# The Effects of the Intervention Program on Low Achiever Students' Learning Achievement in Classroom

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*Authors' contributions*

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

*Original Research Article*

## ABSTRACT

Low achiever students can transform into academically successful individuals if teachers prioritize educational equity through intervention program in the classrooms. This paper presents the impact of intervention program on 18 low achiever students of two different grades in a primary school, carried out within the period of four months. This mixed, observational descriptive study of longitudinal design used instruments like block tests and exams to collect quantitative data, and teachers' observation records to collect qualitative data after interventions in the classrooms by the researchers. The result revealed significant improvement in scores of block tests and exams, and display of positive behavior towards learning by the participants. Findings from the data sources concluded that the intervention program implemented on the low achiever students could significantly improve the learning achievement and develop positive attitude towards learning. This research comes as a solution to the teachers who are struggling to improve the academic performance of low performing students and to the students who are pathetically struggling to improve themselves in the classrooms. Therefore, this research finding demonstrates that equal treatment to all the students in the classroom is a biased practice. Treating students according to their needs is the solution to support all and that is the educational equity.

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## 1. INTRODUCTION

"Failure is the pillar of success". This is a popular saying but for many students, failure could be an end of their school life. Low achiever students are the ones who usually fail in the schools. What does low achiever mean? If a student is unable to achieve the required objectives at the end of the lesson, term or course, then he/she may be identified as a low achiever. According to the Programme for International Student Assessment (PISA) the "low performers" are the students that score at Level 1. They are able to answer questions that involve clear directions with a single source of information and simple connections but cannot solve the problems of modern societies that are regularly faced by today's adults because they lack complex reasoning skills [1].

It is essential for the teachers to understand what causes the students to be low achievers in the classroom. Some students are low achievers due to physical disabilities who may require special education teachers. However, some become low achievers because of inappropriate teaching and assessment techniques. Besides that, the teachers may not be providing feedback and assistance on time [2-7]. Nevertheless, low achievers should not be neglected. The school must take care of the low performers for several reasons. In the school, poor performance and de-motivation leads to further worse marks, classroom absenteeism and high risks of dropping out of school which ultimately results in long term individual and societal consequences [1]. Low achievers exhibit lack of confidence. For example, [8] found out that the low achievers are; not competitive, not devoted to work, lack desire for difficult tasks, bother less to maintain their personality, possess fear of failure, and feel that their fate is controlled by some external force. All these behavior indicate that the low achievers lack energy to succeed in life. Usually the low achievers fail and have to repeat the same grade. Repetition can be a humiliation for the students which have huge negative impact in their life. Rumberger [9], Jimerson et al. [10] and Stearns et al. [11] argue that repetition in same grade is the main cause of the school dropout. This indicates that one of the ways to prevent school dropout is by supporting the low performing students and improve them academically.

There is huge educational financial implication on government if the students have to repeat the class or drop schools. Repeating class means the government has to spend on additional resources like; IT, stationeries, libraries, furniture, food, games and sports materials, teachers and lots other which. The parents also need to bear the additional financial burden for their repeating child. On the other hand, the child who is repeating also has to face one year of; time loss, emotional burden like embarrassment, and academic pressure to not to fail again. Therefore, this research was carried out to find out whether the academic performance of the low achievers in the classroom can be improved through intervention program.

## 2. LITERATURE REVIEW

Special attention is given to the low performing students in educationally top performing schools around the world. Each country has its own strategy to support the low performing students. A widely used strategy to support low performing students in Singapore, Japan, Finland, and in one of the states of the USA is explained here.

In Singapore, a screening test at the beginning identifies students that need support and the specialist teacher provides the learning support [1]. In Japan, education policy states high expectations for all students and to fulfill this, teachers must ensure that all students meet the curriculum standards by identifying the weaker ones and providing them extra support, [1]. In Finland, special teachers are involved who along with the classroom teachers identify the students who need extra help and these teachers work individually or in small groups helping these students [12]. In Chicago, if the students of grades 3, 6, 8, and 9 perform below the minimum standard, the authority moves them to the higher grade only after attending the seven-week summer bridge program and passing a test [13]. The above information supports that some of the top performing countries around the world have their own special programs to assist the low performing students to uplift their academic performance.

