Identifying and Addressing Challenging Areas in 11th Standard Economics: A Focus on Effective Teaching Strategies

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DECLARATION

I**, Roushan Kumar,** a student of 3-year Integrated B.Ed.- M.Ed. course, hereby declare that this dissertation entitled, "**Identifying and Addressing Challenging Areas in 11th Standard Economics: A Focus on Effective Teaching Strategies."** has been undertaken by me in partial fulfilment of the requirement for the degree of Three- year Integrated B.Ed.- M.Ed. course under the guidance and supervision of **Dr. Sanjay Kumar Pandagale, Associate prof., Department of Education, RIE Bhopal**.

I also declare that it has not been submitted previously in part or in full to this University or any other University or Institution for the award of any degree or diploma.

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CERTIFICATE

This is to certify that Mr. Roushan Kumar, a student of Three-Year Integrated B.Ed.-M.Ed. course session 2022-2025 of RIE, Bhopal has worked under my supervision and guidance for the dissertation on the topic, **"Identifying and Addressing Challenging Areas in 11th Standard Economics: A Focus on Effective Teaching Strategies."** I further certify that this work is original and worthy of presentation in partial fulfilment of the requirement of degree of Three-Year Integrated B.Ed.- M.Ed. of Barkatullah University, Bhopal. The present study is an outcome of his efforts.

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INTRODUCTION

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1.1 Introduction

Economics as a subject has great significance in the life of human and networked through many dimensions as social, political, national or international. Economics is the only subject in social Science in which Nobel Prize is awarded. India, with its vast population and limited resources, faces constant challenges in how to allocate resources efficiently. From buying groceries to paying EMIs and watching the news about the government budget, economics plays a big role in our daily lives. It helps us to make smart decisions, both as individuals and as a nation. Economics helps students and policymakers understand how to prioritize spending**,** manage scarcity**,** and maximize welfare India still struggles with poverty and unemployment in many areas. How the government can create better jobs and reduce poverty. how the government collects money (taxes) and how it spends it. why prices rise and interest rates affect loans, the reciprocal tariffs imposed by the US government how it affects the Indian businesses and the global market. The world facing many common economic challenges like rising oil prices**,** recession fears**,** and wars or conflicts that impact global trade.

Economists justified the inclusion of the subject on the ground of 'Good citizenship'. In order to play an effective part in decision making, they argued, citizens need to have an adequate understanding of economics.

Education philosopher such as Hirst argued for inclusion of economics in the school curriculum as he believed that the subject had concepts, a distinct logical structure arising from a unique conceptual framework within which experience can be understood in its own distinctive methodology, which made it unique among other social sciences. As such, the subject had the potential to enable students to build capacity for reasoning and logical expression of ideas. In addition, it may help to develop such skills as creative imagination, a sense of judgement, critical thinking, and ability of communication among learners.

Class 11 Economics is a crucial stage in a student's academic journey, laying the groundwork for understanding more complex economic concepts in higher classes and beyond. This subject not only introduces students to fundamental principles of economics but also shapes their analytical and critical thinking abilities. Despite its importance, many students find economics at this level to be challenging. The reasons are manifold: abstract concepts, unfamiliar terminology, a shift from rote memorization to analytical reasoning, and often, inadequate teaching strategies. In classroom learners feel boredom and remain passive which can hinder their overall learning experience. The teaching methodology used for understanding these topics is not motivating and stimulating enough. As a result of this, students often lose interest in the subject. Its teaching should not only concentrate on laws and explanation, but also through which the law can be interpreted. This research aims to identify the hard spots in the 11th standard economics curriculum and propose measures to simplify these concepts for better comprehension. To simplify these concepts the researcher has made a module for these concepts and solve the issues

Teaching through the module helped both students and teachers in terms of their achievement in the subject and their interpersonal skill (Crittenden & Creswell,1972). It was found that teaching through module results in active and explicit learning of concepts. It will also lead to the development of creative and critical thinking, solving problems and issues with various other skills as and when compared to teaching through traditional method (Cheng & Bakar).

Researches proved that module-based learning resulted in concept retention for further courses as well as more enthusiasm and participation in class (Connolly, 2002).

Meaning of Economics

Economics is the social science that studies how individuals, businesses, governments, and nations make choices about allocating resources. Resources such as land, labor, capital, and entrepreneurship are limited, but human wants and needs are virtually unlimited. This basic fact of life gives rise to economic problems: what to produce, how to produce, and for whom to produce. Economists seek to answer these questions and explore how societies can best manage their resources to improve the standard of living for everyone. The goal of economics is to understand how these decisions affect the production, distribution, and consumption of goods and services. Economics helps to

analyse how markets function, how policies impact society, and how individuals and organizations behave when faced with limited resources.
The term is ultimately derived from Ancient Greek (*oikonomia*) which is a term for the "way (nomos) to run a household (oikos)".

There are a variety of modern definitions of economics, Scottish philosopher **Adam Smith (1776)** defined what was then called political economy as, "an inquiry into the nature and causes of the wealth of nations" essentially focusing on how wealth is produced, distributed, and the factors that contribute to a nation's prosperity.

