.1	0.0	3.0	43.7	53.3
My participation in class is valued by my teachers	Treatment	6.3	18.2	47.8	27.7	1.9	16.4	60.4	21.4
	Control	2.4	9.0	53.3	35.3	3.6	8.4	58.7	29.3
My teachers expect me to do my best all the time	Treatment	0.0	0.6	44.0	55.4	0.0	0.6	39.6	59.8
	Control	0.0	1.8	44.3	53.9	0.0	3.0	50.3	46.7
I participate in preparation of classroom activities	Treatment	1.9	3.1	55.4	39.6	1.3	3.8	60.4	34.6
	Control	0.6	3.6	61.7	33.5	2.4	4.2	67.7	25.8
My teachers encourage me to participate in school activities	Treatment	0.0	5.7	52.8	41.5	0.0	1.9	59.1	39.0
	Control	0.6	4.2	47.3	47.9	0.0	5.4	58.7	35.9
My participation in the school activities is valued by others	Treatment	15.1	26.4	42.1	16.4	5.0	27.0	53.5	14.5
	Control	4.8	18.0	58.1	19.2	3.0	18.0	63.5	15.6

SD=Strongly Disagree; D=Disagree; A=Agree; SA=Strongly Agree; N=326

[10] Fredricks, J. A., Filsecker, M., & Lawson, M. A. (2016). Student Engagement, Context, and Adjustment: Addressing Definitional, Measurement and Methodological Issues. *Learning and Instruction*, 43 (1), 1-4.
[11] DIY - Empirical Framework for KOMO LC

The findings revealed that:

- The majority (97.5%) of the students (97.0% of control and 98.1% of treatment) 'agreed or strongly agreed' with the statement "*My teachers encourage me to ask questions in class*";
- The majority (85.0%) of the students (88.0% of control and 81.7% of treatment) 'agreed or strongly agreed' with the statement "*My participation in class is valued by my teachers*";
- The majority (98.1%) of the students (97.0% of control and 99.4% of treatment) 'agreed or strongly agreed' with the statement "*My teachers expect me to do my best all the time*";
- The majority (94.2%) of the students (93.4% of control and 94.9% of treatment) 'agreed or strongly agreed' with the statement "*I participate in preparation of classroom activities*";
- The majority (96.3%) of the students (94.6% of control and 98.1% of treatment) 'agreed or strongly agreed' with the statement "*My teachers encourage me to participate in school activities*";
- The majority (73.6%) of the students (79.0% of control and 67.9% of treatment) 'agreed or strongly agreed' with the statement "*My participation in the school activities is valued by others*".

Effectiveness of the DIY intervention on Students' participation

Overall, students scored an average of 3.25 out of 4.00 on students' participation (treatment=3.26, control=3.24), ranging from 1.83 to 4.00. The standard deviations for the treatment and control groups were 0.36 and 0.42 respectively. The students' average scores on this construct by group and sex are shown in the figure below.

