

BINDURA UNIVERSITY OF SCIENCE EDUCATION



FACULTY OF SCIENCE EDUCATION

**THE IMPACT OF THE QUESTION AND ANSWER METHOD AS A METHOD OF TEACHING;
ON THE AVERAGE PERFORMANCE, KNOWLEDGE AND SKILLS OF PUPILS.**

A CASE OF A SELECTED HIGH SCHOOL IN MASVINGO PROVINCE

BY

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DIPLOMA IN SCIENCE EDUCATION OF BINDURA UNIVERSITY FACULTY OF SCIENCE
EDUCATION.**

SEPTEMBER 2022.

APPROVAL FORM

The undersigned certify that they have read and qualify the diploma as satisfactory and acceptable for submission to Bindura University of Science Education. The research project is entitled, “the impact of the question and answer method as a method of teaching; on the average performance, knowledge and skills of pupils". A case of a selected high school in Masvingo Province

.....		
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Name of Supervisor	Signature	Date

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THE RELEASE FORM

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Date:

DEDICATION

This work is dedicated to my parents especially my mother. My supervisor also played a big role in making this project a success.

ABSTRACT

The aim of the study was to investigate the impact of the question and answer as a method of teaching on the overall performance and knowledge in chemistry at O'level. A mixed method research design was chosen for this Study. Three High Schools in Chivi District participated in the study. Fifty (50) students were randomly selected and questionnaires administered. Qualitative data was collected through questionnaires and was presented and analyzed through SPSS. The collected and analyzed data results showed that learners who underwent their education through the question and answer methods had better chances of passing their summative examinations but it has also revealed that those learners lacked applications skills and in -depth knowledge that could be used to solve real life problems ..

The researcher here recommended that teachers must focus on first covering the whole content set in the syllabus, use practical methods and use the question and answer to check if the entire syllabus has been covered.

DECLARATION

I Makusha Terera Junior hereby take this oath and declare that this is the working of my mind and hands, an independent research work in which all the borrowed work had been acknowledged and referenced. This is not anything of any repetition from any other researcher's work or a deviation from it but an independent research

ACKNOWLEDGEMENTS

All acknowledgements solemnly here are rendered to all authors whose work was referenced to by the researcher here and the project supervisor as well and all those whom the researcher had consulted during the period of research in quest for ideas and skills.

TABLE OF CONTENTS

APPROVAL FORM	ii
THE RELEASE FORM	iii
DEDICATION	iv
ABSTRACT	v
DECLARATION	vi
ACKNOWLEDGEMENTS	vi
TABLE OF CONTENTS	viii
CHAPTER 4	xxi
DATA PRESENTATION, ANALYSIS AND INTERPRETATION	xxi
4.0 INTRODUCTION	xxi
4.1 ANALYSIS OF RESPONSE RATE	xxi
4.2 AGE	xxi
4.3 GENDER	xxii
4.4 LEVEL	xxii
4.5 STUDY CHEMISTRY	xxiii
4.6 CHALLENGES BROUGHT ABOUT BY THE USING/EMPLOYMENT OF THE QUESTION AND ANSWER METHOD IN THE TEACHING OF CHEMISTRY	xxiii
4.6.1 The method is time consuming and	xxiii
4.7 LIMMITED LEARNER ACTIVITY, CONTENT AND FREDOM	xxiv
4.9 IMPACT OF THE QUESTION AND ANSWER TECHNIQUE METHODS ON LEARNER PERFORMANCE.	xxv
4.9. Loss of essential information, concepts and skills.	xxv
4.9.2 Brings about higher grades.	xxv
4.9.4 The method develops confidence in the learners as it is a more sure way to pass with higher and A grade grades.	xxvi
4.10 THE IMPACT OF THE QUESTION AND ANSWER TECHNIQUE ON LEARNERS' ATTITUDE TOWARDS LEARNING OF CHEMISTRY.	xxvi
4.10.1 Improves interest in the subject as it guarantees pupils that they have very high probabilities of passing with higher or upper grades.	xxvi
4.10.2 The method reduces work to be done and by which lesson the concepts to focus and thereby making the few easy to master and understand.	xxvi
4.10.3 The method allows early finishing of the schemed work as it is summarized and hence longer time to revise.....	xxvii