Alfred Marshall in his textbook *Principles of Economics* (1890) "Economics is the study of mankind in the ordinary business of life". Marshall's definition, sometimes referred to as the "welfare definition", emphasizes that economics is concerned with how individuals and society strive to achieve economic well-being. This includes both material goods and services, as well as other aspects of life that contribute to overall happiness and well-being. This definition, from the late 19th century, shifts the focus to human behavior and how individuals interact in the market.

Lionel Robbins (1932) "Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses". This definition, from the mid-20th century, emphasizes the concept of scarcity and how individuals make choices with limited resources.

Branches of Economics

The field of economics is vast, encompassing several branches, each focusing on different aspects of economic life. These branches can be broadly categorized into two broad categories: **microeconomics** and **macroeconomics**. However, other specialized areas of study, such as **econometrics**, **international economics**, and **development economics**, also contribute significantly to the overall understanding of the field.

Microeconomics

Microeconomics is the branch of economics that deals with the study of individual agents such as consumers, firms, and workers and their decision-making processes within markets. It aims to explain how these agents make choices about the allocation of limited resources.

Key areas studied in microeconomics include:

- **Consumer Theory**: Understanding how consumers maximize utility given their income and the prices of goods and services (Mankiw, 2017).
- **Firm Theory**: Studying how firms make decisions about what to produce and how much to produce, based on market conditions and costs (Pindyck & Rubinfeld, 2017).
- **Market Structures**: Analyzing different types of market organizations, such as perfect competition, monopolies, and oligopolies (Varian, 2014).
- **Price Determination**: Investigating how supply and demand determine prices in competitive markets (Mankiw, 2017).

Microeconomics helps individuals and businesses understand how market dynamics affect prices, output, and economic efficiency. It also assists in making decisions that optimize both consumer welfare and business profits (Varian, 2014).

Macroeconomics

Macroeconomics focuses on the broader aspects of the economy as a whole. It examines aggregate indicators, such as national income, inflation, unemployment, and economic growth, and considers the role of government policies in influencing these variables.

Important topics in macroeconomics include:

- **National Income Accounting**: Measuring the total output of an economy, typically represented by Gross Domestic Product (GDP) (Blanchard, 2017).
- **Inflation and Unemployment**: Exploring the causes of inflation and unemployment, and their effects on purchasing power and economic stability (Samuelson & Nordhaus, 2010).
- **Monetary and Fiscal Policy**: Studying the impact of government spending, taxation, and central bank policies on economic growth and stability (Mankiw, 2017).
- **Economic Growth**: Investigating the long-term increase in national income and the factors that promote economic development (Barro, 2013).

Macroeconomics provides critical insights for policymakers, enabling them to design effective strategies for achieving economic stability, full employment, and sustainable growth (Blanchard, 2017).

Need of studying economics at class 11

Economics is the study of how societies use limited resources to fulfil their needs and wants. At the Class 11 level, students are introduced to this essential discipline not just as a subject, but as a lens through which to view and understand the real world. The foundational concepts taught in Class 11 economics like demand and supply, national income, consumer behaviour, and market structures provide students with tools to critically analyse personal, local, and global economic issues.

In today's fast-changing and interconnected world, economic literacy is more important than ever. With issues like inflation, unemployment, poverty, and international trade dominating headlines, students need to be economically aware to navigate both their personal lives and the broader socio-political landscape.

Economics is often seen as a complex and abstract subject, filled with graphs, formulas, and theories. But at its core, economics is one of the most practical subjects a student can learn. It explains the basic principle that underlies almost every choice we make: how to deal with scarcity. From the moment we wake up to the time we go to bed, economics is working in the background, shaping our decisions, behaviours, and interactions. This makes the study of economics in Class 11 not just relevant but essential for every student. Below are some of the reasons of why should we study economics: -

Making Smart Personal Decision

Whether it's choosing between buying a new phone or saving that money for later, students deal with limited resources especially time and money. Economics teaches us how to make the best use of these resources. Class 11 introduces students to concepts like **opportunity cost**, which helps them understand that choosing one option means giving up another. This awareness sharpens decision-making skills and promotes a mindset of conscious consumption.

For example, if a student has ₹1,000 and must decide between buying a pair of shoes or going to the movies with friends, economics helps them weigh the benefits and costs

of both. The concept of **marginal utility** how much satisfaction one more unit of a good or service brings can help determine which option provides the greater value.

Understanding How Markets Work

A major part of Class 11 economics focuses on **microeconomics**, the branch that studies individual units like consumers, firms, and markets. Students learn how prices are determined in a free market through the forces of **demand and supply**. This helps them understand why the price of onions might rise during certain months or why discounts are offered during festive seasons.

Such knowledge isn't just theoretical. It helps students become more informed consumers. They can identify when prices are fair or inflated, how sellers may use psychological pricing, and even how monopolies or lack of competition can affect their choices.

Social Awareness and Empathy

Studying economics in Class 11 also helps students develop empathy and awareness about social issues. Concepts like **poverty**, **inequality**, and **unemployment** are not just statistics they're human issues. By understanding these through an economic lens, students are encouraged to think critically about social justice and equity.

A topic like poverty line and its measurement may spark curiosity about real-world conditions. Why do some people have access to resources while others don't? What can be done to fix that? Economics doesn't just provide answers, but also teaches students to ask the right questions.