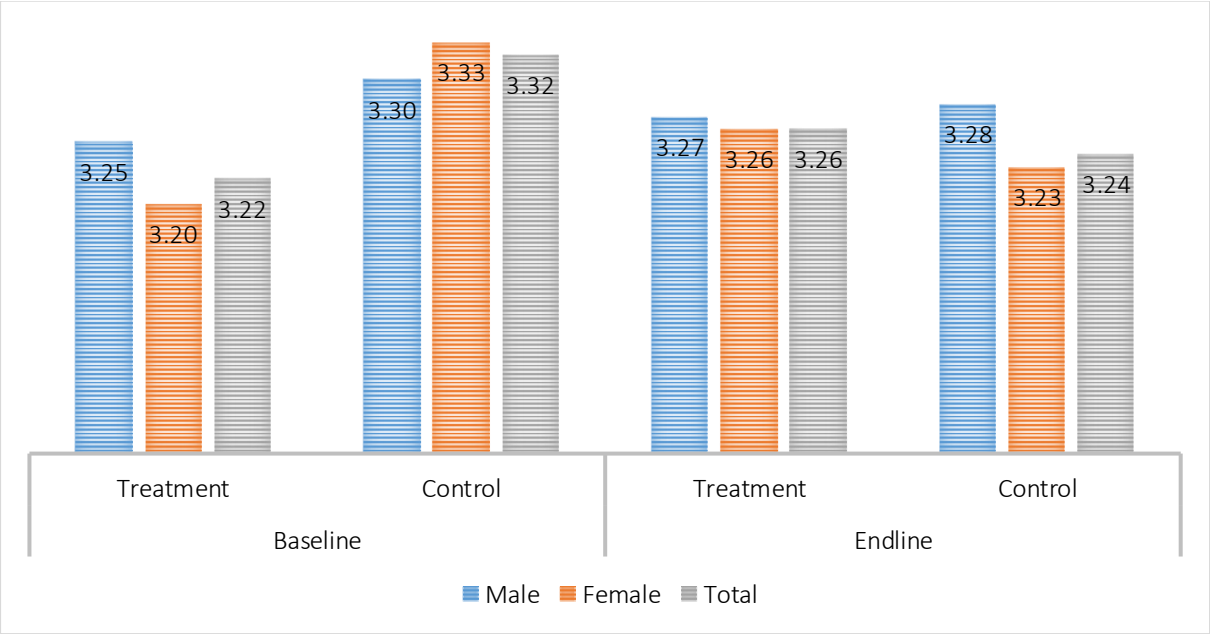

Figure 5: Students' average scores on student participation

The impact of the intervention on the construct of student's participation is investigated using the difference in difference approach considering the intent to treat estimations, with and without covariates.

Table 14: Average scores on Students' participation

	Estimates	Std. Error	t-value	P-value
Panel 1: ITT Estimates without covariates				
Mt – Mc at baseline	-0.100	0.043	-2.35	0.019**
Mt – Mc at endline	0.019	0.043	0.43	0.666
DID	0.119	0.061	1.96	0.051*
R-square	0.01			
Panel 2: ITT Estimates with covariates				
Mt – Mc at baseline	-0.124	0.053	-2.35	0.019**
Mt – Mc at endline	-0.001	0.055	0.01	0.99
DID	0.123	0.06	2.05	0.041**
R-square	0.03			

Notes: The intent-to-treat estimates of the project impact and robust standard errors are reported. The ITT is based on the baseline and endline samples for only students who were interviewed at these 2 points. The baseline covariates in Panel 2 include: age of the student, sex of the student, whether student holds a leadership role and whether student subscribes to any club in the school. Mt - the mean of the treatment group; Mc - the mean of the control group. DID – Difference in Difference

*** p<0.01, ** p<0.05, * p<0.1

The results show that the intervention improved the students' participation in the treatment than control schools, in terms of the average score on the construct (DIDE=0.12). This difference was statistically significant at 5% level.

3.6. School Climate

School climate refers to an environment that develops and supports their assets, agency, access to services and opportunities; and strengthens their ability to avoid risks and to stay safe, secure, and be protected and live without fear of violence or retribution. An enabling environment encourages and recognizes youth while promoting their social and emotional competence to thrive. The term "environment" should be interpreted broadly and includes: social (e.g. relationships with peers and adults), normative (e.g. attitudes, norms and beliefs), structural (e.g. laws, policies, programs services, and systems) and physical (e.g. safe, supportive spaces)[12]. This construct had 9 items and three variables were considered:

- **Belonging/sense of belonging and membership** is the emotional attachment and commitment made to social relationships in the family, peer group, school or community[12].

- **Physical and psychological safety** is a situation where youth feel safe in their immediate environment. Physical environment is that which is free from violence,

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conflict and crime. Youth feel free to express their ideas, thoughts and feelings in their environment[12].

- **Teacher-student relationship** refers to the positive relationship with an adult in order to have at least one caring and consistent role model in their lives. Healthy peer relationships are also particularly important to youth[12].

The students' self-ratings on each of the items under this construct disaggregated by group (treatment and control) were as shown below.