4.11 COMPARISON OF TEST RESULTS OF STUDENTS TAUGHT CHEMISTRY THROUGH THE QUESTION AND ANSWER METHOD AND THOSE BY THE OTHER METHODS THAT ALLOWS COVERAGE OF THE WHOLE SYLLABUS CONTENT.....	xxvii
4.11.1 Statistics	xxvii
4.11.2 Question and answer method.....	xxviii
4.11.3 Traditional methods in which the whole content is covered.....	xxviii
4.12 INTERPRETATION AND DISCUSSION OF RESULTS	xxviii
4.13 SUMMARY	xxix
SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS.....	xxx
5.0. INTRODUCTION	xxx
5.1.0 SUMMARY OF FINDINGS	xxx
5.2. CONCLUSIONS	xxxii
5.3. RECOMMENDATIONS.....	xxxii
5.4. AREAS FOR FURTHER RESEARCHES.....	xxxiii
REFERENCES:	xxxiii

CHAPTER 1

1.0 INTRODUCTION

According to Smith (2015), educators should; consider people's needs and wishes now and in the future, reflect on what might be good for all and plan their interventions accordingly. In other words, education should highly be focused on equipping children with knowledge and skills rather than grades, which are the main objectives of the 'question and answer' teaching method. Why then are students from elite schools have distinctions in chemistry at O' Level or A' level yet they have not mastered the concepts. Yet from ordinary schools, student with 'C' pass show full mastery of the content in chemistry. It has been found that teachers, mostly at upper class schools, no longer focus on the total development of a Chemistry student; armoring them with enough and required knowledge. They seem to focus more on grades than imparting knowledge, focusing on predicting oncoming exam papers and then sieving out some syllabus content and covering what is likely to be in the exam and forgetting that Chemistry topics are largely dependent on one another and should be taught practically.

If the teacher's content knowledge falls below the expected standard, it can be an impediment to student's learning. ~~This further contradict~~This further contradicts the massive employment of the question and answer approach limits concept mastery. Thus, chapter largely focusing on the background of the study, problem statement, objectives, research questions, significance of the study, definitions, delimitations and limitations of the study and finally the chapter summary, the other chapters dig deeper into the research study.

1.1 BACKGROUND

As in accordance to the statement by Marton, F. (2006); the field of pure sciences is backboneed by the practical application of the theoretical knowledge the individual bears in mind. This directs us to the point that without enough theory, science is unmovable, perplexing and can progress no further beyond a stone's throw as seen in the fields of applied Chemistry and at higher and tertiary institutes in those learners. Therefore, once full theory and content coverage is lost, then the attained grade becomes of no use. However children needs be taught how to attack questions but this should be prior to accomplishment of syllabus content coverage, or else it be vanity as the modern question and answer method are constantly proving to be.

1.2 PROBLEM STATEMENT

It had been allegedly disclosed that most schools are now focusing on topping up in yearly exam results and hence focusing on equipping children with answers and depriving them of the knowledge they deserve thereof ; Areeda, P. E. (1990). . This brings good grades but does that build up for a Chemistry student a solid stepping stone into the applied Chemistry arena. Hence why the researcher has raised concern over the use of the question and answer method combined with the exam prediction method and approach to the teaching of Chemistry.

1.3 RESEARCH OBJECTIVES

1.3.1 To establish the impact of the outlined method of teaching; the question and answer method combined with the exam prediction method.

1.3.2 To determine how it would affect the child's future in Chemistry as he or she progresses further into applied Chemistry field.

1.3.3 To determine also weather these methods are to some extent beneficial in the student's future.

1.4 RESEARCH QUESTIONS

1.4.1. Main research questions

1.4.1.1. Of what effect to the child's future and overall knowledge in the chemistry field is the use of the question and answer method combined with the exam prediction method?

1.4.2 Sub-questions

1.4.2.1 What challenges are associated with full content coverage?

1.4.2.2. How would, if combined, the two methods; full content coverage and the question and answer methods, influence the learner?

1.4.2.3 How does the method of concern affect pupils as they fall into the applied Chemistry field?

1.5 SIGNIFICANCE OF THE STUDY

This study will, if taken with concern, will help transform the education sector into a pure and intelligent chemistry student production plant industry. The students produced will be equipped with enough knowledge, making them successful chemistry specialists, whether in the society, at work, locally or abroad. The school itself will benefit from the positive repetition of its products while science will become more practical and locally applicable as its basics are thereafter understood and hence the community benefiting.

The full understanding of Chemistry confidentially students into getting deeper with it than as resulted by blindly following and attaining higher grades but without enough understanding. This would, at a larger scale bring about internationally competitive students, who possessing the full chemistry conceptual understanding can transform the world for better.