Role in Daily Conversations and Media

Economic terms are frequently used in news reports, social media, and daily conversations GDP, inflation, recession, fiscal deficit, etc. Without basic knowledge from Class 11 economics, students may feel disconnected or misinterpret information. With even a foundational understanding, they become more capable of participating in debates, forming opinions, and interpreting economic events.

When students hear that "the RBI has raised repo rates," they'll know that it might mean loans will become costlier and that it's a step to control inflation. This transforms passive listeners into active, informed citizens.

Applying Theoretical Models to Real-Life Situations

One of the key strengths of economics is that it bridges the gap between theory and practice. Class 11 students learn models like:

- Law of Demand and Supply
- Production Possibility Curve
- Consumer Equilibrium
- Elasticity of Demand

These models aren't just abstract concepts. They are simplified representations of reality that help students understand and predict how people and markets behave. Using these models, students begin to **think like economists**, applying logical frameworks to explain everyday phenomena, such as price fluctuations, consumer trends, or policy impacts.

After completing the higher secondary education, students who choose Arts or Commerce related subjects have to study Economics as one of the compulsories branches. A large number of students retain without understanding the basic concepts in Economics like elasticity, multiplier and market structures and so on. As a result, they develop highly uneconomical and unfruitful study habits. A thorough base in Economics should be provided at this level to those who are keen to continue the study in the subject for higher degrees. The experience of the Investigator as a teacher and the observations made during discussion with higher secondary school teachers also highlight the need for diagnosis of the nature and extent of problems and difficulties in learning Economics at higher secondary level. In spite of the significance of this area, no study has been conducted so far to identify and overcome the difficulties in a scientific and systematic manner.

1.2 Need and significance of the study

Despite its relevance to real-world scenarios and future academic pursuits, Economics is frequently perceived as a challenging subject by Class 11 students. These challenges

are not uniformly distributed across the curriculum; instead, they cluster around specific topics or 'hard spots' that students find difficult to comprehend. These hard spots may include abstract economic models, graphical analysis, statistical calculations, or interpreting economic data.

Identifying these hard spots is not merely a diagnostic exercise but a critical step in enhancing pedagogical effectiveness. When educators are aware of the specific hurdles that impede student understanding, they can adopt targeted teaching strategies to address them. Moreover, recognizing these areas of difficulty allows curriculum developers, textbook authors, and policymakers to design more inclusive and accessible learning materials.

This comprehensive exploration aims to understand the need for identifying challenging areas—or hard spots—in the Class 11 Economics curriculum and to propose effective teaching methods to address them. By engaging with theoretical perspectives, classroom practices, and stakeholder feedback, this piece seeks to offer actionable insights that can contribute to improved student engagement, deeper conceptual understanding, and ultimately, better academic outcomes in Economics.

In the context of education, "hard spots" refer to specific topics or areas within a subject that consistently pose challenges to student understanding. These are not just momentary struggles, but recurring stumbling blocks where many students face conceptual, procedural, or application-based difficulties. In Class 11 Economics, hard spots manifest in various forms, from abstract theories in Microeconomics to technical statistical operations and data interpretation.

Hard spots can stem from a variety of causes—ranging from the intrinsic complexity of the topic to the way it is presented or assessed. For instance, concepts like price elasticity of demand or national income accounting often appear repeatedly in student feedback as difficult to grasp. These are topics that not only require understanding of the core idea but also the ability to apply that understanding in multiple contexts, sometimes with mathematical rigor.

Characteristics of Hard Spots in Economics

There are several shared traits that define hard spots in Class 11 Economics:

- **Abstractness:** Many economic concepts, such as utility, opportunity cost, and equilibrium, are theoretical and not directly observable. This abstract nature makes it difficult for students to relate these ideas to real-life situations.
- **Multidisciplinary Demands:** Economics often requires skills from other disciplines—particularly mathematics and logic. A student who is weak in basic math may find statistical portions especially hard.
- **Graphical Representation:** Understanding and interpreting graphs—such as supply and demand curves or Lorenz curves—requires spatial reasoning, which not all students find intuitive.
- **Cumulative Learning:** Economics builds on itself. If a student fails to understand an early concept like demand, they will likely struggle with related topics like price elasticity and market equilibrium.
- **Terminology Overlap:** Economic terms sometimes have meanings that differ from their everyday usage. For example, "investment" in economics refers to the purchase of capital goods, not buying stocks or mutual funds as commonly perceived.

Understanding these characteristics is critical in recognizing why some areas of Economics become hard spots and need focused teaching strategies. Several underlying factors contribute to why these particular topics become challenging:

- **Cognitive Load:** Many Economics topics require students to juggle multiple ideas at once—understanding definitions, drawing diagrams, interpreting graphs, and performing calculations. This cognitive overload can reduce comprehension and retention.
- **Teaching Approaches:** Traditional lecture-based teaching may not adequately support the diverse learning needs of students. A lack of practical examples or interactive discussions often leads to superficial understanding.
- **Textbook Language and Structure:** The language in NCERT Economics textbooks can be formal, technical, and dense. Students may find the explanations abstract and lacking in relatable examples.
- **Lack of Real-World Connection:** When students are unable to relate economic theories to everyday experiences, they may lose interest or find topics too theoretical. Without relevance, learning becomes a rote exercise.