At the classroom level, teachers can play major role in helping the low achievers. Kuo et al. [14] discovered that teacher's assistance motivated low achievers. Similarly, the teachers should provide assistance and motivation to the academically low performing students to improve their learning. Similarly, in this research, the researchers have applied intervention program through four approaches; remedial classes,

motivation, paying attention, and positive feedback to the academically low achiever students.

## 3. INTERVENTION PROGRAM

### 3.1 Remedial Class

Remedial class is one of the highly used approaches in Bhutan and as well as around the world to improve the academic score of the students. Gangadhar et al. [15], have found out that, to improve academic performance of low achievers, remedial teaching is an effective measure. Ariyo and Adeleke [16] recommend providing after school programs to the low achieving students to care for their weaknesses in subjects.

For the remedial programs, the researcher in this research planned to keep and teach all the low achieving students in one group because, Carman [17] found that such low achieving students preferred to be with the similar performing students in smaller group settings. Carman [17] in his study also found that the supportive remedial programs provided by the teacher worked well. Similarly, this research also tried to find out the impact of remedial programs in academic improvement of low achiever students.

### 3.2 Motivation

Motivation is major factor that affects the academic performance in the students in classroom. A motivated child takes extra initiative to learn and is usually seen as active learner. Several research works suggest that students have to be motivated to improve learning in the classroom. Jabeen and Khan [18] said, "In order to increase academic achievement of low achievers, it is imperative that such students be trained in having a high achievement motivation".

Ryan and Deci (2000) suggested that students need to believe that, it is their own effort that enables them to succeed. Own effort comes out of motivation. A student lacking motivation may lack confidence to take part in complex activities. Carman [17] argued that it is likely that the low-achieving students may prefer simpler assignments or activities rather than the ones they think they cannot perform successfully. Students are reluctant to accept simpler activities because they lack motivation. Motivation from teacher can help overcome this problem.

Phuntsho et al. [18] found that the students' motivation level was high and they developed positive attitude towards a subject when teachers motivate the students during teaching and learning.

### 3.3 Paying Attention

Every teacher in the classroom asks the students to pay attention during the lesson. Rabiner et al. [19] found lack of students' attention reduced academic achievement and school performance. One way of making students attentive in classroom is that the teacher should also pay attention to the learners. The attention should be from both the teacher as well as the students which mean the teacher must also pay attention to the learners so that they are taken care. Yet, many a times, low achieving students are neglected and the teachers are seen giving attention to only the high achieving students. Ciaccio [20] found that teachers encourage only the high achievers to participate in classroom which leaves poor performers behind and discourages them from learning. Teachers must give attention not only to the high achievers but to all the students in the classroom without discrimination. All must receive equal opportunities.

Attention particularly in this research refers to teacher being attentive or giving preferences and creating opportunities for the low achieving students to participate in classroom activities. Giving opportunities to the students to participate in classroom activities is vital for learning. Yusoff [21] found that the low achievers demonstrated focused and engaging behavior in classroom discussion when they got opportunities to voice out their opinions. This finding supports that the low achievers need to be given attention or opportunities to participate in classroom. Besides that, the same study found that giving opportunities to the low achievers to voice out the opinions stimulated higher order thinking or reasoning skills. This clearly indicates that giving attention and opportunities to the low achievers helps in stimulation of brain which is required during teaching and learning.

### 3.4 Positive Feedback

Kinds of feedback that we use in the classroom have huge impact on learners during teaching learning process. Feedbacks can be in the form of verbal or written and can be positive and negative, but we have to use the positive

feedback during the teaching process. Positive feedback is a type of positive reinforcement which is essential for effective instruction in the classroom. Ani [22] argues that with positive feedback many students obtain knowledge more efficiently and expand their academic skills without much difficulty. Positive feedback motivates the learners because it develops confidence in them that encourages them to engage in similar tasks in the future. Similarly, a negative feedback can discourage them [17]. Feedback that teachers provide should not be discouraging to the students. Teachers can improve students' learning environment by providing feedback in positive ways.

