

## **THE IMPACT OF REMEDIATION IN THE TEACHING AND LEARNING OF MAP WORK IN GEOGRAPHY SUBJECT AT ZJC LEVEL: A CASE OF MARANGE HIGH SCHOOL**

**CHIKWATURE, W.**

Mutare Polytechnic  
Research Department  
P.O. Box 640, Mutare

**&**

**OYEDELE, V.**

Africa University  
P.O. Box 1320, Mutare

### **ABSTRACT**

The main purpose of the study was to investigate the impact of remediation in the teaching and learning of map work at Zimbabwe Junior Certificate (ZJC) level. This research followed a case study research design rooted in qualitative research approach. The main objectives were to find out the attitudes of teachers and students towards the remediation exercise in the teaching and learning of map work, identify weaknesses and strength of remedial work in the teaching and learning of map work and to deduce the importance of remediation from students' performance and it was also the essence of the research to find out whether both teachers and students know the meaning of remediation, how students are identified and selected for remediation and the best strategies that should be employed in giving students remedial work. The target group was ZJC level students from whom the researchers selected a sample to obtain data. Samples of six (6) teachers were also included from geography department and other subject areas. The random sampling procedure was adopted to come up with the group. Questionnaires were given to students and collected consequently. The teachers were engaged in interviews by the researchers in an attempt to gather data for the research. Observations were also employed to identify the behavior of students and these were done during the school hours. The study used observations, questionnaires and interviews in the gathering of information. Respondents were asked to provide information on their perceptions and general know how on the effectiveness of remedial exercise in the teaching and learning of map work. The collected data were presented in form of charts, graphs and tables, interpretation and analysis of the presented data were shown as well in this study.

**Keywords:** Impact, remediation, teaching and learning, ZJC level.

### **INTRODUCTION**

Remediation work as a form of cooperation and supportive learning between students and teachers aims to cater for individual differences, help students who lag behind, develop interpretation skills and help students in critical thinking skills in the learning of map work. Teaching of map work at ZJC requires the teacher to find and use the most effective methods that combine all processes and equipment of teaching and this also includes giving students remediation work constantly.

Most students are facing challenges to observe, analyze and interpret information on the map work well during the normal lessons. Remediation in the teaching of map work is viewed as time consuming and not very important by some teachers. Shield and Morgan (1998) asset

that, ``in selecting students for diagnostic assessment and supplementary teaching priority should be given to those who achieve score at or below 50%``. Supplementary teaching should be directed at the lowest achieving students and these students should receive particular attention through carefully planned intervention within the classroom and where necessary through withdrawal from the classroom for small group individual teaching. The class teacher plays an important role in the initial identification of students who may have general or specific learning disabilities. The teacher should be alert to the possibility that some students may have general learning disability or a specific learning disability in English and Mathematics and bring their concerns to the attention of the teacher in the school who has responsibility for coordinating special needs and learning support.

For efficient management of time and to ensure that each element of the lesson is allocated an appropriate amount of time, it is useful to subdivide the 30-40 minutes of supplementary teaching session into smaller manageable time segments. This is to ensure that each aspect of a student's individual program receives adequate attention and that appropriate balance between the various learning activities in the lesson is maintained. The individualized education program is the strategy which is general to learning needs of individual pupil and it aims to reinforce the foundation of learning, help students to overcome their learning difficulties and develop their potentials. Kazoracki (2002) assets that the individualized education program should include short term and long term teaching objectives, learning stops, activities and reviews to ensure that the program is implemented effectively. This shows that when remediating students on map work, they should be met individually when finding the grid references, identifying directions, measuring distance, locating different features and measuring bearings.

Each student should be able to enter the remediation course at the appropriate level adapted to their personal luggage of prior knowledge, unique learning style and preferences. Therefore every course should adapt to the individual needs of every students. Tutor student interactions, mentoring, promoting student dialogue and the design and evaluation of virtual seminars are examples of aiming a better quality and efficient remedial education. The implementation of a comprehensive online learning is essential and should incorporate three stages that is infrastructure, content and teacher training. Under the individualized education program remedial teachers should hold meetings regularly to evaluate the effectiveness of work and gather opinions for refinement. He also supported that this face to face setting provide important factors for success in student's performance. Peer support program referred to the one where remedial teachers may train up students who perform better in a certain subject to become little teachers and who will be responsible for helping school mates with learning difficulties in group teaching and self study sessions as well as outside class. The program also helps students reinforce their knowledge and develop their communication and corporation skills as well as good interpersonal relationship. Multiple approaches in remedial education like collaboration, team work, tutoring and independent investigation as suited to student needs, enhances student's interest and provide variations in the learning process. It is important to understand that learning is a social activity that prospers from healthy interaction, encouragement and support in this way students will feel connected with others.

The reward scheme is the remedial strategy aims at guiding students to set objectives and plans and positively reinforce their good performance according to [www.theatlantic.com/./steel.html](http://www.theatlantic.com/./steel.html). Chikwature and Oyedele (2016) asset that, the most important thing is to help students cultivate an interest in learning and gain a sense of satisfaction and achievement during the learning process. Remedial teaching should provide

individual counseling in small groups working systematically including observing, diagnosing remedy and evaluation, working purposely and intensively with students or pupil, acquiring skills in order to deal with learning problems, seeing to it that the pupil can remain at his or her school and making a plan that can be used in the group when remedial teacher is absent. Teachers face increased pressure as their roles diversify compared to previous generations on remedial work. This has been supported by Chikwature and Oyedele (2016) that teachers have varied in their responses to these challenges. Teachers are finding it tiresome and increasing their work load to cope with all students who are lagging behind on the interpretation and analysis of topographical maps. Large class may be viewed as an obstacle to the successful implementation of inclusive education. Larger classes produce additional demands on the regular educator or teacher, while reinforcing concern that all students may not receive proper time or attention.