- **Assessment Pressure:** Because Economics involves both numerical and descriptive questions, students often feel unsure about how much detail is required. The pressure of board exams may discourage exploration and focus learning narrowly on "what will be asked," not "why it matters."

Impact on Student Learning and Progress

When students encounter hard spots without adequate support, several negative outcomes may follow:

- **Loss of Interest:** Repeated failure to understand key topics can lead to disengagement.
- **Poor Academic Performance:** Misunderstood concepts can affect not only internal assessments but also board exam results.
- **Limited Higher-Level Thinking:** Without mastering foundational concepts, students cannot progress to analytical thinking or problem-solving.
- **Anxiety and Frustration:** The cumulative effect of confusion and poor performance can lead to academic anxiety and self-doubt.

These consequences reinforce the need for early identification and proactive intervention in addressing hard spots.

After identifying the hard spots in Class 11 Economics, the next crucial step is devising and implementing effective teaching methods that make these challenging areas more accessible to learners. Economics, by nature, combines abstract theory with real-world application, requiring a blend of conceptual clarity and practical understanding. Traditional lecture-based methods often fall short in achieving this balance. Therefore, a strategic, diversified, and student-centric teaching approach is essential.

This section explores a variety of teaching methods and classroom strategies aimed at demystifying complex economic concepts and improving overall student engagement and performance.

Teaching Microeconomics Effectively

Microeconomics introduces students to the basic functioning of markets, consumer and producer behaviour, and the pricing mechanism. Several concepts are abstract and involve heavy use of graphical and mathematical analysis. Use of Visual Aids and Diagram, tools (like Desmos or GeoGebra), Concept Mapping, Real-Life Examples and Case Studies, Active Learning Strategies (like role plays and debates).

1.3 Statement of problem

Economics is often seen as a complex and abstract subject, filled with graphs, formulas, and theories. Rote memorization has no role to play. Each topic is highly interrelated Study of Economics can be made simple only through changing our style of learning. Hence the topic selected for the study is entitled as **"Identifying and Addressing Challenging Areas in 11th Standard Economics: A Focus on Effective Teaching Strategies."**

1.4 Definition of Key Terms

Identification

The action of identifying or the fact of being identified (Compact Oxford Reference Dictionary, 2001).

To notice or recognize something or someone (Macmillan Dictionary, 2010).

Operational definition: By the word `Identification' here the Investigator means locating or finding out something from among a group of things.

Challenging topic

Specific topics or concepts in the 11th standard Economics curriculum that students struggle to understand or find it difficult, which may include topics like elasticity, slope, market structures, multiplier, and fiscal policy.

Teaching Strategy

Methods employed by educators to facilitate learning, including traditional lectures, collaborative learning, project-based learning, and technology-enhanced instruction.

Effective Teaching Strategy

Approaches that significantly improve student understanding and engagement, as measured by improvements in test scores, classroom participation, and student feedback.

1.5 Objectives of the Study

In order to identify the hard spots in class 11th Economics and to address the issue by compiling a package by the researcher and see its effectiveness, the present study realizes the following specific objectives.

1. To determine specific topics within 11th standard Economics that students find difficult.

2. To develop effective strategy to enhance understanding of the topic and to improve in their achievement, different modes of instruction in the form of pictures, videos (in the case of e-content), activities, text, graphs, visual media (Power Point Slides), traditional method (Lectures), case studies are included.

Apart from the above stated objectives, the other implicit objectives are:

1. To develop the package for the identified challenging topics
2. To develop the achievement test in that topic of Economics.

1.6 Hypotheses of the Study

The following Null Hypothesis is formulated on the basis of objectives of the study-

H0: Implementing targeted teaching strategies will lead to a statistically no significant improvement in students' understanding and performance in Economics.

1.7 Delimitation

The present study is delimited to the following aspects.

1. The study is delimited to exclusively on the 11th standard Economics curriculum in selected high schools, limiting its applicability to other grades or subjects.
2. The study will be conducted in a specific region or city, which may limit the generalizability of findings to other contexts.
3. The research will involve a sample of 20-30 students of a class, which may not capture the experiences of all students in the 11th standard across different educational settings.

4. The study will prioritize certain challenging areas in the curriculum, potentially overlooking other topics that students may also find difficult.
5. The proposed teaching strategies will be implemented over a defined period (e.g., one or two week), which may not reflect long-term effects on student performance.

Chapter 2

REVIEW OF RELATED LITERATURE

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REVIEW OF RELATED LITERATURE

2.1 Introduction

Every academic research project, no matter the field, starts by connecting with what others have already discovered. That's why it's so important for researchers to take the time to understand and build on existing knowledge. A literature review is an essential component of scholarly research. It serves as a critical summary and synthesis of previous research on a particular topic. The main purpose is to identify gaps, establish a theoretical framework, and contextualize new research within existing knowledge. Conducting a literature review is fundamental in academic writing because it helps researchers avoid duplication, refine their research questions, and justify their studies (Hart, 1998).

H.G.Desai(1997) said that "The researcher gains an understanding of the need for whatever researcher has been done before studying literature and information on the facts used in the research work is also obtained from the studies."