## 4. SIGNIFICANCE OF THE STUDY

The study would be a source of information to the teachers, policy makers and educationalists. This would also serve as reference to the education institutions in Bhutan like, Royal Education Council (REC), Bhutan Council for School Examination and Assessment (BCSEA), Royal University of Bhutan (RUB), and to other institutions in Bhutan and around the world. The teachers would implement the findings from this research in their day-to-day classroom teaching and learning to support the low achiever students. This would finally come as a way forward strategy to solve the complex problem of improving the academic performance of the low achiever students. It will also be a positive hope for the students, parents and government to; improve the low performing students' learning achievement, develop love for learning, develop self confidence, improve attendance in school, prevent school dropout, save both financial material resources of the parents and government, and finally help in transforming the low achiever students into a responsible productive citizen. This study would also generate creativity in the teachers to come up with new strategies to assist the low achiever students.

## 5. RESEARCH OBJECTIVES

1). To find out the benefits of intervention program on the learning achievement of low achiever students.
2). To find out the low achiever students' attitude towards learning, after implementation of intervention program.

## 6. METHODOLOGY

This research is mixed, observational descriptive study of longitudinal design. From the total population of 201 students, a sample of 18 students was selected through purposive sampling method. The sample consisted of low achiever students of 2 sections from 8 sections of the school. The low achiever students underwent selection process based on the criteria which considered the students; i). with average score of less than 50% in the first three block tests of the subject taught by the researchers, ii). lacking confidence to participate in classroom activities, iii). with attention deficit hyperactivity disorder (ADHD) and, iv). poor reader. The students test score of three block tests before the midterm exam was collected, their classroom participation, classroom behavior and reading ability were recorded and analyzed. Based on these criteria, 18 students were purposely selected for the research. The independent variable was the implementation of intervention program and the dependent variables were learning achievement and attitude towards learning. The intervention program consisted of four intervention approaches namely; remedial class, motivation, giving attention and positive feedback which were implemented on the samples during the research period in the school. The data was collected using 3 instruments. The duration of study for implementation of intervention program and data collection in the field was for the period of four months.

## 7. INSTRUMENTS

The study used three instruments to collect the data. Two instruments gathered quantitative data and one instrument gathered qualitative data. For quantitative data, test score of six block test, and test score of two term exams were collected. The school conducts three block tests and one exam before the midterm and their score are considered as before treatment score and similarly the scores of three block tests and one exam conducted after the midterm are considered as after treatment score for this research. Qualitative data was collected from the teachers' classroom observation record.

## 8. INTERVENTION

The researchers applied intervention program on the participants after the midterm of the school academic year for the period of four months. The

intervention program consisted of four approaches namely, remedial classes, motivation, attention and positive feedback. The researchers applied the first approach, "remedial classes" as per the schedule of the school, as well as whenever it was required. They applied other three approaches during day-to-day classroom teaching and learning process and as well as during the remedial classes to the research participants.

The teacher used various kinds of motivation strategies to motivate the participants. The teaching happened through Information Technology (IT) like computer, audiovisual materials, power point, google photos, and youtube videos. The teaching focused on authentic experiential and real life meaningful learning by focusing on placed based education. The teachers inspired the learners to learn on their own by providing worksheets in groups and individually and then facilitated cooperative as well as competitive learning. The learners were empowered to do correction of worksheets or mini tests in-group, peer and self which was within their independent control. To motivate and energize the learners, the teachers used positive reinforcement techniques like; verbal praise, written positive praise, written positive feedback, small prize, stickers, drawing stars on their written works, special privileges, and positive body language and gestures. Teachers used effective, precise and descriptive praise immediately after the students' response like "correct spelling" rather than saying just "good boy or good girl". Teachings were made lively and interactive through fun and games.