Table 15: How students rated themselves on the items about school climate

Item	Group	Baseline				Endline			
		SD	D	A	SA	SD	D	A	SA
		Percent				Percent			
When I need help, I trust my teachers will help me	Treatment	3.1	3.8	53.5	39.6	3.1	6.3	61.6	28.9
	Control	1.2	1.8	47.3	49.7	3.0	4.8	52.7	39.5
I feel lucky to be a student of this school	Treatment	1.3	5.0	39.0	54.7	0.0	3.8	44.0	52.2
	Control	0.0	3.0	40.1	56.9	1.2	3.0	51.5	44.3
People in my school treat me well	Treatment	1.3	5.0	52.2	41.5	1.3	1.3	56.6	40.9
	Control	1.8	5.4	46.1	46.7	0.6	2.4	61.1	35.9
My teachers punish students without even knowing what really happened	Treatment	33.3	53.5	8.8	4.4	30.2	46.5	18.2	5.0
	Control	32.9	54.5	9.0	3.6	29.9	57.5	8.4	4.2
I feel safe being in this school	Treatment	1.3	6.3	40.9	50.9	1.3	1.3	55.4	42.1
	Control	1.2	4.2	41.3	53.3	0.6	3.0	52.1	44.3
I do not feel comfortable with my teachers	Treatment	39.0	50.9	8.2	1.9	33.3	61.0	5.0	0.6
	Control	32.9	55.1	11.4	0.6	31.7	54.5	12.6	1.2
My teachers value the opinions of girls and boys equally	Treatment	4.4	5.0	48.4	42.1	1.9	6.3	51.6	40.3
	Control	1.8	10.2	53.3	34.7	4.8	6.0	50.3	38.9
My teachers really care about me	Treatment	1.9	1.9	50.9	45.3	0.0	1.9	66.0	32.1
	Control	0.6	1.8	53.9	43.7	0.6	3.0	65.9	30.5
I find it easy to talk to my teachers about problems at school	Treatment	9.4	17.6	44.0	28.9	6.9	26.4	44.0	22.6
	Control	3.0	18.6	44.9	33.5	7.8	14.4	53.9	24.0

SD=Strongly Disagree; D=Disagree; A=Agree; SA=Strongly Agree; N=326

The endline findings revealed that:

- The majority (91.4%) of the students (92.2% of control and 90.6% of treatment) 'agreed or strongly agreed' with the statement "*When I need help, I trust my teachers will help me*";
- The majority (96.0%) of the students (95.8% of control and 96.2% of treatment) 'agreed or strongly agreed' with the statement "*I feel lucky to be a student of this school*";
- The majority (97.2%) of the students (97.0% of control and 97.5% of treatment) 'agreed or strongly agreed' with the statement "*People in my school treat me well*";
- The majority (82.2%) of the students (87.4% of control and 76.7% of treatment) 'disagreed or strongly disagreed' with the statement "*My teachers punish students without even knowing what really happened*";

- The majority (96.9%) of the students (96.4% of control and 97.5% of treatment) 'agreed or strongly agreed' with the statement "*I feel safe being in this school*";
- The majority (90.2%) of the students (86.2 % of control and 94.3% of treatment) 'disagreed or strongly disagreed' with the statement "*I do not feel comfortable with my teachers*";
- The majority (90.5%) of the students (89.2% of control and 91.8% of treatment) 'agreed or strongly agreed' with the statement "*My teachers value the opinions of girls and boys equally*";
- The majority (97.2%) of the students (96.4% of control and 98.1% of treatment) 'agreed or strongly agreed' with the statement "*My teachers really care about me*";
- The majority (72.4%) of the students (77.8% of control and 66.7% of treatment) 'agreed or strongly agreed' with the statement "*I find it easy to talk to my teachers about problems at school*".

Effectiveness of the DIY intervention on School climate

Overall, students scored an average of 3.24 out of 4.00 on school climate (treatment=3.24, control=3.24), ranging from 1.56 to 4.00. The standard deviations for the treatment and control groups were 0.36 and 0.45 respectively. The students' average scores on this construct by group and sex are shown in the figure below.