Effective research must be based on past knowledge. This step helps to eliminate the duplication of what has been done already and provides useful hypotheses and helpful suggestions for significant investigation. (Best John W., 1995).

A comprehensive understanding of the relevant literature may assist learners by identifying what is known, what has been tried, which techniques have worked, and what obstacles still need to be overcome. (Best and Kahan, 1999).

The literature review accomplishes several purposes. It shares with the reader the results of other studies that are closely related to the one being undertaken. It relates a study to the larger, ongoing dialogue in the literature, filling in gaps and extending prior studies (Cooper, 2010; Marshall &Rossman, 2016).

A literature review is "a description, summary, and critical evaluation of scholarly works related to a specific topic or area of interest" (Boote & Beile, 2005).

Mertens (2014) defines the literature review in educational research as "a systematic and critical analysis of the literature related to a specific educational topic or question, which helps to frame the problem, construct theoretical underpinnings, and guide the research design."

According to Creswell and Creswell (2018), literature reviews help researchers to:

- Understand the theoretical and empirical background
- Justify the need for the study
- Develop appropriate research questions and hypotheses
- Avoid duplication of previous work
- Identify suitable methodologies
- Interpret results in light of existing knowledge

For a number of research questions, a literature review may be the best methodological tool to provide answers. For example, reviews are useful when the researcher wants to evaluate theory or evidence in a certain area or to examine the validity or accuracy of a certain theory or competing theories (Tranfield et al., 2003).

Boote and Beile (2005), in their seminal work on literature review quality in education doctoral dissertations, argue that a good literature review in education should "demonstrate thoroughness, methodological awareness, historical understanding, and a critical stance." They suggest that in education research, the literature review is a scholarly act that not only describes what has been done but also reveals what should be done next.

Literature reviews play an important role as a foundation for all types of research. They can serve as a basis for knowledge development, create guidelines for policy and practice, provide evidence of an effect, and, if well conducted, have the capacity to engender new ideas and directions for a particular field. If there is certainty that the research is built on great accuracy, it will be much easier to identify actual research gaps instead of simply conducting the same research repeatedly, to develop better and more precise hypotheses and research questions, and, therefore, to increase the quality of research as a community.

Literature reviews are a vital starting point for any kind of research. They help deepen our understanding and highlight what works—and what doesn't, and if done right, can lead to new ideas and fresh directions. When we're confident that our research is based on accurate info, it's way easier to spot genuine gaps in knowledge. This means we're not just repeating what's

already been done, but instead asking sharper questions, forming stronger hypotheses, and ultimately raising the overall quality of research across the field.

2.2 Related Literature

The concept of "Challenging area" refers to specific topics or concepts within a subject that students consistently find difficult to understand or master. Identifying these areas is essential for improving curriculum design, teaching strategies, and learning outcomes. In recent years, there has been increasing academic interest in analysing these problem areas across various disciplines, especially in subjects like mathematics, science, and economics, where abstract or complex content can hinder comprehension.

Hard spots are often characterized by low student performance, high error rates, increased cognitive load, or recurring misconceptions (Chi, 2005). These challenging areas can vary across disciplines but typically involve abstract reasoning, conceptual understanding, or procedural complexity.

According to Shulman (1986), understanding student difficulties is a crucial part of pedagogical content knowledge. Teachers who can anticipate and identify hard spots are better equipped to adjust instruction to meet students' needs.

According to Barr et al. (1947) the correction and elimination of the weaknesses through a constructive attack on their causes constitute an essential complementary process closely related to diagnosis. The development of systematically constructed and standardized diagnostic tests and procedures of various kinds have a marked effect on instructional practices and materials. Educational diagnosis is the basis of effective and intelligent teaching. Diagnosis in education means a case study of the condition of learning to determine its nature and to find out the causation, with the main purpose of correcting and remedying the difficulty involved in active remembering. The major function of diagnosis is to facilitate the optimum development of every student. It is the determination of the nature of learning difficulties and deficiencies.

Ajay kumar G. (2015) The focus of the study was to identify the hard spots in learning Organic Chemistry at higher secondary level and develop instructional strategies for its remediation. The Investigator has also made an attempt to find out the relative effectiveness of developed strategies for remediation of the hard spots with that of Conventional Lecture Method on the achievement. Survey cum Experimental method was adopted for the conduct of study The

Investigator developed select instructional strategies in Organic Chemistry at higher secondary level and tried to find out their effectiveness by comparing them with the Conventional Lecture Method. For the development of the select instructional strategies the Investigator selected the unit 'Organic Chemistry-some basic principles and techniques' from the standard XI Chemistry test book. Pre-Test Post-Test non-equivalent group design was followed. There were three experimental and one control groups. The experimental groups were taught through developed instructional strategies while the control group was taught through Conventional Lecture Method. To compensate for the lack of equivalence among the groups, the technique of Analysis of Covariance (ANCOVA) was applied. Survey shows that among the three sub areas in Chemistry, Organic Chemistry is the most difficult area (50%). Result shows that great majority (90%) of students have difficulty in learning Organic Chemistry. Majority of the students (70%) find difficulty in naming Organic compounds Topic wise error analysis also reveals that Students committed errors in all the five sub topics selected for the diagnostic test therefore there is hard spot in Organic Chemistry topics at higher at secondary school level**.**

Robinson and Davis (1999) the profession of economics has been profoundly altered by the introduction of technology, perhaps to an extent greater than any other social science, due in part to the role that mathematics and statistics play in the discipline. The use of statistical models and simulations has substantially changed college-level teaching of economics, and recommend different content and instructional methods for secondary economics courses as well, including many computer and Web resources. They even propose a rule to limit "chalk and talk" traditional lectures to no more than 25 percent of all class time.