Researchers paid special attention to the participants by giving preference or opportunities to participate in activities during the teaching period. The researchers focused on socialization by being approachable and creating funs in the classroom. Learners were provided frequent opportunities to participate in classroom activities by; creating group and individual tasks, frequent questioning to the mass, questioning by direct pinpoint, encouraging volunteerism, supporting learners by giving hint and suggestions, and providing think time.

In the last intervention approach, the researchers supported the learners by giving positive feedbacks. They focused on objective, purposive and timely positive feedbacks during the teaching period. The feedback focused on the past performance and the future steps to improve

further by the learners. Researchers ensured that the learners did not receive discouraging feedbacks. The positive feedback used was encouraging and constructive like, instead of saying, "your handwriting is dirty", the researcher said "write in clean handwriting" by showing some examples or the samples of clean handwriting.

As the above approaches were applied, the teachers observed the participants and maintained the observation records. The teachers' classroom observation records recorded students' behaviors while the intervention approaches were applied on the participants during the time of teaching learning process. Then the researchers observed the learners carefully and recorded the learners' physical reaction, response, movement, facial expressions, verbal response, activeness, role taken in the group works, volunteerism in activities, frequency of participation, willing to re-correct and the correct response. The school has practice of conducting three block tests and an exam before midterm and same pattern follows after. All the scores of three block tests and exam before midterm and after midterm were collected for data analysis. The scores of test and exam before midterm is the "before treatment" and scores after midterm is the "after treatment" for this research.

## 9. RESULTS

This research presents the results in two sections as per the two objectives of this research.

### 9.1 Result for Research Objective 1

There are two quantitative data to show the results of the first research objective. The first data shows the students' score of block tests and the second data shows the score of exams. Both the results show the comparison of students' scores before and after treatment. The scores of the block test and exam of the participants presented in the form of table and graph give clear information in the form of quantitative data.

#### 9.1.1 Achievement test comparison of block tests scores before and after treatment

The first data given below in the Table 1 is about the comparison of block tests scores before and after treatment. The mean test score of block tests of participants before treatment is 44.6 and

after treatment as 61.0. It shows a difference of 16 which is the improvement shown by the participants after the treatment. The 2-tailed significance value is 0.00. This clearly indicates that there is a significant difference in the learning achievement after the treatment. For graphical data, refer Fig. 1.

The data depicted in the graph in Fig. 1 shows the difference of mean marks scored by the participants for three block tests conducted before treatment and three block tests conducted after the treatment. The information reveals that the mean marks of the participants after the treatment is much higher than before treatment. This signifies that the intervention program implemented on the participants showed higher level of learning achievement in block tests after the treatment.

### 9.1.2 Achievement test comparison of exam score before and after treatment

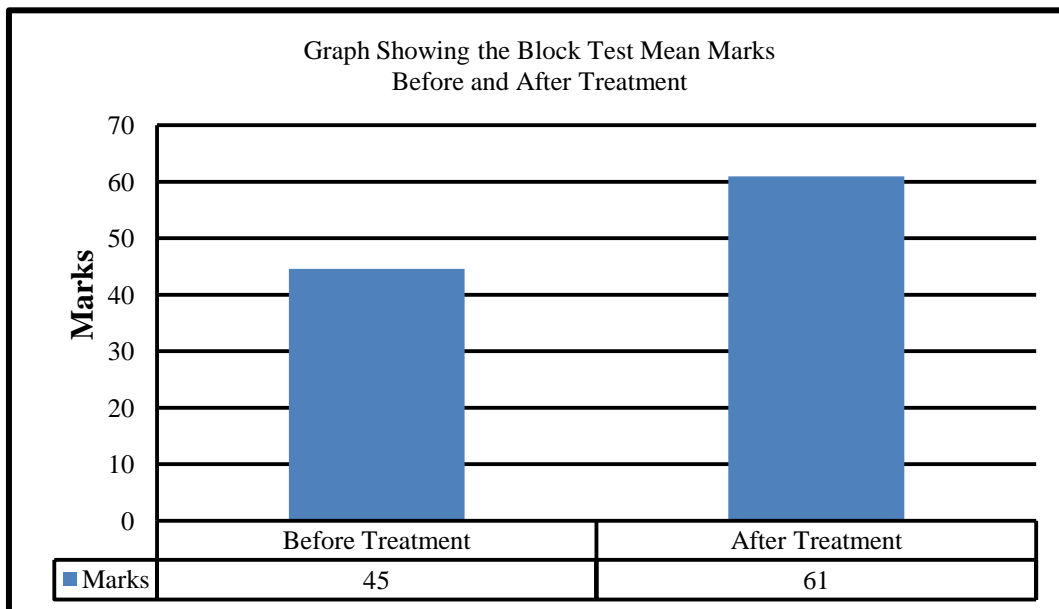The data of mid-term and annual exam test scores of the participants collected and analyzed.