Main stream teachers are now called upon to be sensitive to the variety of modern classrooms and to be able to rise to the challenge by adjusting their teaching styles in accordance with the multiplicity of learning styles they face. They are further required to be psychologically and practically prepared to take the dynamic role of inclusive educator while being aware that making physical provision for students with disability is important as making additional changes resulting in the removal of barriers to physical and education access. In [www.edb.gov.hk/..book-3.html](http://www.edb.gov.hk/..book-3.html), remedial teachers should always observe the performance of students in class and their behavior in groups, establish close relationship with students, develop mutual trust and listen carefully what they say, help up students build up self-confidence and a health self image, give positive reinforcements to students good behavior and do not pay undue attention to their misbehavior. Teachers should list out the problems and set out the priorities with an aim to improve one or two of them at once. Teachers should train students to establish interpersonal relationships so as to facilitate effective communication and collaboration as well as to enhance the team spirit of students.’’

Main stream educators generally lack confidence as attempted to include students with disabilities or learning difficulties in their class room. This may be as a result of lacking proficiency about modifying the regular education curriculum to suit students with individual learning needs. Teachers who perceive themselves as competent remedial educators often have more positive attitude toward remedial education. Teachers appear to hold positive attitudes about including and teaching students with disabilities in general education if they are trained in this field of education. Srinivasan (2000) asserts that, some students attend schools of poor quality and don't receive adequate grounding in mathematics and languages. From the situation on the ground this can be the reason why most students fail to calculate the distance on the map, measure bearings and use campus points. Students become very shy of being given remedial work and tend to dislike the exercise. Other programs have used slightly different names, since ‘remedial education’’ carries some negative connotations.

Remedial teaching is usually given once or twice a week at school or in the remedial teachers' own practice. This would give the teacher more time to plan and students to feel comfortable. Best on test results, the students are placed in classes which are most likely to provide benefits and classes are often small with focus on high teacher-student interaction and they can take place at night or during the day to accommodate various needs. Some students may be embarrassed about needing to take remediation classes. It is important to examine the attitudes of main stream educators toward the inclusion of students with disabilities in regular settings as their perceptions may influence their behavior towards and acceptance of such students. While some studies point that teachers' attitudes to remedial education are typically

positive. Other studies review that teachers attitudes may be influenced by the disquiet they experience regarding the impact such a process will have on the time and skills.

According to Chikwature and Oyedele (2016), developmental education incorporates human development theories intended to bring together academic and student support services to assist students in preparing to make choices appropriate to their current stage in development, and it is viewed as being appropriate for all students. Developmental courses or remedial works are considered as learning improvement programs or services, like learning assistance for individual students, course related services and comprehensive learning systems, but also freshman courses, study strategies courses, orientation courses and freshmen composition classes. By helping students to strengthen their basic academic skills like the ability to read, analyze and interpret maps for instance as well as the ability to communicate, student's opportunities for success at the labour market are significantly expanded. Therefore, remedial education not only improves students' ability to graduate but also increases students' job opportunities. Anderson (2008) asserts that timely detailed feedback, provided as near in time as possible to the performance of the assessed behavior, is most effective in providing motivation and in shaping behavior and mental constructs. Chikwature and Oyedele (2016) claims that, remedial classes afford students the opportunities to catch up and be on the same page as their peers. From [www.en.wikipedia.org..remedialeducation](http://www.en.wikipedia.org..remedialeducation) it is supported that these classes are a way to equip students with tools they need to success. Without these classes, students run the risk of not getting the specialized help they need.

Mathematics is a commonly feared subject that many students harbor anxiety towards and remediation classes can help lay a great foundation. Since map work involves a list of calculations on distance, bearings and finding grid references, remedial education becomes a useful practice. Jaggars et al (2014) assert that unprepared students who have completed remedial coursework achieve greater academic success than underprepared students who did not do remedial coursework.

Comprehensive and effective remedial lessons support students on the map observation, analysis and interpretation in geography. Researchers are in the notion that every students at ZJC level can understand, analyze and interpret different maps in geography if they are given support by the teacher through remediation. The researchers wish to answer the following questions:

- 1) What is remediation?
- 2) How students are identified and selected for remediation?
- 3) What attitudes are portrayed by teachers and students towards remediation?
- 4) What strategies should be employed in giving students remediation work?
- 5) What are the importance of remediation in the teaching and learning of map work in geography?

## **MATERIALS AND METHODS**

### **Research design**

The research design is defined as, it is the plan for collecting and utilizing data so that desired information can be obtained and it is in two types that is qualitative and quantitative research([www.slideshare.net/./research-design](http://www.slideshare.net/./research-design)). Oyedele (2011) also defines a research design as a plan for selecting objects, research sites and data collection procedures to answer the research questions. According to Willis (2013) in [www.ehow.com>ehow>Education](http://www.ehow.com>ehow>Education) the term "research design" refers to how a researchers puts a research study together to answer a

question or a set of questions. It works as a systematic plan outlining the study, the researchers' methods of compilation, details on how the study will arrive at its conclusions and limitations of the research. A research design can be a plan for gathering data that enable one to answer question. Therefore it describes the procedure for conducting the research by outlining how, when and what is going to be used when carrying out a research.