Arti S.Patel (June 2021) The study was carried out to study the effectiveness of Active learning methods in teaching Economics and achievement of class 11^{th} students of Urban area and Rural area. The Study was an experimental research and researcher has used 2X2 factorial design for the study. Research has used following three tools to collect the data of the study

1.Desai Verbal- non-verbal group test of Intelligence.

2. Achievement test in Economics and

3. Learning awareness questionnaire

For data analysis researcher used descriptive statistics mean, SD and t- test to compare different groups. In this study researcher has used six techniques -Jigsaw Method, A reaction to video, Round Table, Pause Procedure, Think-pair-Share, Visual Learning of Active learning. From the results and findings of the study it can be concluded that techniques used in Active learning programme was found effective as compare to conventional method of teaching. In Active

learning classroom students' academic engagement was found and students were actively participating in teaching learning process. This type of learning content is more useful in teaching learning process for the academic development of the students.

Dr. Santhosh Areekkuzhiyil (2014) The present-day economics classroom are appear to be boring and threatening to many students as there is no or only little scope for natural and creative leaning of economics knowledge and acquisition of competence. National Curriculum Framework (2005) the association of learning with fear, discipline and stress, rather than enjoyment and satisfaction, is detrimental to learning. To know and overcome from this situation he conducted a study with the objectives of verification of whether the school education facilitate joyful learning of economics and to identify the strategies for joyful learning of economics at secondary level. And for this he uses content analysis, focused group interview and informal discussions for collecting data. The curriculum and text books of economics at secondary level have been used for content analysis. The study is qualitative in nature. The investigator identified the following factors which require urgent considerations for making the learning of economics more joyful.

1. Changes in the Pedagogic Practice adopted by Teachers- the new pedagogical philosophy in its spirit and meaning give a great boost to the joyful learning of economics at secondary level.
2. Let the Grass Root Economic and Social Realities Reflects in the Classrooms- It will make the learning of economics more realistic, life oriented and meaningful.
3. Make the learning of economics competency based- It will help to make the learning of economics more realistic and joyful. Economics provides students the opportunity to work independently and co-operatively with others through a process as they apply decision-making, problem-solving, and critical-thinking skills to problems and/or issues. These enriched learning environments offer challenging, stimulating, and fun activities that tantalize the thought process.
4. Make the learning of economics more functional- It will help the learning of economics more need based and activity based. Learners will get more interested and involved in learning of economics.
5. Changes required in the Classroom Environment

The structure of the classroom has to be changed to from formal to informal; authoritarian to non-authoritarian, and from monologue based to dialogue-based classrooms. Such type of economic classroom will facilitate diverse thinking, and the development of the essential economic and social competence among the learners.

Economics curriculum at secondary level in India has been changing for the past few years in its content, approach and ideology. But still there are some areas where changes have to take place for the meaningful and realistic learning of economics. There require some changes from the part of the teachers in their educational practices.

Siji John (2019) This study was intended to prepare and test the Effect of Brain Based Learning Strategy in comparison with Activity Method of teaching in Economics on Higher Order Thinking Skills and Achievement at Higher Secondary School Students. The investigator adopted Experimental cum Survey method for the study. Experimental method was used for testing the Effect of Brain Based Learning Strategy on Higher Order Thinking Skills and Achievement in Economics among Higher Secondary level. Survey Method was used for collecting the details from experts and Higher Secondary School Teachers the suitability and practicability of Brain Based Learning Strategy. Pre-Test Post-Test non-equivalent group Experimental design was adopted for the study. Sample consists of 232 students selected from 4 Higher Secondary schools of Ernakulum district. Rating scale and questionnaire were administered 100 higher secondary Economics teachers and 10 experts in Economics and Social Science education. Statistical techniques as Test of significance, Variance, Co-Variance and Percentage were used for analysing data.

The analysis of data regarding the suitability of Brain Based Learning Strategy for attaining Critical Thinking Skill, Problem Solving Skill revealed that Brain Based Learning Strategy is suitable to a great extent. A great majority of teachers reported that Brain Based Learning Strategy is effective to Promote Retention Ability, Promote Problem Solving Skill, Enhances Critical Thinking Skill, Enhances Motivation, Promotes Students Participation in Learning, Suitable to Develop Higher Order Thinking Skills, Help to Learn Concepts in Economics meaningfully, Promote Creativity, Promotes Self-Learning and Develops Process Skills. The analysis of data revealed that 99.12% of the students reported that Brain Based Learning Strategy is effective for learning Economics.

Sucheta Kumari and Geeta Rani (2012) In 2012, Sucheta Kumari and Geeta Rani carried out a study to explore how different types of instructional media affect the academic performance of Class XII Economics students. Their goal was to examine the effectiveness of three teaching methods: Print Media (using self-instructional modules), Visual Media (through PowerPoint presentations), and the traditional classroom approach. The researchers hypothesized that there

would be no significant difference in the academic achievements of students taught through these different media.