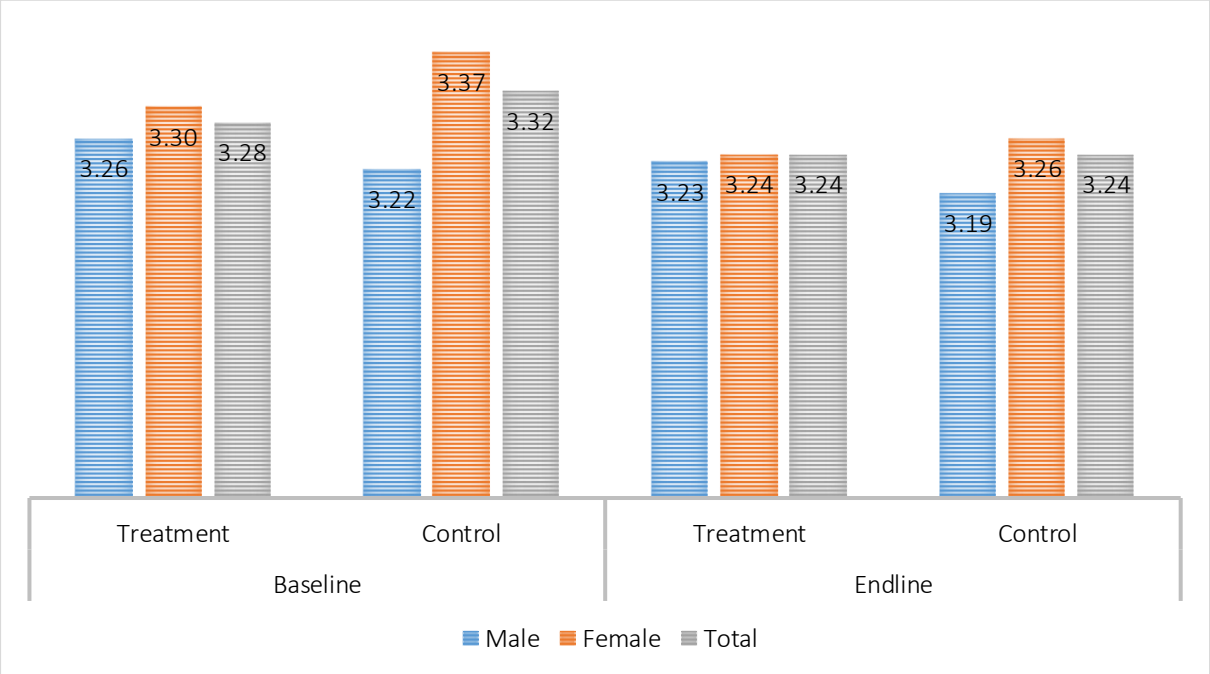

Figure 6: Students' average scores on school climate

The impact of the intervention on the construct of school climate is investigated using the difference in difference approach considering the intent to treat estimations, with and without covariates.

Table 16: Average scores on school climate

	Estimates	Std. Error	t-value	P-value
Panel 1: ITT Estimates without covariates				
Mt – Mc at baseline	-0.040	0.045	-0.89	0.376
Mt – Mc at endline	-0.002	0.045	0.05	0.964
DID	0.038	0.063	0.59	0.553
R-square	0.01			
Panel 2: ITT Estimates with covariates				
Mt – Mc at baseline	-0.072	0.056	-1.28	0.2
Mt – Mc at endline	-0.029	0.056	0.52	0.606
DID	0.043	0.063	0.67	0.501
R-square	0.02			

Notes: The intent-to-treat estimates of the project impact and robust standard errors are reported. The ITT is based on the baseline and endline samples for only students who were interviewed at these 2 points. The baseline covariates in Panel 2 include: age of the student, sex of the student, whether student holds a leadership role and whether student subscribes to any club in the school. Mt - the mean of the treatment group; Mc - the mean of the control group. DID – Difference in Difference

*** p<0.01, ** p<0.05, * p<0.1

The results show that the intervention improved the school climate in the treatment than control schools, in terms of the average score on the construct (DID Estimate=0.04). However, this effect is not statistically significant at 5% level.

3.7. Gender perceptions

At endline, three items were included in the tool to explore aspects related to gender. The students' self-ratings on each of these items disaggregated by group (treatment and control) were as shown below.