In this particular study the techniques used to collect data and information include self administered questionnaires, interviews and observation. In this case the researchers used the survey method. In a survey method, data is gathered at a particular point in time with the intention of describing the nature of existing conditions. Survey method is a method of sociological investigation that uses question based or statistical surveys to correct information about how people think and act. According to Oyedele (2011), the aim of a survey is to obtain information which can be analyzed and patterns extracted and comparisons made. This would enable the researchers to analyze and identify the best strategies, proper attitudes of teachers and students and the significance of remediation in the teaching and learning of map work. The survey method allows a lot of educational problems to be investigated or analyzed so as to obtain a critical meaningful conclusion rather than a mere consensus.

### **Population and Sampling**

Population is the group of interest to the researchers that is the group to which he or she would like the results of the study to be generalized. A sample can be defined as some part of a large body specially selected to represent the whole. Oyedele (2011) further states that, "a sample is a proportion of a population selected for further observation and analysis". Sampling is the process by which this part is chosen and it is then taking any portion of a position as representation of that population. The main objective of drawing a sample is to make inference about the larger population from the smaller sample. The research was carried out at Marange high school mainly focusing on Form two geography students. A sample of 20 students and 4 teachers from geography department as well as other 2 teachers from business studies department used to gather information on the effectiveness of remediation. All participants used in the study were randomly selected. Teachers were chosen because they are the ones who teach the students and therefore they observe and identify the impact of remediation on students' performance.

Oyedele (2011) defines random sampling as, "when every member of the sample is selected from the total population in such a manner that all members of the population have the same probability of being selected". Ten students from the class and six teachers from the teaching staff were chosen randomly by the researchers and every teacher and pupil could have the same probability to be selected. The stratified random sampling method was used. Students were arranged according to their performance in map work that is others were very good in map work; others better and others were finding it very difficult. Three students from those who were excelling and four from those who were better who are on average were chosen. The other three obtained from the group of those who were finding it very difficult scoring below 20% frequently. Since map work is mainly done in geography department, large number of teachers was taken from this department and other two from business studies department for investigation purposes.



## **Research instruments**

This section presents the techniques used to obtain data. Research tools used were questionnaires, observations and personal or face to face interviews to obtain the information from both teachers and students.

### **Questionnaires**

From [www.dictionary.reference.com/browse/questionnaire](http://www.dictionary.reference.com/browse/questionnaire) a questionnaire is a list of questions, usually printed, submitted for replies that can be analyzed for usable information. The technique was chosen by the researchers after an examination of its significance as shown below.

The questionnaire method has been chosen because it has some form of privacy in that each individual is entitled to his or her own questionnaire at his or her own time and without being interrupted by the researchers or any other person. The technique is more practical and large amounts of information can be collected from a large number of people in a short period of time and in a relatively cost effective way. Leedy (2011) states that, “questionnaires make it easy for the researchers to collect data which is beyond their reach”. The results of the questionnaires can usually be quickly and easily quantified by either a researchers or through the use of a software package.

To obtain the data, the researchers identified the form two geography classes to be dealt with throughout the course of investigation. Students were given map work exercises on the map work mainly on the 1:50 000 topographical map. A sample of twenty students obtained from three different groups in the class according to their performance levels on which six representatives from these stratus was chosen randomly. Then the selected representatives of the ZJC class were given questionnaires. However, the questionnaire does have its disadvantages. The researchers found out that some respondents were failing to understand the requirements of the open ended questions and gave wrong responses. It is argued to be inadequate to understand some forms of information such as changes of emotions, behavior and attitudes. Phenomenologists state that, quantitative research as in questionnaires is simply an artificial creation by the researchers as it is asking only a limited amount of information without explanation.

### **Personal or face- to- face interviews**

Cohen and Manion (2011) define an interview as, two person conversation initiated by the interviewer for the specific purpose of obtaining information research –relevant information and focused on content specified in research objectives of systematic description, prediction or explanation. Questions are read in a face to face situation while the researchers or the interviewers record the answer. The advantages of personal interviews include that, the researchers had a chance of getting much of what the respondents tend to explore. It encouraged conversation between the researchers and the respondent. Since interviews are flexible and are usually quite probing, this enables the respondents to give their true opinions on the matter being discussed. While interviewing, the questions can be repeated for subject to understand and the interviewer can observe verbal and non-verbal behavior of the respondent hence non-verbal responses can be noted. This method can also allow the researchers repeat questions which the respondent does not understand. Again it is a quick way of getting data. Questions for the interviews for the targeted group were drafted.

Teachers were interviewed on their own convenient time. Respondents were asked verbally by the researchers in friendly manner. The researchers then went on to tally the results and present them.

### Observations

Observation can be defined as the visual study of something or someone in order to gain information or learn about behavior trends or changes. This then allows us to make informed decisions, judgments and allowances based on what has been studied according to [www.ask.com/questions/what-is-observation](http://www.ask.com/questions/what-is-observation). The observation took place over the course of the two terms. The researchers observed the attitudes of teachers and students on remediation and the effects of the remedial education in teaching and learning of map work at ZJC level. The researchers observed the behavior of both teachers and students throughout the two terms towards remedial education in the teaching and learning of map work. The researchers gave Form two class some map work exercises throughout the two terms and was always asking for the students who were facing challenges to come and get the remedial work. Some students did not follow the instruction showing no interest and some followed. For those who were remediated their performance improved very much unlike to those who disliked. Some teachers were not even inviting students for remediation and others assumed that the corrections they give students in the class is best of which it is not effective. Very few teachers were keen to invite students individually to give them remedial exercise in map work. However, sometimes when members realize that they are being observed they tend to behave differently and this will negatively affect the outcome.