To test this, they used a pre-test and post-test design and followed a (3×3×2) factorial design model proposed by Lewis (1968), known as a nesting cum crossing design. The study involved 90 students from Vaish Senior Secondary School in Rohtak, Haryana. These students were selected based on their scores in the Group Test of Mental Ability (GTMA) developed by Jalota, and were then divided into three equal groups of 30.

Two main sets of tools were used in the study. Instructional tools included the self-instructional modules, PowerPoint presentations with animations and graphics, and conventional teaching methods. Measuring tools involved the GTMA for assessing intelligence levels, and an academic achievement test created by the investigator herself.

The data collected from both pre-tests and post-tests were analyzed using analysis of variance (ANOVA), based on Lewis's design. The findings showed that students performed best when taught through visual media—specifically, PowerPoint presentations—compared to the other two methods. Additionally, students with high intelligence levels scored the highest, followed by those with moderate and low intelligence. Across all three teaching methods, students' scores improved from pre-test to post-test, with the visual method resulting in the highest average scores.

Koushik Das (June 2019) Revolution in information and communication technologies has reduced national boundaries to meaningless lines drawn on maps. In this scenario, education has been identified as one of the services which need to be opened up for free flow of trade between countries. ICTs use in modern education can save a lot of money of the Government. Moreover, a lot of qualitative improvement can be seen as resource persons for the training can be best of the world. ICT can be helpful in quality and standards of education by implementing it in various phases of education. But lack of resources within the educational sector educational is a hindrance in the implementation of ICT in developing in 21st century. The task of employment and integration of ICT in modern education is facing a lot of challenges. The challenges like- availability of ICT facilities in educational institution, lack of knowledge to handle ICT equipment, language problem, insufficient funds, lack of trained etc. but we can overcome the challenges- to create awareness on ICT Education, to formulate policies to promote broad access to skills and competencies for learning and adopting ICT, enlarge community participation for self-sustainability in ICT application, develop supportive infrastructure facilities such as electricity, internet, etc. Government should actively.

Responsible authorities have to try and overcome these challenges, so that the modern education can benefit and also its help teachers and institutions to be more modern and dynamic. Eventually, the use of ICT will enhance the learning experiences of students. It also helps for building a successful career, in a technology savvy world.

Kenneth J. Klasen and Keith A Willoughby (2003) conducted a study to assess student learning in class simulation games. An effective game will help students understand concepts more quickly and remember them better than from a lecture. The game used here was a simulation of an inventory system, where student teams place orders for an item on a monthly basis (based on limited knowledge of prior demand), and then the instructor informs them what the demand is for that month. There are holding costs for items not sold and shortage costs if they run out of items. The students then place their order for the next month. To evaluate student learning, two methods were used: a before-and-after questionnaire, and playing the game twice. Both methods allowed for an initial benchmark to be established, followed by a measure of how much students improved. For the questionnaire, answers were scored and a paired-comparison t-test was calculated to assess learning. When the game was played twice, student performance was calculated including the change in student profits. Results pointed to the conclusion that students learned from the game. Basic inventory knowledge increased, students gained an appreciation for the complexity of inventory issues and of decision making in general, and students enjoyed the game and thought it was a worthwhile learning experience. It was evident that many students grasped the larger strategic issues and were beginning to apply them more broadly. Although not all changes were statistically significant, most did improve, suggesting that students developed a deeper hands-on understanding of the issues. The current study is confirmatory in the general use of simulation games.

Nazeer, Abdull (2006) conducted an experimental study on the effect of cooperative learning model on enhancing the teaching and learning of economics at secondary schools in the Maldives by trailing a cooperative learning model to enhance economics teachers' awareness of the impact that cooperative learning might have on student learning. Some elements of both ethnographic and grounded theory methodologies were employed and specific data collection methods included workshops, classroom observations, interviews, video tapes and student questionnaires. Nine teachers and 232 students were involved in this study. The research was conducted in three stages (pre-intervention, workshops to train the participants, and post intervention) over a period of three months in three selected schools in Male', the Maldives. In the pre-intervention phase, the teachers taught in a traditional manner, but after the intervention

they incorporated elements of cooperative learning method to teach economics in their selected classes. The overall findings showed a considerable change in teachers' and students' attitudes and perceptions about traditional teacher-centered methods towards more student-centered methods of cooperative learning. It was evident that both teachers and students perceived cooperative learning to be an effective method of teaching. The findings revealed that both teachers and students understood and could see the benefits that cooperative learning offered to the teaching and learning of economics. Students indicated that they liked working in groups and appreciated getting help from other students. In addition, the results revealed that students' interactions and involvement in classroom activities, as well as interest and motivation to learn economics, increased during the implementation of the cooperative learning model. This study suggested that training teachers and students for cooperative learning is salient for effective implementation of cooperative learning for a positive influence on students' learning and teachers' pedagogy.