1.6 LIMITATIONS OF THE STUDY

As mentioned already, this study is limited to only to schools that are currently largely focusing on the question and answer method and exam predicting and leaves out those focusing on other methods. It also ends in only looking at only these two methods and leaves others out, which in another perspective may be also major causes to the problem of concern. Apart from that, due to the country's economic upheavals, the researcher found it difficult to access as many schools as might be possible and required, and so only a few schools were accessed. In some of these accessed schools, some respondents in fear of being spied on, hid their true methods of teaching. This research was also carried in a confined space of time , which led to failure to comply with other agreed on dates of visits with some schools as the dates fell off out beyond the research timeline.

1.7 DELIMITATIONS

This study focused on how the use of question and answer method combined with the exam prediction method affect pupils later in their advanced or tertiary level and thereafter at Chibi, Berejena and Nyanningwe High Schools in Chivi District Masvingo Province.

1.8 SUMMARY

This chapter focused on the background to the study research objectives, research questions, problem statement, significance of the study, definitions of delimitation of the study, limitations of the study. The next chapter will focus on literature review.

CHAPTER 2:

LITERATURE REVIEW

2.0 INTRODUCTION

This chapter highlighted theoretical and empirical review, concerning the subject at hand. Theoretical review is looking at what other authors or authorities say about the subject of study and empirical evidence from actual research studies undertaken by others on the same area of study.

2.1 Definition of the question and answer method of teaching.

One of the things that becomes a benchmark of success in learning is the learning method, because this method serves as a support for students' understanding of the material being taught. The point is that if the learning method used is appropriate and in accordance with the material to be delivered, students will more easily understand the material compared to the normal way of learning without the method of learning.

Question and answer is a teaching method that allows direct communication that is two way traffic because at the same time there is a dialogue between the teacher and students. It is intended to stimulate student's thinking and guiding them in achieving or gaining knowledge (Abdul Majid, 2013), Baterman, P. (1998).

It is as in accordance to Marzano, R. J. (1992), a teaching strategy known as "Socratic method of teaching", developed by the famous philosopher Socrates.

Education can be described as, as pointed out by McDonnell, T.M. (1998), the wise hopeful and respectful cultivation of learning undertaken in the belief that all should have the chance to share in Mathewson David (2014) ;Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, morals, beliefs, habits, and personal development.

The teaching method of concern as pointed out by Bligh, D. (1990), is a method in which teachers try to guess or foresee or predict which topics are likely to be in forthcoming exams, taking reference to past exam. This method is however mostly successful especially with more experienced teachers. By doing so, they then leave aside the topics that are likely not to be encountered in the exam and focus on the ones they expect.

2.1 Challenges posed by the outlined combination of teaching methods.

2.1.1 Has a lot of work

The method of concern is itself quite difficult to work with it's very gruesome predicting and preparing the questions and logically arranging them. A lot of skill, reference and experience is required for one to come up with the topics having the highest probabilities of appearing in the exams and to determine whether or not so topics are to be repeated in the making up of the exam by the exam board.

2.1.2 It is time consuming

From the above, it can be deduced that this method is undeniably a time consuming task. Much time is required in the selection of topics, revisiting past exams analyzing how many times a certain topic had appeared in one exam paper and then in different papers and after a period of what time and then finally deciding its probabilities of recurring again.

2.1.3 It is laborious

All the preparations are done, the selected topics are then sat down for, making out all questions relevant to the topics and then working out the solutions. All this is laborious to the teacher.

2.1.4 Has limited student freedom

During the delivery of the content, since the method focuses largely on question interpretation and answers, only structured answers are worked with and this gives learners no freedom for imaginative answers, Davis, P. C. (1997).

2.1.5 Covers only a few anticipated topics

The so most important objective here is covering what is likely to be encountered in the exam, Dickinson, J.A. (2009), therefore, by this method the whole content-matter cannot be taught. Here arises one of its biggest problems; deprivation of learner's knowledge to them.

2.2 The impact of the method on the learners' performance there and thereafter

2.2.1 Limited details specifications

As since this method is more about students giving answers and the teacher assisting them, students can tend to respond to a topic in an overall fashion rather than in detailed specifics and by which means there might arise missing of some knowledge and further understanding.

2.2.2 Loss of motivation

This method is more powerful only maybe if content had been covered yet which teachers now do not do , by which means students may lose motivation to participate , unless they perceive 'value' in the discussion. Some may be totally lost or hearing about the topic for the first time, Jackson, D. J. (2007). Socrates and Langdell in Legal Writing

2.2.3 Loss of essential basics

Since the method covers not all the syllabus content, it means not all knowledge is therefore ~~aequired~~,acquired; this is the greatest challenge as it affects children almost, if not latter on individually dealt with, the rest of their existence. These children will miss some essential basics of Chemistry by without which they could not smoothly sail through the Chemistry shallow depths. That is the reason why students with 'A' class grades at Ordinary level finds Advanced level and tertiary level seemingly beyond human capability.