### RESULTS AND DISCUSSION

The data was mainly found from both teachers and students to find out the effectiveness of remediation in the teaching and learning of map work at ZJC respectively. Six teachers have been interviewed with four male teachers and two other female teachers. Both have more than two years experience in teaching geography and other commercial subjects such as accounts and commerce. These teachers could also teach ZJC classes involving remediation as their methodology.

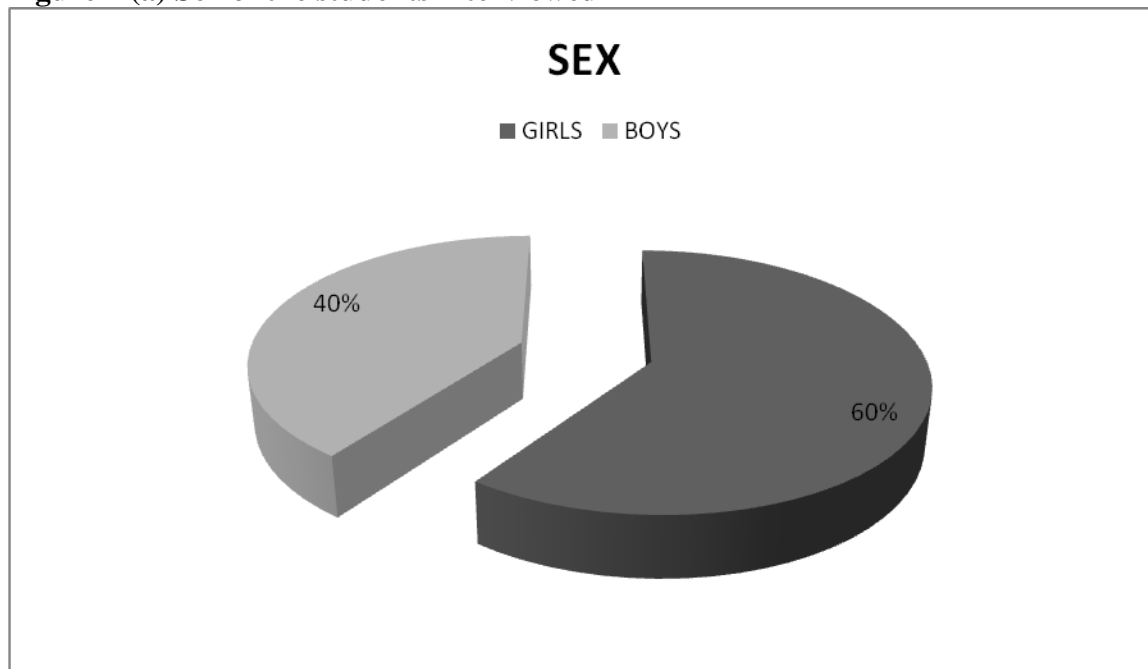
**The table 1: The demographic data on the students interviewed.**

SEX			AGE		
Boys	Number	Percentage(%)	Range	Number	Percentage(%)
	6	60	14-15	5	50
Girls	4	40	16-17	3	30
			18 <sup>+</sup>	2	20
TOTAL	10	100		10	100

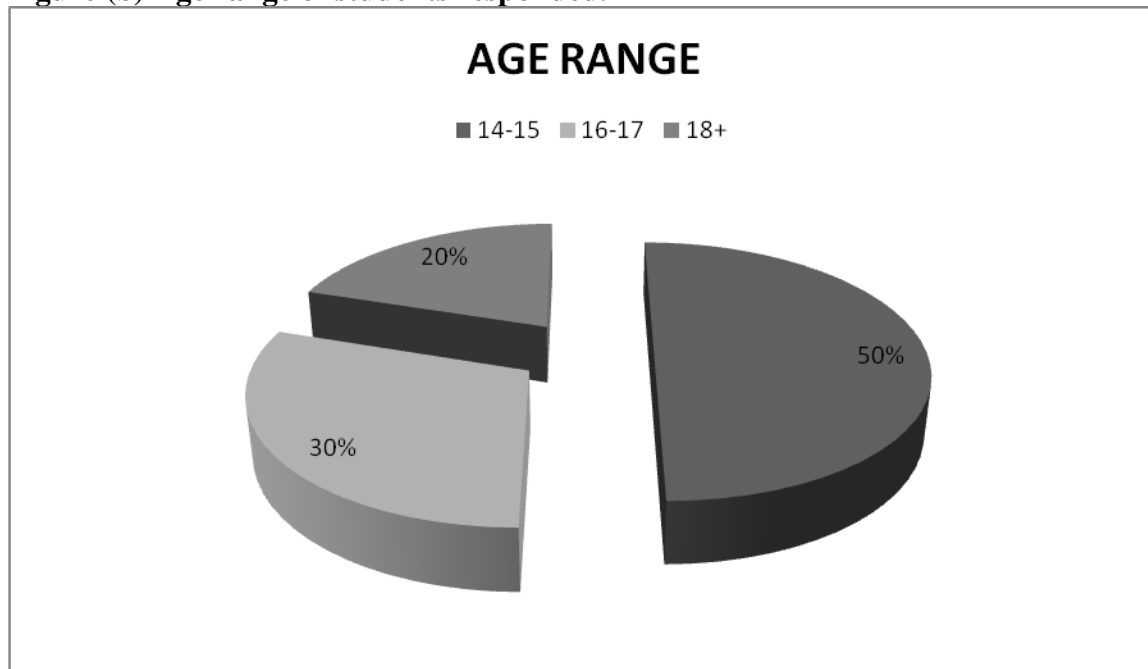
The data shows that the largest percentage that is 60% of the students responded for the questionnaires were girls and the other 40% represent boys. Concerning the age, 50% of the students responded ranged between 14 and 15 years which constitute the largest population of students interviewed. The other 30 % of the students ranged between 16 and 17 years of age and 20% were above the age of 18. This clearly shows that the highest population of the ZJC students is ranged between the age of 14 and 15. Very large population at ZJC level represent the age between 16 and 17 and very few are on the age range 18 and above according to the research. This would help teachers to deal with students according to their