Table 17: How students rated themselves on gender items

Item	Group	Strongly Disagree	Disagree	Agree	Strongly Agree
		Number of students (percent)			
Only males should take up high leadership positions	Treatment	90(56.6)	64(40.3)	5(3.1)	0(0.0)
	Control	67(40.1)	87(52.1)	7(4.2)	6(3.6)
A girl's opinion is as good as a boy's opinion	Treatment	1(0.6)	27(17.0)	85(53.5)	46(28.9)
	Control	11(6.6)	24(14.4)	83(49.7)	49(29.3)
It is unfortunate for parents to produce only daughters	Treatment	41(25.8)	79(49.7)	31(19.5)	8(5.0)
	Control	32(19.2)	85(50.9)	35(21.0)	15(9.0)

The findings on these items revealed that:

- The majority (94.5%) of the students (92.2% of control and 96.9% of treatment) 'disagreed or strongly disagreed' with the statement "*Only males should take up high leadership positions*";

- The majority (80.7%) of the students (79.0% of control and 82.4% of treatment) 'agreed or strongly agreed' with the statement "*A girl's opinion is as good as a boy's opinion*";
- Most (72.7%) of the students (70.1% of control and 75.4% of treatment) 'disagreed or strongly disagreed' with the statement "*It is unfortunate for parents to produce only daughters*".

Overall, students scored an average of 3.12 out of 4.00 on gender items (treatment=3.20, control=3.04), ranging from 1.00 to 4.00. The standard deviations for the treatment and control groups were 0.45 and 0.59 respectively. The students' average scores on this construct by group and sex are shown in the figure below.

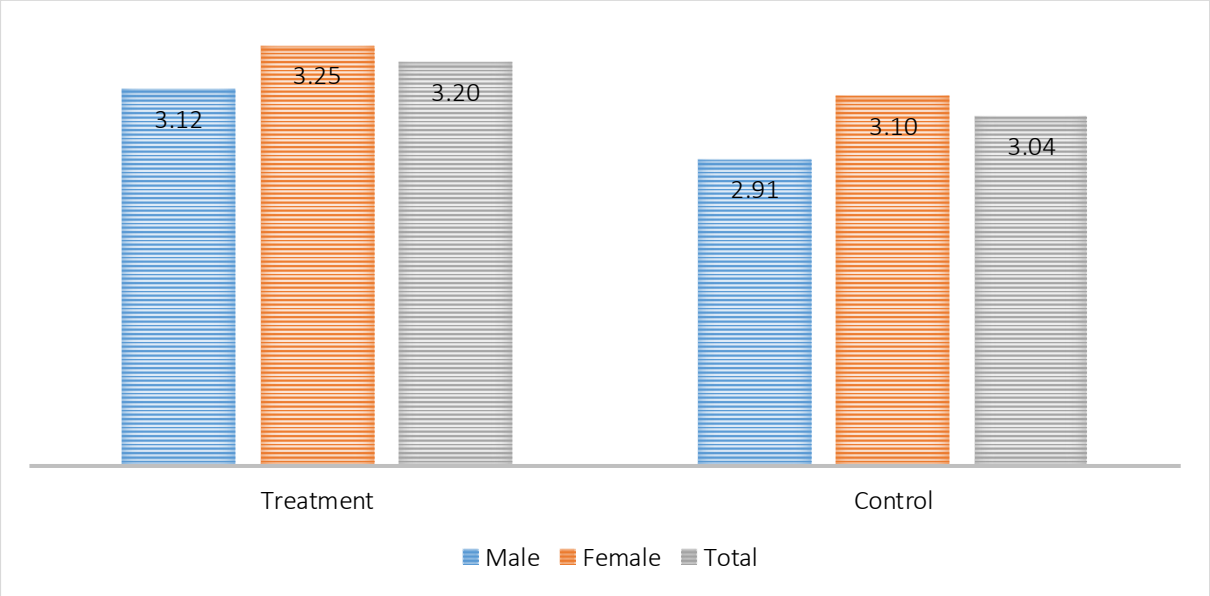

Figure 7: Students' average scores on gender items

The average scores on the gender construct of the treatment students were significantly higher (at 5% level) than those of the control students ($Pr(|T| > |t|) = 0.0046$). Precisely, students in the treatment schools exhibited higher gender perception scores than those from the control schools (Average Treatment Effect=0.165).

3.8. Covid-19 resilience

In order to explore the students' demonstration of life skills during the lockdown period, seven items were added to the tool at endline. Prior to construction of these items, in-depth interviews were conducted with selected students in the treatment schools to explore, among other aspects, their experiences during the Covid-19 lockdown. The findings from this exercise informed the development of these test items.