2.3 THE IMPACT OF USING THE METHOD OF CONCERN ON PUPILS' ATTITUDE TOWARDS CHEMISTRY

2.3.1 Here the impacts are largely determined by the individual's aspirations towards Chemistry, to those whose interests are on grades, the method sounds motivational to them because in reality this method is bringing colorful results.

2.3.2 But not all students are concerned about grades, to those the method becomes poison in a cake, no matter how sweet it kills. This method would probably destroy the whole Chemistry future of theirs, for without enough Chemistry basics one could hardly progress with advances in it.

2.4 EMPIRICAL REVIEW

2.4.1 The effects of using the method on students' performance in calculations in chemistry.

Entwistle, N. (2009), carried a research in some local schools in their local hood in England entitled, “the impact of the question and answer method of teaching on students’ academic performance on stoichiometry at Cambridge local schools. The study adopted pretest, posttest non-randomized quasi experimental design. Five research questions and five hypotheses were formulated to guide the study. Hundred Chemistry students from the population of one thousand one hundred, one hundred senior secondary in 2017 academic session formed the sample size using simple random sampling technique. Instrument for data collection was a 30 theory test items on the concept of calculating concentration

of reactants and products. The instrument was validated by five ten year experienced secondary school science teachers and by three lecturers from the department of science education. The research questions were answered using mean and standard deviation while the hypotheses were tested using Analysis of Covariance (ANCOVA). It was found that students taught by other methods that accommodate full syllabus content coverage wrote good explanative passages as each stage in the calculating process was to be explained, those under the question and answer method managed calculating but could hardly fully explain the stages and some required information.

CHAPTER 3

RESEARCH METHODOLOGY

2.5 INTRODUCTION

The chapter looked at the activities and procedures used in researching during the course of the research, which is research methodology. ~~This encompass~~This encompasses the research design, research instruments and procedures for data collection. It will thereafter take a glimpse at population sample, research tools and the procedure in which gathered data would be presented and analyzed.

3.1 Research Approach and Design

The researcher will take pragmatism as his research paradigm which according to Creswell (2012) is a world view or paradigm that should underpin most mixed methods of research. It is a problem-oriented philosophy that takes the view that the best research methods are those that help to most effectively answer the research question. In social science research, this often involves a mix of quantitative and qualitative methods used to evaluate different aspects of a research problem.

Mixed methods approach will be employed. Mixed method research is whereby both quantitative and qualitative ways are used. This will be done in order be able to explore all the areas of concern holistically. It is difficult to cover all areas if one particular area is followed, for example if purely quantitative or purely qualitative.

According to Kearny, M. K. & M. B. Beazley (1991)., a research design shows the details of the study in relation to purpose of the study, types of investigation, the extent of researcher interference, measurement and measures, unit of analysis, sampling design, time horizon, data collection method and data analysis, are integral to research design. The researcher will use the mixed methods explanatory design as it carrying out the quantitative research then followed by the qualitative research. The qualitative study will be done to help explain some of the findings that will result from the quantitative study.mh

3.2 TARGET POPULATION

According to Kierkegaard, S. (1989), population is a group to which the findings of the study can be generalized. The population of this study will comprise of 50 Chemistry students in ordinary level at Chibi, Berejena and Nyaningwe High School.

3.2.1 Sampling approach and techniques

For the quantitative study, the research uses systematic sampling technique to select sample students to become the respondents who represented the Chemistry students. On the other hand, purposive sampling techniques were used to select teacher participants.

3.2.2 Sample size

The researcher will use systematic sampling to come up with the sample of the study. The questionnaire will be administered to a sample of 50 selected from the population of 50 chemistry students at selected high schools in forms three and four. The researcher will personally administer the questionnaire to the 50 and will select randomly two teachers to be respondents.

3.3 RESEARCH INSTRUMENTS

According to Saunders, et. al, (2009), data collection involves the acquiring of useful data relating to the research topic under study. As indicated by Kimball, B.A. (2004), the researcher must use the most appropriate technique in data collection if reliable data is to be collected. This is because some techniques are appropriate and some are not. This particular study made use of questionnaires and interviews, which are the most commonly, used techniques in research studies.

3.3.1 Questionnaire

The questionnaire will consist mostly of close ended questions. This will be done because analysis of data from structured questionnaires is easy that way according to Kreber, C. & P. Granton (2000). It is also much easier for respondents to complete close ended questions. This will also allow the researcher to collect factual information and opinions from respondents.