The score of midterm exam is the "before treatment" and of annual exam is "after treatment". The mean for the mid-term exam is 54.0 and for the annual exam it is 77 with a difference of 23. The result strongly supports that there was improved learning achievement after the treatment. The 2-tailed significance is 0.0002, which indicates that there is significant difference in the performance of the participants between the mid-term and annual exam.

The data depicted in the graph in Fig. 2 shows the difference of mean marks scored by the participants for exam conducted before treatment and exam conducted after the treatment. The exam before treatment is the midterm exam and after treatment exam is the annual exam conducted at the end of the year. The information reveals that the mean marks of the participants after the treatment is much higher than before treatment. This signifies that the intervention program implemented on the participants showed higher level of learning achievement in exam after the treatment.

**Table 1. Comparison of block test score before and after treatment**

|  | Before Treatment | After Treatment |
|---|---|---|
| Number of samples | 18 | 18 |
| Mean | 45.0 | 61.0 |
| SD | 11.8 | 16.7 |
| Mean Difference | 45.0 - 61.0= -16 | |
| Sig (2-tailed) | 0.001 | |

*Significance level: > 0.05 = not significant, < 0.05 = significant*
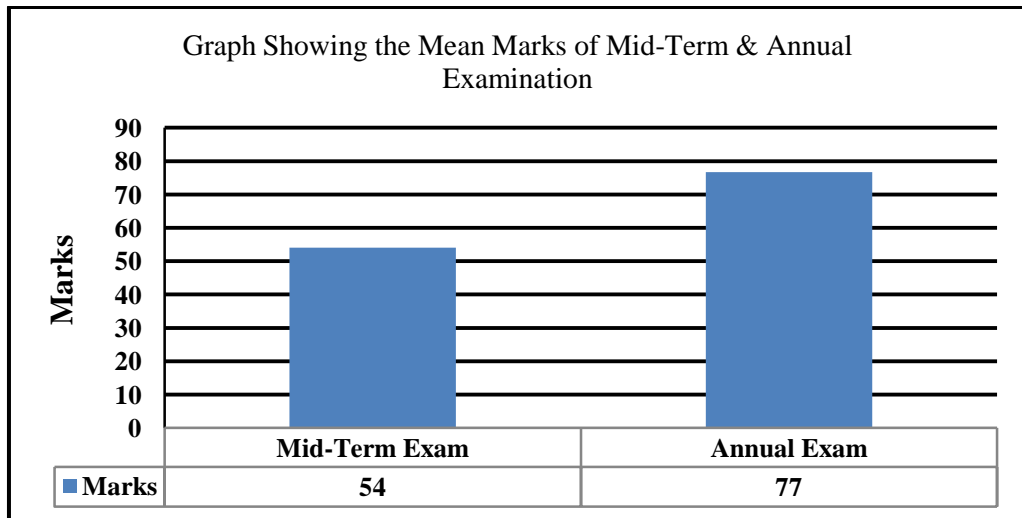


**Fig. 1. Comparison of learning achievement before and after treatment**

**Table 2. Comparison of test score of mid-term and annual exam**

|                 | Mid-Term          | Annual |
|-----------------|-------------------|--------|
| N               | 18                | 18     |
| Mean            | 54.0              | 77.0   |
| SD              | 11.8              | 20.4   |
| Mean Difference | 54.0 – 77.0 = -23 |        |
| 2tailed-value   | 0.0002            |        |

**Fig. 2. Comparison of learning achievement of mid-term and annual exam**



## 9.2 Result for Research Objective 2

The result of the second research objective is about the attitude towards learning in the form of qualitative data presented below.