level of understanding based on their age hence remediation would be given to the students according to their cognitive level as supported by Piaget in his cognitive development theory. The information above can further be represented by the pie chart as shown by the following fig.

**Figure 1 (a) Sex of the students interviewed**



**Figure (b) Age range of students responded.**



Students responded well to the questionnaires presented to them. All of these students come from different backgrounds and have different learning abilities as discovered during the research.



## Remediation education meaning and its involvement

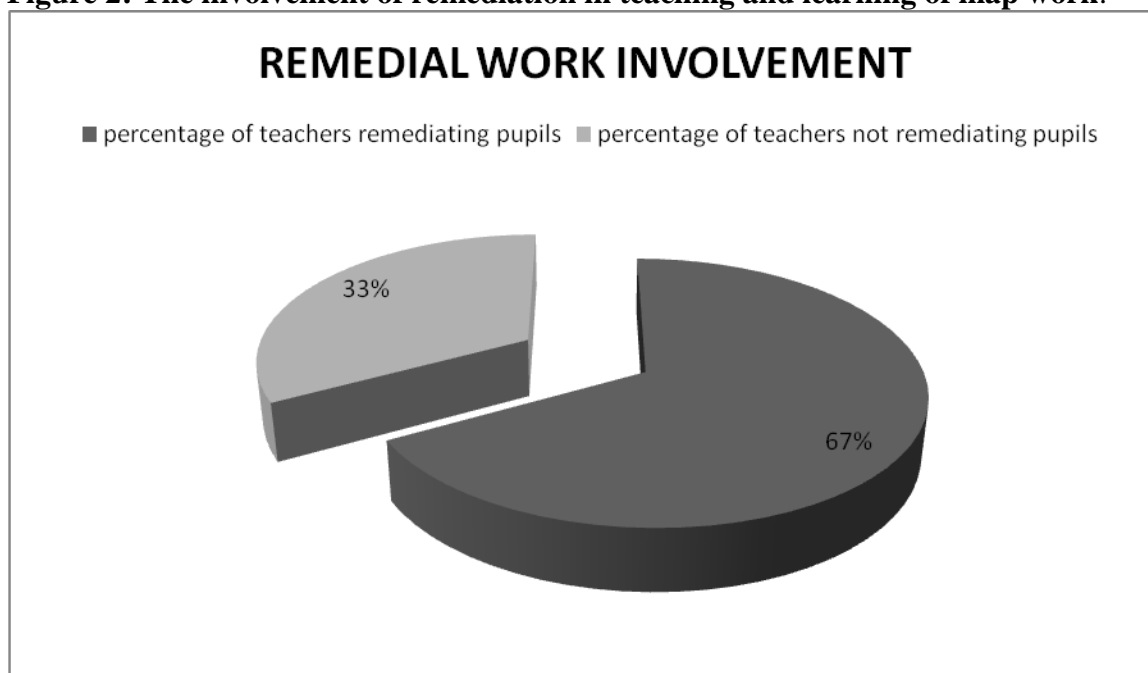
As it has been defined by Garcia (2012) as the education designed to bring underprepared students to expected skill competency, remediation has been adopted and known by both students and teachers. However, other teachers and students could not even know it and its uses. The data obtained about the view of teachers towards remedial work shows that some teachers are being involved in remediation to the students and some are not. The table below shows the number of teachers involving remediation as a teaching method and the number of those not involving remediation as a teaching strategy to insure the academic standards of students are improved.

**Table 2. Number of teachers involved and those not involved in remediating students**

	Number	Percentage (%)
Teachers remediating students	04	67
Teachers not remediating students	02	33
TOTAL	06	100

It can be identified that from the sample of teachers obtained for the interview 67% of them involve remediation as their teaching strategy. However, the other 33% of the teachers could not involve remediation as the teaching technique hence it can be concluded that their understanding about the significance of remediation is very shallow. The obtained data can also clearly shows that those teachers agreed for the remediation of students have a deeper understanding about remediation compared to the 33% of teachers who are not keen to remediate their students. Most teachers usually remediate students orally unknowingly as discovered by the researchers during the interview with those teachers who appeared not to remediate their students. The general view is that, almost 67% of the teachers in the school are involved in remediating their students while the other 33% are not yet exposed to the significance of the remediation exercise but only concentrate on their main lessons. The data can be presented on the following pie chart as well.