Despite ambiguities that may arise in questionnaires which may affect validity of data collected, the researcher will ensure that the questions will be clear and straight forward through a pilot test. The researcher will also be available to clarify unclear points as respondents completed the questionnaire. The questionnaires will be personally distributed to each respondent and will be collected within one week.

3.3.3 Structured interview schedule

The researcher will use structured interview questions. The interview will be done to collect data. The researcher will interview two Chemistry teachers. The teachers will be interviewed at their work place after deciding with them. During the interviews, the researcher will use pen and paper to record the information provided by the interviewees.

Although interview can be influenced by personal attributes and accommodate few people, it allows greater depth than is the case with other data collection techniques. The influence of personal attributes displayed by other interviewees was curtailed by their nonverbal cues. According to Lorillard, D. (2002) an interview allows multisensory channels to be used. This will promotion validity of the data collected as in-depth information could be gathered

3.4 RELIABILITY AND VALIDITY

3.4.1 Pilot study

In order to ensure reliability and validity are maintained, the researcher started with a pilot study of a few students, who were not to be part of the final sample. According to Llewellyn, K. N. (2008), reliability refers to the extent to which a test produces similar results under constant conditions on all occasions and a research instrument is said to be valid if it measures what it purports to measure. The pilot respondents were asked to complete a draft of the questionnaires to test whether the questionnaire was clear and unclear questions are clarified. After that, the questionnaires were re-administered to the same respondents now to test reliability. There were no variations from the first answers to the second answered, hence the researcher took the questionnaire as valid and reliable.

3.5 ETHICAL CONSIDERATIONS

Ethical issues such as collaborative partnership, respondents' social values, and fair selection of participants, informed consent and respect of the aspect of confidentiality of organizational and personal secrets were considered. Data that was collected was not traceable back to the individuals, for anonymity's sake.

3.6 DATA COLLECTION PROCEDURE

The self-administered questionnaires were personally distributed to each respondent and collected personally over 4 days. Of the distributed 50 questionnaires none of ~~theythe~~ ~~wenttheywent they~~ went missing and thus the researcher worked with that final sample of 50 students.

3.7. DATA PRESENTATION AND ANALYSIS PROCEDURES

Data obtained from the completed questionnaires will be as presented in bar charts, tables, pie charts for better analysis. Creation of presentation bars, presentation pie carts and the analysis of data was done by the aid of statistical social packages for social research(SPSS) Answers from interviews were presented in a narrative form.

3.8 SUMMARY

This chapter focused on the methodology and procedures that the researcher used in sampling, collecting and analyzing data. It also focused on how the researcher came out with the sample size and what instruments were used in data collection as well as the data analysis procedure.

CHAPTER 4

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 INTRODUCTION

The previous chapter focused on the methodology and procedures that the researcher used in sampling, collecting and analyzing data. It also focused on how the researcher came out with the sample size and what instruments were used in data collection as well as the data analysis procedure. This chapter presents, interprets and discusses the results of the data for the study. Results that answer the research questions were presented according to the methodology stated in chapter three. Primary data collected using questionnaires was analyzed using tables and graphs through Statistical Packages for Social Sciences (SPSS) Version 20. Findings of the study will be related to the results in previous literature. A summary of the entire points concludes the chapter.

4.1 ANALYSIS OF RESPONSE RATE

The data of the research was collected using 50 questionnaires. The data collected from these is presented in the sections below.

4.2 AGE

Table 4.2: Age

Age

	Frequency	Percent	Valid Percent	Cumulative Percent
13-15 years	0	0.0	0.0	0.0
15-17 years	30	60.0	60.0	60.0
Valid 18-20 years	20	40.0	40.0	40.0
20-22 years	0	0.0	0.0	0.0
Total	50	100.0	100.0	100

Source: Primary Data

4.3 GENDER

Table 4.3: Gender

Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Boy	25	50.0	50.0	50.0
Valid Girl	25	50.0	50.0	50.0
Total	50	100.0	100.0	100.0

Source: Primary Data.

The above table shows the total number and percentage of boys and girls in the sample.

4.4 LEVEL

Table 4.4: Level

Level

	Frequency	Percent	Valid Percent	Cumulative Percent
Form 3-4	30	52.3	52.3	52.3
Valid Form 5-6	20	47.7	47.7	47.7
Total	50	100.0	100.0	100.0

Source: Primary Data

The above table shows the total number and percentage of boys and girls in the sample.