The students' self-ratings on each of these items disaggregated by group (treatment and control) were as shown below.

Table 18: How students rated themselves on Covid-19 resilience

Item	Group	Strongly Disagree	Disagree	Agree	Strongly Agree
		Number of students (percent)			
I was able to continue learning even when schools were closed	Treatment	1(0.63)	41(25.79)	91(57.23)	26(16.35)
	Control	18(10.78)	44(26.35)	86(51.50)	19(11.38)
I was able to support other peers in managing life	Treatment	1(0.63)	42(26.42)	102(64.15)	14(8.81)
	Control	13(7.78)	49(29.34)	93(55.69)	12(7.19)
I was able to do something to make money when schools were closed	Treatment	3(1.89)	29(18.24)	93(58.49)	34(21.38)
	Control	7(4.19)	27(16.17)	106(63.47)	27(16.17)
During the pandemic when schools were closed, I felt so lonely and bored	Treatment	11(6.92)	58(36.48)	69(43.40)	21(13.21)
	Control	7(4.19)	47(28.14)	79(47.31)	34(20.36)
I was able to convince my parents to support me in doing meaningful activities for example helping my community, starting a business, etc.	Treatment	2(1.26)	29(18.24)	99(62.26)	29(18.24)
	Control	12(7.19)	30(17.96)	92(55.09)	33(19.76)
I had a difficult time managing stressful situations during the COVID-19 period	Treatment	8(5.03)	54(33.96)	80(50.31)	17(10.69)
	Control	3(1.80)	46(27.54)	92(55.09)	26(15.57)
I was able to look at the lockdown period in a positive way for doing something meaningful, for example, helping my community, starting a business, etc.	Treatment	7(4.40)	29(18.24)	96(60.38)	27(16.98)
	Control	10(5.99)	48(28.74)	93(55.69)	16(9.58)

The findings on these items revealed that:

- Most (68.1%) of the students (62.9% of control and 73.6% of treatment) 'agreed or strongly agreed' with the statement "*I was able to continue learning even when schools were closed*".
- Most (67.8%) of the students (62.8% of control and 73.0% of treatment) 'agreed or strongly agreed' with the statement "*I was able to support other peers in managing life*".
- The majority (79.7%) of the students (79.6% of control and 79.8% of treatment) 'agreed or strongly agreed' with the statement "*I was able to do something to make money when schools were closed*".
- Most (62.3%) of the students (67.7% of control and 56.6% of treatment) 'agreed or strongly agreed' with the statement "*During the pandemic when schools were closed, I felt so lonely and bored*".
- The majority (77.6%) of the students (74.8% of control and 80.5% of treatment) 'agreed or strongly agreed' with the statement "*I was able to convince my parents to support me in doing meaningful activities for example helping my community, starting a business, etc.".*
- Most (65.9%) of the students (70.6% of control and 61.0% of treatment) 'agreed or strongly agreed' with the statement "*I had a difficult time managing stressful situations during the COVID-19 period*".

- The majority (71.1%) of the students (65.2% of control and 77.3% of treatment) 'agreed or strongly agreed' with the statement "*I was able to look at the lockdown period in a positive way for doing something meaningful, for example, helping my community, starting a business, etc.".*

Overall, students scored an average of 2.66 out of 4.00 on Covid-19 resilience (treatment=2.75, control=2.58), ranging from 1.00 to 4.00. The standard deviations for the treatment and control groups were 0.38 and 0.48 respectively. The students' average scores on this construct by group and sex are shown in the figure below.