**Figure 2: The involvement of remediation in teaching and learning of map work.**



### The selection of students for remediation

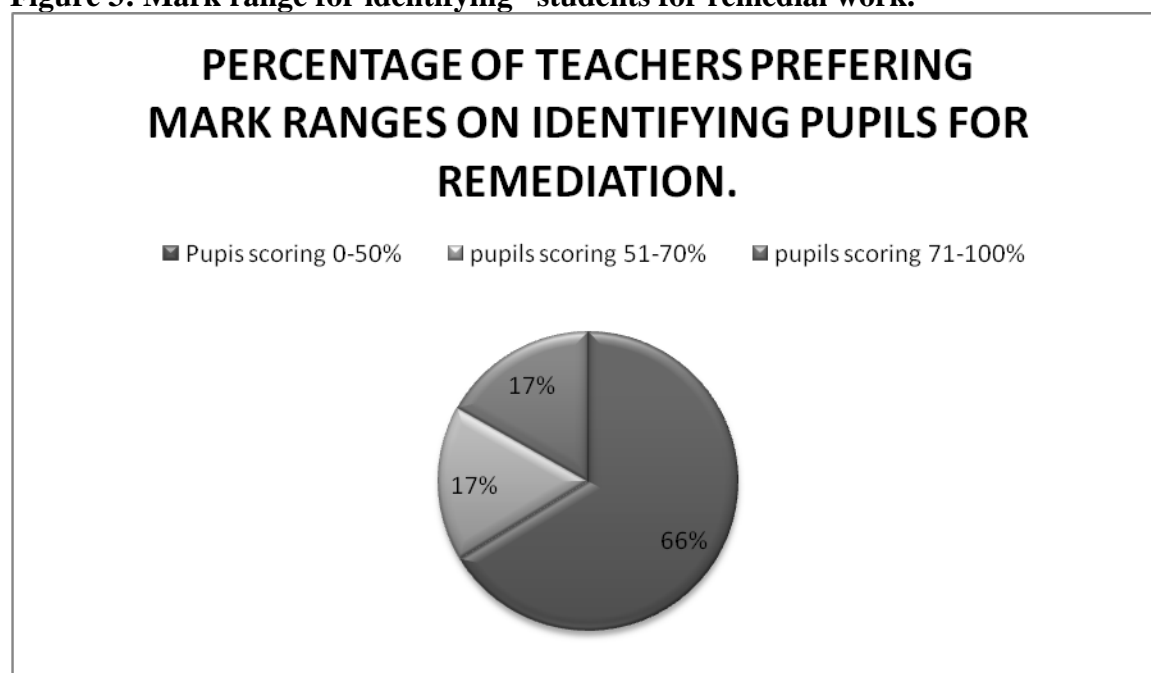
Varying methods have been employed by teachers when identifying and selecting students for remediation work based on the performance of students in the class. The table 3 below shows the strategies employed by teachers in giving remedial work based on the range of marks according to the performance of students in the subject.

**Table 3: The range of marks perceived by different teachers in identifying students for remedial work**

Mark range	Number of teachers	Percentages (%)
0-50 %	4	66.6
51-70%	1	16.7
71-100%	1	16.7
TOTAL	6	100

The table shows that 66.6 % of the teachers target students who score marks ranging between 0 and 50 as this range considered to be the one where students with learning difficulties can be identified who need special education. This range consist the largest number of teachers targeting to remediate students. Teachers who need to remediate students who score above 50% in the class exercise remain fewer with the equivalent percentages for the mark ranges 51 to 70% and 71 -100% according to the study as shown above and on the following pie chart. The number of teacher willing and used to remediate students scoring 51-70 become 16.7% and those need to remediate students scoring 71-100% become 16.7% as well. This indicates that , not all teachers prefer to remediate to remediate only students who score below 50% instead, consider those who have potential have potential and those who excel as the would enable them to boost and keep their standards high. According to the interview with one of the teachers, "..... *the strategy enables those who do well to excel and maintain high standards*". The data can also be presented using the pie chart as shown on fig 4.3 below to give more clarity.

**Figure 3: Mark range for identifying students for remedial work.**



It can be concluded that, most teachers are keen to remediate students who score at or below 50% and these teachers constitute the largest percentage of 67% as shown by the pie chart above. This has been supported by Shield and Morgan (1998) that, `` in selecting students for diagnostic assessment and supplementary teaching priority should be given to those achieve at or below 50%.