### 9.2.1 Learners' attitude towards learning based on teacher's classroom observation

Teachers' classroom observation record was another instrument used by the researchers to collect data for the second objective of the research that aimed to study the low achiever students' attitude towards learning, after implementation of intervention program during classroom teaching. Accordingly, the researchers executed the intervention program on the participants and the data discussed here is from the teachers' classroom observation records.

The researchers analyzed teachers' classroom observation record using the grounded theory of Strauss and Corbin (1998) following three levels of coding process; open coding, axial coding and selective coding. Finally, the analyzed data categorized into three core themes; 1) motivated to learn, 2) increased learner's content knowledge, and 3) excited to learn.

*9.2.1.1 Motivated to Learn*

Every observation record mentioned about learners' motivation to learn during the lessons. While the teaching occurred through Information Technology (IT), the participants' attention was fully drawn towards the lessons. The students fully enjoyed the lesson while youtube videos related to the lesson were shown to them. While teacher asked questions in course of the lesson, they were actively answering. Many participants raised their hands repeatedly to respond to the questions. While the teaching happened through placed based education, the learners looked lively as they were outside the classroom learning through real life experience. While the teacher questioned whether they have seen or do similar thing at home or not, they could respond without hesitation as they could directly relate the lesson to their real life. While the teachers provided worksheets in groups and individually, they were actively discussing with friends or checked their books to find the answers. This helped them to retain the knowledge because later when the questions were asked, almost all the learners could give correct answers. Involving students in correction of the worksheets

or mini test papers in group, peers or individually helped them to improve their oral communication because they were seen giving justifications of the works which they did correction. The positive reinforcement techniques used by the teachers to motivate the learners had huge impact in learning as learners fully enjoyed. These encouraged the learners to participate in the classroom activities actively. During some cases, some learners did not receive prizes or stickers and they showed disappointment. However, the teachers gave effective and precise positive praise feedbacks on what mistakes they made and what has to be the correct response. Immediate teachers' attention and positive feedback to these disappointed learners gave confidence to them to participate again. The observers recorded learners being careful before responding to the questions both in classroom and during the tests.

In general, the observation records on motivation strategies showed that some common behaviors exhibited by the learners during classroom activities were; volunteered to participate, repeatedly responded to teacher's questions, took active role in classroom activities, and clarified their doubts with the teacher. Therefore, the teachers' classroom observation record revealed that the learners were highly motivated to learn during the implementation of intervention measures in the classroom.

### 9.2.1.2 Increased Learner's Content Knowledge

According to the teachers' observation records, intervention program increased the content knowledge of the learners. Two interventions approaches like paying attention and positive feedback given by the teachers enhanced critical thinking and construction of knowledge in the learners. The observers recorded that the learners were discussing with the friend, thinking for the answers and giving reasons to support their points. The observation records showed that the motivation and excitement created on the learners by the intervention program in the classroom enhanced active participation which directly increased the learners' content knowledge. This was evident according to the observation records, which showed that the answers given by the students for the questions asked by the teacher were mostly correct.

The answers given in the worksheets and mini tests conducted within the teaching periods revealed that the answers given by the learners were mostly correct. The correction done among themselves for the incorrect answers in the worksheets and tests also showed that the learners had acquired knowledge on their own. While the learners did worksheet and test paper correction, they were seen explaining why the particular answer was incorrect and what should be the correct answer. This is an important evidence to support the increase in learners' content knowledge. During the classroom question-answer session, when one student's answer was incorrect, the other immediately gave the correct answers as he or she was able to analyze the mistake in previous answer and came up with correct answer. From this data, the research supports that the intervention program increased the learners' content knowledge.