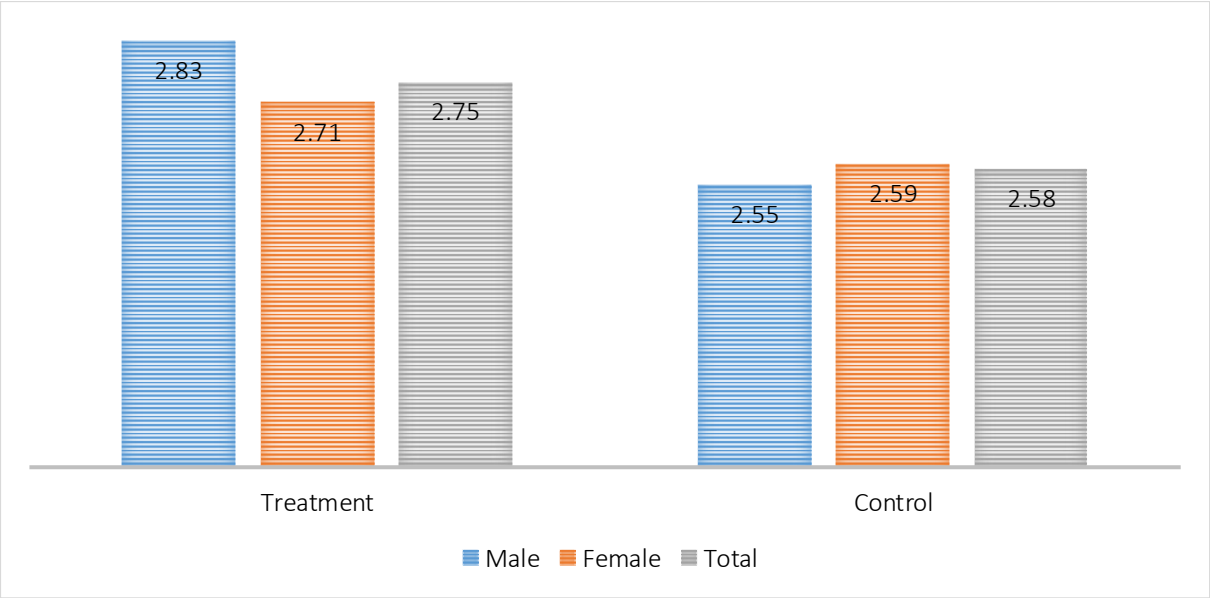

Figure 8: Students' average scores on Covid-19 resilience

The average scores on Covid-19 resilience of the treatment students were significantly higher (at 5% level) than those of the control students ($Pr(|T| > |t|) = 0.0003$). Precisely, students in the treatment schools exhibited higher Covid-19 resilience scores than those from the control schools (Average Treatment Effect=0.175).

CHAPTER FOUR: CONCLUSIONS AND RECOMMENDATIONS

4.1. Conclusions

Through difference in differences analyses, the evaluation results suggest improvements in the treatment schools compared to the control schools over the implementation period. The effects of the intervention were statistically significant at 5% level for the constructs of agency and students' participation. Small intervention effects were realised for the constructs of: self-determination, positive identity, social and communication skills, and school climate.

The results further revealed a significant (at 5% level) difference in the average scores of the two groups of students (treatment vs control) on the gender related aspects. It is evident that gender gaps and biases still exist among students of the treatment schools, including the DIY club members, considering the response patterns in the test items about gender aspects.

Students in the treatment schools exhibited (significant, at 5% level) higher Covid-19 resilience scores than those from the control schools.

Overall, the lag in time between some of the activities as a result of the lockdown period, could most likely have contributed to the small improvements in some constructs under study.

4.2. Recommendations

The following recommendations have been made exclusively based on the findings of the evaluation. These could as well be considered in case of another phase of a comparable intervention.

- There is need for a more intensive focus and effort towards sufficiently large improvements of the students' life skills especially on the constructs where improvements have not been significant. Students' competencies in some of the life skills constructs are still low, hindering their effective application in the real-life situations.
- Continued mentorship and support. This would allow youth who are still challenged in effectively developing and consequently applying the knowledge and skills. Linkages that can enable these youth to share with one another even beyond the usual school days could be explored.
- Development of sustainability strategies that are based on the identification of possible threats to the students' retention and continuous application of the skills and knowledge achieved through the DIY club intervention. The strategies should not only look at the short-term effects of the intervention but also the long-term objectives of promoting meaningful youth participation for improving the quality of education and learning outcomes. A whole school approach could be considered as it would result in strategies that look over and beyond the school setting.
- There is a need to investigate other factors that could have affected the intervention's achievements. These may include but not limited to the influence of the school environment, role of the teachers, school leaders, and non-DIY club students towards the application of the knowledge and skills attained. This could provide insights on what needs to be changed or reinvigorated for better achievements.