### Strategies employed in giving students remedial work

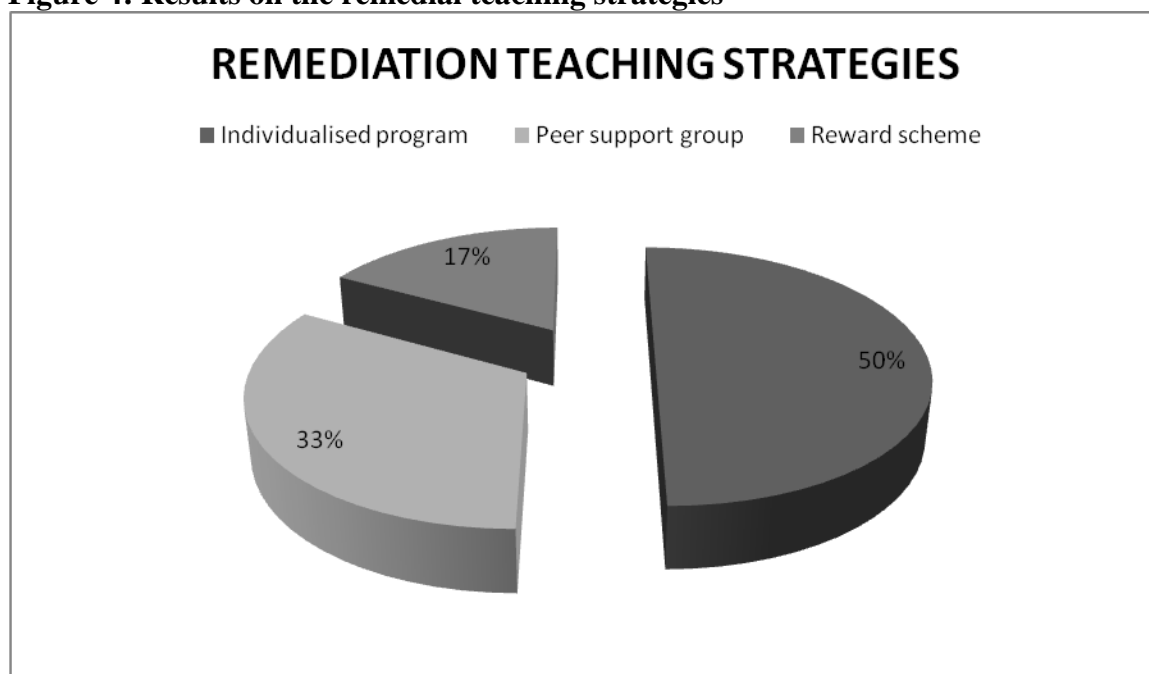
Teachers prefer different remedial techniques that include, the individualized program, peer support group and the reward scheme. The data obtained from the responses made by the teachers on the interview concerning the remedial teaching strategies is presented as follows on table 4

**Table 4: Results on teachers willing to undertake appropriate remedial teaching strategies**

Strategy	Number of teachers	Percentage of teachers(100%)
The individualized program	3	50
Peer support groups	1	17
The reward scheme.	2	33
TOTAL	6	100

Figure 4 below is a representation of the tabulated data above in the form of a pie chart to give a clear vision on the proportion of teachers undertaking a certain remedial strategy.

**Figure 4: Results on the remedial teaching strategies**



The largest percentage of teachers at Marange high school employ the individualized remedial program constituting about 50% of all possible remediation strategies. This could be because of the fact the this strategy is the one being widely accepted and encouraged by the

ministry of education in Zimbabwe as there the encouragement of PLAP which is meant in dealing with individual students. Some teachers prefer the peer support group. This category constitutes 33% of the teachers as shown above.

From the interview with the teachers, teachers are in the notion that, this strategy has a motivational aspect as students motivated by being socializing with their peers and being sharing their ideas with peers especially with those students who excel on their academic work. The reward scheme considered by very few teachers but regarded as a useful strategy and it constitutes about 17% of the teachers. The reason might be the inability of the teachers to reward the students especially financially. It can be concluded that, almost half of the teachers prefer the individualized program and this technique can be regarded as the most efficient and fruitful in improving the performance of students. However the peer support group and the reward scheme should be considered important as well as the remedial teaching strategies. It has been discovered that some teachers tend to employ multiple strategies that is teachers tend to employ both the individualized program, peer support group as well as the reward scheme depending the situation and the particular problem identified from the.

### **The attitudes portrayed by teachers and students towards remediation**

From the investigation made by the researchers on the attitudes of teachers and students towards remedial work, the table below shows the intervals in which students were given remedial work by the teachers.

**Table 5: Intervals on which teachers are giving remedial work students**

	Regular ( at least Once per week)	Irregular( may be once after three weeks)
Number of teachers	4	2
Percentage	66.7%	33.3

It can be identified that the largest percentage of the teachers have a good attitude towards remediation as 66.7% of them remediate their students as shown above with 33.3% of the teachers being reluctant to remediate students. The information is also shown by the following bar graph.