### 9.2.1.3 Excited to learn

The observation records revealed that during the classroom activities, the learners were actively participating. They tried to learn and complete their respective tasks. They engaged fully in interaction with friends and teachers without hesitation. They read the given questions and texts carefully and clarified their doubts. While the learners were empowered to do correction of the worksheets and test papers, they were actively doing the task and were seen referring the textbook and notebook in case of doubt. They enjoyed doing correction of others' papers. While the learners received their question papers and worksheets back, they checked all incorrect answers, clarified their doubt and re-wrote the correct answer it their respective place. They followed the feedback provided by the teacher and made immediate correction to reduce the errors. After receiving rewards and positive reinforcements from the teacher during the lessons, the learners expressed their happiness through language, gestures and showing their rewards to their friends then volunteered to do other works. Some asked additional worksheets to practice after class. In next class, the learners approached teachers to show their home works or any tasks they were given. When they knew that the lesson will be taught using IT, they were seen highly excited and they preferred youtube videos the most. They actively responded to the teachers questions during such lessons. They were also seen excited to go for outdoor class for place-based education. Many times, the participants demanded class tests, which was because of scoring high marks or rewards they received after their good performance in tests. All the above behaviors exhibited in the observation

records strongly support that the participants were excited to learn when intervention methods were applied in teaching learning processes.

To sum up, the findings from the teachers' observation records demonstrates that the intervention program transformed teaching learning situation into a conducive learning environment by making learning as; motivating, exciting, engaging activity with improved content knowledge.

## 10. DISCUSSION AND CONCLUSION

Rumberger [9], Jimerson et al. [10], and Stearns et al. [11] argued that repetition in same grade is the main cause of the school dropout. Jabeen & Khan [8] stated that the low achievers are not competitive, not devoted to work, lack desire for difficult tasks, and possess fear of failure. All these problems could be possibly resolved through the intervention program applied in this research because the result has proven that during the treatment the low achievers students exhibited behaviors like; active participation, repeated attempt to answer in classroom, fruitful group discussion, carefully reading the questions before answering, and giving correct responses most of the time to the teachers' questions. The intervention program also gave courage and confidence to equally compete among them and also learn through cooperation because all participants were academically low performing students of almost same level. They also received emotional and psychological support through reinforcement, attention and positive feedback from the teacher. The remedial classes helped students to relearn the classroom lessons.

The research finding concludes that the intervention program with the approaches like; remedial class, motivation, paying attention, and positive feedback to the low achiever students can significantly improve the learning achievement and develop positive attitude towards learning. Besides that, the finding also support the similar previous studies which state that the remedial teaching improves academic performance [15], motivation develops positive attitude towards subject (Phuntsho et al., 2018), and giving opportunities can engage and make the learners attentive [21].

At the same time, teachers should always remember when to use each strategy and which is the most appropriate action under each. Using

them at inappropriate time can develop negative behaviors in the learners. Scott & Landrum [2] objected, "Positive reinforcement amounts to bribery". This can possibly occur in the classrooms if teachers do not use the right kind of positive reinforcements at the right time. Paying attention to the learners is extremely essential. Teachers without being attentive to the learners cannot demand learners to be attentive in the classroom. If teachers want learners to pay attention to the lesson, teachers should be also nearby them which Bdiwi et al. [3] also found out that students' attention was better when the teacher was nearby around during the classroom activities. This research found out that positive feedback is highly effective approach to encourage learning. However, Ghamdi [4] stated, "Feedback should provide only the most important points that belong to the desired goal". Similarly, this research also used precise and constructive positive feedback for positive learning outcome.

## 11. RECOMMENDATIONS

Low achiever students need special attention and to help them improve their academic performance, this research finding recommends using intervention program. Teachers can apply more numbers of similar intervention approaches in the classroom whichever they find appropriate. Treating all students equally in the classroom is not an appropriate strategy. Low achiever students must receive extra emotional and social support from the teachers.

## CONSENT

Participants' written consent has been collected and preserved by the authors to maintain the international standard.

## ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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