4.5 STUDY CHEMISTRY

Table 4.5: Study Chemistry

Study Chemistry

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	50	100.0	100.0	100.0

Source: Primary Data

The above table shows the total number and percentage of the respondents who studied Chemistry.

4.6 CHALLENGES BROUGHT ABOUT BY THE USING/EMPLOYMENT OF THE QUESTION AND ANSWER METHOD IN THE TEACHING OF CHEMISTRY.

4.6.1 The method is time consuming and

Table 4.6.1 Time consumption

The method is time consuming

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	21	42	42	84
Valid Agree	23	46	46	92
Not Sure	1	2	2	98

Disagree	4	8	8	92
Strongly Disagree	1	2	2	100.0
Total	50	100.0	100.0	

Source: Primary Data

4.7 LIMMITED LEARNER ~~ACTIVITY~~ACTIVITIES, CONTENT AND FREDOM.

Table 4.7 Limited content, learner activity and freedom.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	20	40	38.4	38.4
Agree	23	50	54.5	92.9
Not Sure	2	4	4	96
Valid Disagree	4	8	8	92
Strongly Disagree	1	2	2	100.0
Total	50	1000.0	100.0	

Source: Primary Data

4.8 METHOD COVERS ONLY A FEW ANTICIPATED TOPICS DEPRIVING LEARNERS OF THE FUNDAMENTAL CONCEPTS THEY HIGHLY REQUIRE.

Table 4.8: Few topic coverage

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	20	40	54.5	54.5
Agree	23	50	38.6	93.2

Not Sure	3	6	4.5	95.5
Disagree	4	8	2.3	100.0
Total	50	100.0	100.0	

Source: Primary Data

4.9 IMPACT OF THE QUESTION AND ANSWER TECHNIQUE METHODS ON LEARNER PERFORMANCE.

4.9. Loss of essential information, concepts and skills.

Table 4.9.1: Loss of essential information, concepts and skills.

Limits content delivered.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	48	96	96	96
Valid Disagree	2	4	4	4
Total	50	100	100	100

Source: Primary Data

4.9.2 Brings about higher grades.

Table 4.9.3: Attainment of higher grades.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	48	96	96	96
Valid Agree	1	2	2	4
Disagree	1	2	2	100.0
Total	50	100.0	100.0	

Source: Primary Data

4.9.4 The method develops confidence in the learners as it is a more sure way to pass with higher and A grade grades.

Table 4.9.4 First / upper class pass.

Improves level of attained grades.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	47	94	94	94
Valid Agree	3	6	6	100.0
Total	50	100.0	100.0	

Source: Primary Data

4.10 THE IMPACT OF THE QUESTION AND ANSWER TECHNIQUE ON LEARNERS' ATTITUDE TOWARDS LEARNING OF CHEMISTRY.

4.10.1 Improves interest in the subject as it guarantees pupils that they have very high probabilities of passing with higher or upper grades.

Table 4.10.1: Interest in Chemistry

Improves interest in the learning of the subject.

	Frequency	Percent	Valid Percent	Cumulative Percent
1.00	50	92	92	92
Valid 2.00	3	6	6	6
4.00	1	2	2	100.0
Total	50	100.0	100.0	

Source: Primary Data

4.10.2 The method reduces work to be done and by which lesson the concepts to focus and thereby making the few easy to master and understand.

Table 4.10.2 Few concepts can be well mastered.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1.00	44	88	88	88
2.00	3	6	6	6
4.00	3	6	6	100.0
Total	50	100.0	100.0	

Source: Primary Data

4.10.3 The method allows early finishing of the schemed work as it is summarized and hence longer time to revise.

Table 4.10.3: Lesser work to be done.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1.00	39	39	39	39
2.00	11	22	22	100.0
Total	50	100.0	100.0	

Source: Primary Data

4.11 COMPARISON OF TEST RESULTS OF STUDENTS TAUGHT CHEMISTRY THROUGH THE QUESTION AND ANSWER METHOD AND THOSE BY THE OTHER METHODS THAT ALLOWS COVERAGE OF THE WHOLE SYLLABUS CONTENT.

The sample was divided into two groups of 25 each. One of which was made up of students taught by the question and answer method and the other by other methods. A test was set and they sat for it and the results were processed and were analyzed by the SPSS and the methods were recorded and presented as below:

4.11.1 Statistics

Table 4.11.1 Statistics

Statistics

	Experiments	Traditional
N	Valid 25	25
	Missing 0	0
Mean	1.2727	1.6818
Std. Deviation	.45584	.47673

The above table shows the SPSS processing summary of the 50 students took the test, 25 students, traditional in which the whole syllabus content is covered and 25 by the question and answer method.