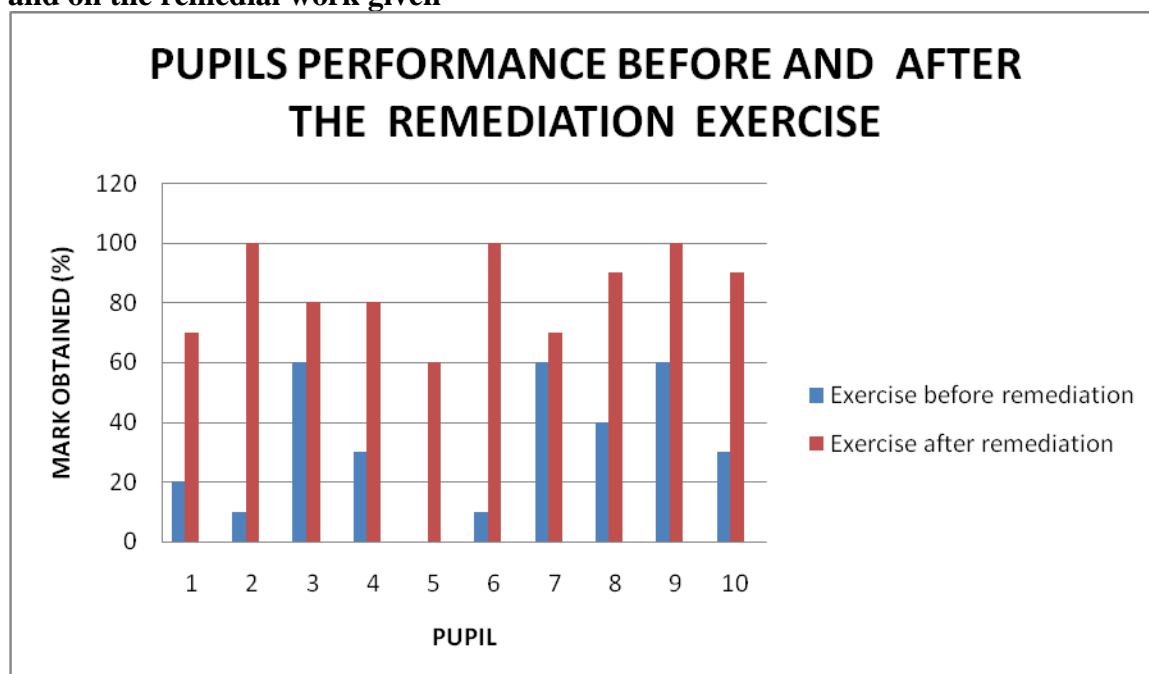
### **The effectiveness of remediation**

To analyze on the effectiveness of remediation, the researchers managed to give a sample of ten students from three different performance levels exercises on map work before remediation and then remediate them after identifying their performance on the given exercise. Students marks on both the exercise work and on the remediation work is shown on the table 6 highlighting the change in students' performance.

**Table 6: Effects of remediation on students' academic performance**

Pupil	1	2	3	4	5	6	7	8	9	10
Exercise mark	02	01	06	03	00	01	06	04	05	03
Percentage	20%	10%	60%	30%	00%	10%	60%	40%	50%	30%
Remedial work	07	10	08	08	06	10	07	09	10	09
Percentage	70%	100%	80%	80%	60%	100%	70%	90%	100%	90%
Possible mark	10	10	10	10	10	10	10	10	10	10

The table shows changes in students' marks on the exercise and the remedial work given for the ten different students from the Form two class. The information on data obtained on the table above can also be shown by the following multiple bar graph in figure 5 below.

**Figure 5: The impact of remediation to the performance of students on both the class and on the remedial work given**

The graphs above depicts that there is the great improvement in all students' performance as shown by the rapid rise of the graph especially on the student number 02, 05 and 06. Student number 02, 07 and 06 showed a greater improvement in their school work from 20% to 100% on student number 02, from 00% to 60% and from 10% to 100% on the student number 06. Even to all other students observed, a great rise in performance has been identified therefore, remediation should regarded as an essential teaching tool as it lead to improved students' performance on their academic achievement.

## CONCLUSIONS

The research findings show that remediation is very crucial in the teaching and learning of map work or any other topic or subject and improves the performance of students. The researchers wanted to find out whether remediation is well known at Marange high school in the teaching and learning process. It has been identified that some students could not accept it and could not know deeply about it but only hear about the word "remediation" which looked fun to them. However, other students were liking and accepted it as a learning session

and discovered its significance in their academic performance. It was discovered that some teachers and students have a very positive attitude toward remedial exercises as indicated by large number of teachers practicing it and students do regularly the remedial work they are given by their teachers en showing that they like it.

Based on the research question that, “how students are identified and selected for remediation”, the researchers found out that , for effective remediation , students who score at or below 50% must have the first preference to enable them catch up with others. However, those who score above 50% should also be remediated to enable them maintain and improve their standards.

The individualized program, peer support group and the reward scheme are the strategies discovered that can be employed and this answered the research question which were asking for the strategies which should be employed in giving students remedial work. It is these strategies that can determine the effectiveness or successfulness of remediation. These strategies can be employed orally or as written works. From these strategies, the individualized program is the most effective in improving the academic performance of students according to the research.

The other research question aimed at finding out whether remediation is important in the teaching and learning of map work in geography. It has been discovered that, if it is effectively and positively handled, remediation can be the best teaching and learning methodology which can greatly improve students’ academic performance and their overall attitude towards their school work hence teachers, parents and students should always consider it as a useful learning technique.

## **AUTHORS' CONTRIBUTIONS**

The research has succeeded in establishing that, if properly managed with positive attitude, remediation improves the academic performance of students. It is due to this establishment that the researchers recommend the following.

- (i) If both teachers and students are knowledgeable enough about remediation, the teaching and learning activity can be done effectively.
- (ii) The attitude of teachers and students towards remediation determines its successful implementation. Therefore it is recommended that, teachers and students should develop positive attitudes towards remedial education.
- (iii) When electing students for remediation , teachers should target mainly students who scored 50% or below.
- (iv) There are different strategies for remediation but both teachers and students should adapt to the individualized program as it is fundamental and helps to quickly improve the performance of students.
- (v) Remediation or developmental education is very important in the teaching and learning of map work and teachers must employ it regularly.

Shortages of time, materials and lack of corporation from the members of staff have been experienced. It can be recommended that, remedial teachers should be patient enough, find their own materials to use for remediation and do the remedial work with their students during break time, lunch time, weekend and any other free time to avoid disturbance of the lessons since remediation itself is not included in the curricular and cannot be showed on the school time table.



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