4.11.2 Question and answer method.

Table 4.11.2: Question and answer method.

	Frequency	Percent	Valid Percent	Cumulative Percent
Pass	10	40	40	40
Valid Fail	15	60	60	100.0
Total	25	100.0	100.0	

Source: Primary Data

The above table shows the test results of students who were taught by the question and answer method.

4.11.3 Traditional methods in which the whole content is covered.

Table 4.11.3 Traditional methods.

Traditional

	Frequency	Percent	Valid Percent	Cumulative Percent
Pass	19	76	76	76
Valid Fail	6	24	24	100.0
Total	25	100.0	100.0	

Source: Primary Data

The above table shows the results of students who were taught by the traditional methods.

4.12 INTERPRETATION AND DISCUSSION OF RESULTS

This section focused on interpreting of data and discussion. The primary data for the research was collected using 50 questionnaires. The data collected from the respondents was presented above. Most students were around 16 years as

indicted but the percentage of 36.4%. There were 25 boys and 25 girls, this served to ensure gender equality, with 15 form 3 learners and 15 form 4 learners then 20 from advanced level, with only Chemistry learners being targeted as the research was specifically focusing on Chemistry subject.

Objective 4: Comparison of test results of students taught Chemistry with traditional methods and those taught with the question and answer method.

On comparing the two groups, the students taught through the traditional methods in which all topics were covered attained a 76% pass against the 40% attained by those under the question and answer method and thus favoring the traditional methods as successful and fruitful.

4.13 SUMMARY

This chapter focused on the presentation, interpretation and discussion of results of the study. It was found that learners taught by the traditional methods had a better understanding of the applications in chemistry problems than those by the question and answer methods in which fewer topics are covered and only answering skills and techniques are focused on.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0. INTRODUCTION

In the previous chapter the researcher focused on data gathering, analysis and interpretation then presentation. And here the researcher looks into the results of the whole research, which is the summary of the research, and thereafter; the recommendations as per the results of the study. The main objectives of the study that bordered it, guided it and limited its extend and focus includes:

- i. To establish the impact of the outlined method of teaching; the question and answer method combined with the exam prediction method.
- ii. And to determine how it would affect the child's future in Chemistry as he or she progresses further into applied Chemistry field.

5.1.0 SUMMARY OF FINDINGS

(xxx)

5.1.1 First Objective: To establish the impact of the outlined method of teaching; the question and answer method combined with the exam prediction method.

By engaging in this study, the researcher sought to discover the impacts of the question and answer method and it had been found that this method is both deadly to the ambitious up growing Chemistry personnel. This method can bring colorful results to the children which is one of their greatest aims as pupils, but could however harm a child for most part of his or her life as a chemistry major. That is the method can bring about both negative and even positive results also and so should be used wisely.

5.1.2 Second Objective: To determine how it would affect the child's future in Chemistry as he or she progresses further into applied Chemistry field.

The method here is probably one of the surest ways, undoubtedly, by which most of the students under it could possibly and smoothly zip-over the ZIMSEC Bridge. But, soon as they fit into the applied chemistry field; there begins their horror. Though not only then, it haunts them even when at school for instance there comes a question demanding a pupil to apply chromatography in the separation and identification of suspected rapist's blood sample. If that child was taught through use of the question and answer method would find herself in gloom and doom, as the question now demands the knowledge of almost all kinds of chromatography. Therefore, it had been, as in accordance to the research, been found that the use of this method destroys the future of children as it deprives them of the enough knowledge they should have. It makes advancements with chemistry limited as it will be becoming a ~~mistry~~mystery to them, besides having 'A' grades in the subject.

5.1.3 Third Objective: To determine also weather these methods are to some extent beneficial in the student's future.

These methods could be, only to the least extent, be considered beneficial but maybe only in that they bring about the passport into advancement with chemistry. But they, actually, destroy a child's future. A 'C' grade could be better if the child knows all concepts or topics as expected than an 'A' grade but with insufficient knowledge. And so this method can be considered a hidden atomic bomb, a beautiful one; as it gives them what they rejoice in but totally destroying them soon in the future.

5.1.4 Fourth Objective 4: Comparison of test results of students taught Chemistry with the question and answer method and those by the usual methods in which all syllabus content is covered.

Those pupils who got all the syllabus content delivered to them managed to score more marks than those of the question-answer methods in applied chemistry exams and also in stoichiometry as the questions demands knowledge of a number of topics only for a child to answer a single question. For instance, to calculate the concentration of a certain product in a chemical reaction given the mass of one of the reactants; a pupil needs to know:

1. How to calculate number of moles if given mass and chemical formula,
2. The concept of molar ratios
3. The concept of molar masses
4. How to calculate mass
5. How to convert volumes from one unit to the other
6. How to calculate concentration,

By which means if any of the above concepts is not taught or done not completely, then the question becomes a challenge. The list includes the atomic model, chromatography and experimental design and so on.

5.2. CONCLUSIONS

It has been , by the research , exposed and made clear , brought into light that most pupils at the selected school by the researcher had challenges in application of chemistry as only a few topics , only the ones expected to be faced in the exams were being focused on. Which denied pupils of the basics they should have; basics without which pupils could hardly determine the applicable problems of some chemistry concepts. This was in agreement with the research objectives and thereby proving the research a success.

5.3. RECOMMENDATIONS

As in accordance with what the research had revealed, it is thereafter recommended that teachers shift from focusing on the question and answer methods and move to other alternative methods, and if the method still is insisted upon; the

whole of the syllabus content must be covered first such that pupils face lesser challenges in their progression with Chemistry.

5.4. AREAS FOR FURTHER RESEARCHES

In the future, researchers may look into how best pupils can achieve their grades other than by the use of the question and answer methods.

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Appendix

Questionnaire

Date:.....

Dear respondent

I, Makusha Tererai, is a student at Bindura University Of Science Education seeking your deepest understanding in assisting me in the conducting of my research focused on the titled ‘the impact of the question and answer method as a method of teaching on the average performance, knowledge and skills of pupils.’ mainly focusing on the school of choice, Chibi, Berejena and Nyanningwe High School. I hereby beg you understand this is not an investigation in any case but a quest to help develop our education system for the good of its products and the nation at large.

This research is besides so, being carried as part of the fulfilment of the requirements of the diploma in science education as per the university regulations, requirements and expectations. I so kindly ask you to complete and fill in the below questionnaires with the appropriate responses as per your knowledge and experience. This is an academic research in which you’re your privacy is highly respected and guaranteed.

Your assistance and cooperation is here greatly appreciated and highly valued.

Yours

Makusha Tererai

Section A

Please circle your answer to each statement.

Demographic Attributes			
No	Questions	Responses	Coding category
1.	Age	13-14 years	1
		15- 16 years	2
		17-18 years	3
		19-20 years	4
		Above 21 years	5
2.	Gender	Boy	1
		Girl	2
4.	Level	Form 3	1
		Form 4	2
5.	Study Chemistry	Yes	1
		No	2

Section B

1. This section focuses on the difficulties faced by teachers in using the traditional methods of teaching in which the whole syllabus content is covered.

Please tick your answer under the number that corresponds to your selection.

(KEY: SA=Strongly Agree A=Disagree NS =Not Sure D =Disagree SD=Strongly Disagree)

		SA	A	NT	D	SD
I).	Chemistry teachers lack the skill and solid knowledge in some concepts and thus focus on a few	1	2	3	4	5
ii	The methods are time consuming and cannot be covered over the outlined learning time					
ii).	The concepts cannot be all mastered by the learners					
iii).	Teachers are only concerned about having first class results rather than the child's future in the field					
iv).	Teachers themselves have a negative attitudes towards chemistry					
v).	The method is gruesome both to teachers and learners					

Section C

This section focuses on identifying how the use of the question and answer method influence learner performance can.

		SA	A	NT	D	SD
		1	2	3	4	5
i).	Improves recall					
ii).	Improves the learners' performance					
iii).	Improves understanding of chemistry concepts by limiting concepts					
iv).	Helps learners to focus on fewer concepts that can be easily mastered					
v).	Makes the subject favorable and less gruesome					

Section D

This section focuses on the impact of the question and answer method on learners' attitude towards learning of chemistry.

		SA	A	NS	D	SD
i).	Improves interest in the subject	1	2	3	4	5
ii).	Reduces their interest in Chemistry in the future					
iii).	Brings about resignation in the field as learners fail to master the higher level concepts and thus reducing the departments' productivity					
iv).	Helps in giving learners confidence and better results					
V)	It destroys the potential and willing scientist/chemist of tomorrow					

Section E

In this section a test was given to students taught Chemistry with traditional methods and those taught with the question and answer method

Sample	Traditional			Question and answer	
	Pass	Fail		Pass	Fail
1			1		
2			2		
3			3		
4			4		
5			5		
6			6		
7			7		
8			8		
9			9		
10			10		
11			11		
12			12		
14			14		
15			15		
16			16		
17			17		
18			18		
19			19		

20			20		
21			21		
22			22		