Dr. Tara Sabapathy who made a presentation on Innovative Methods of Teaching Economics at Secondary School Level. She mentioned that Economics is a very important school subject but students find it boring and dull. In last thirty years she has observed and found that largely methods of teaching are not interesting and are not need based. Teachers use chalk and talk method. She suggested some innovative methods of teaching which she had identified

- Cooperative Learning
- Case Study Method
- Problem Solving Method
- Project Method
- Media Integration
- Learning games and simulations
- Peer teaching and learning
- Brainstorming

She has research-based evidence to prove their effectiveness. Finally, she concluded that it is necessary for teachers to make classroom teaching more interactive by using the innovative methods within the framework of traditional "chalk and talk" method. Teachers must realize that those topics which are difficult to understand can be taught through innovative methods. Adopting innovative methods on the part of the teachers requires a positive attitude, openness to change, time management, classroom rearrangement, commitment and the desire to achieve the instructional objectives effectively.

2.3 Concluding Remark

The review of existing literature highlights several key findings related to instructional methods, student learning styles, and the impact of various teaching media on academic achievement, identifying hard spots in organic chemistry, cooperative learning, simulation game, ICT Integrated teaching, Brain based learning, joyful learning and all. However, while such research offers valuable insights but there remains a notable gap in subject-specific investigations—particularly in the context of Class 11 Economics, which presents unique conceptual and analytical challenges for students.

Despite the availability of general pedagogical research, limited studies have focused specifically on identifying the difficult areas or "Challenging Area" within the Class 11 Economics curriculum. These areas, often abstract and data-driven, require targeted teaching strategies to improve comprehension and engagement. Moreover, the diversity in students' cognitive levels and learning needs necessitates a more nuanced approach that goes beyond media selection and delves into the effectiveness of tailored teaching methodologies for challenging content areas.

Therefore, the present study is justified on the grounds that it seeks to bridge this research gap by systematically identifying the difficult topics within Class 11 Economics and evaluating innovative and targeted instructional strategies for these specific areas. By doing so, the study not only builds upon the foundation laid by previous research but also addresses the practical needs of educators and learners. The outcomes are expected to contribute meaningfully to curriculum design, teacher training, and classroom practices, ultimately enhancing student achievement and interest in the subject.

Chapter 3

RESEARCH METHODOLOGY

Chapter 3

RESEARCH METHODOLOGY

3.1 Research Design

Planning is the foundation upon which the superstructure of any research study is based. A plan is the practical view of the expectations. "Research design is the glue that holds all the essentials in a research project together and it is overall plan for organizing a scientific investigation" (Polit and Beck 2004). Research design consist of advance planning, methods to be adopted for collecting the relevant data and the technique to be used for their analysis keeping in view of the research objectives. Research design is a framework to be followed in order to find the answers to research questions in a re-searchable, valid, and reliable method. It provides a structure for the research. According to Green & Tull, a Research design is a pattern for a research project to state how the data could be gathered and processed. Thus, it is a blueprint for collecting and analysing data for the research. It includes vital parameters like what, how, from where, time duration, by which way the data needs to be collected.

3.1.1 Research Design of the Present Study

The present study used a mixed methodology integrating both qualitative and quantitative approaches. Mixed method is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches for the broad purpose of breadth and depth of understanding and corroboration (cited in Tashakkori and Teddlie,2010). It is the combination of applying qualitative and quantitative techniques in a single research study (Mangaleswaran,2011). It is believed that whenever the combination of various research types is used, results would add depth to the data analysis and thus, bring out wiser results (Patton, 1990). The combination of two different methods can create a synergistic research project where by one method enables the other to be more effective, and, together both methods provide a fuller understanding of the research problem.

Survey cum Experimental method was adopted for conducting the present study. For the qualitative part of the study Survey method and for the quantitative part Quasi-Experimental method was adopted.

Experimental design is the blueprint of the procedures that enable the researcher to test the hypothesis by reaching valid conclusions about relationships between independent and dependent variables. The selection of a particular design is based on the purpose of the experiment, the types of variables to be manipulated and the conditions or limiting factors under which it is conducted (Best and Khan, 2007).

For the purpose of the conduct of the experiment, the Investigator analysed the different types of experimental designs. In a true experimental design, the equivalence of the experimental and control groups is made by assigning the subjects randomly to the experiment and control groups. In the present educational situation, it is difficult to organize true experimental designs in the classroom settings, because obtaining the matched pairs by matching person to person is not feasible as the subjects belong to different class divisions in different schools. It is practically impossible to bring them together for the purpose of experimentation as it will disturb the usual class schedules.

The type of research design is a **quasi-experimental research design.** The term, quasi means resembling as it resembles the true experiment format, but still not true in its experimentation format. It is used in situations where a true experiment format is not possible due to various practical, social, and ethical reasons. In this design, the independent variable is manipulated and then it was studied for its cause-and-effect relationship with the dependent variable; thus, it avoids the directionality issue (Cook & Campbell, 1979). The quasi-experimental design has high external validity as they include real life settings and internal validity as it allows control over some variables. This is the best design to study the effectiveness of a particular treatment over a group of people.

The type of quasi-experimental design of research, in the present research is a combination design that is an integration of post-test control group design. In the experimental group, there is a post-test after a treatment. Simultaneously, without the specific treatment, there would be a post-test of the control group. This setup would make a comparison between the experimental group and control group of treatment to know about their improvement. As well as the betterment of both, experimental and control group. The assignment of the group as experimental or control has been done randomly.

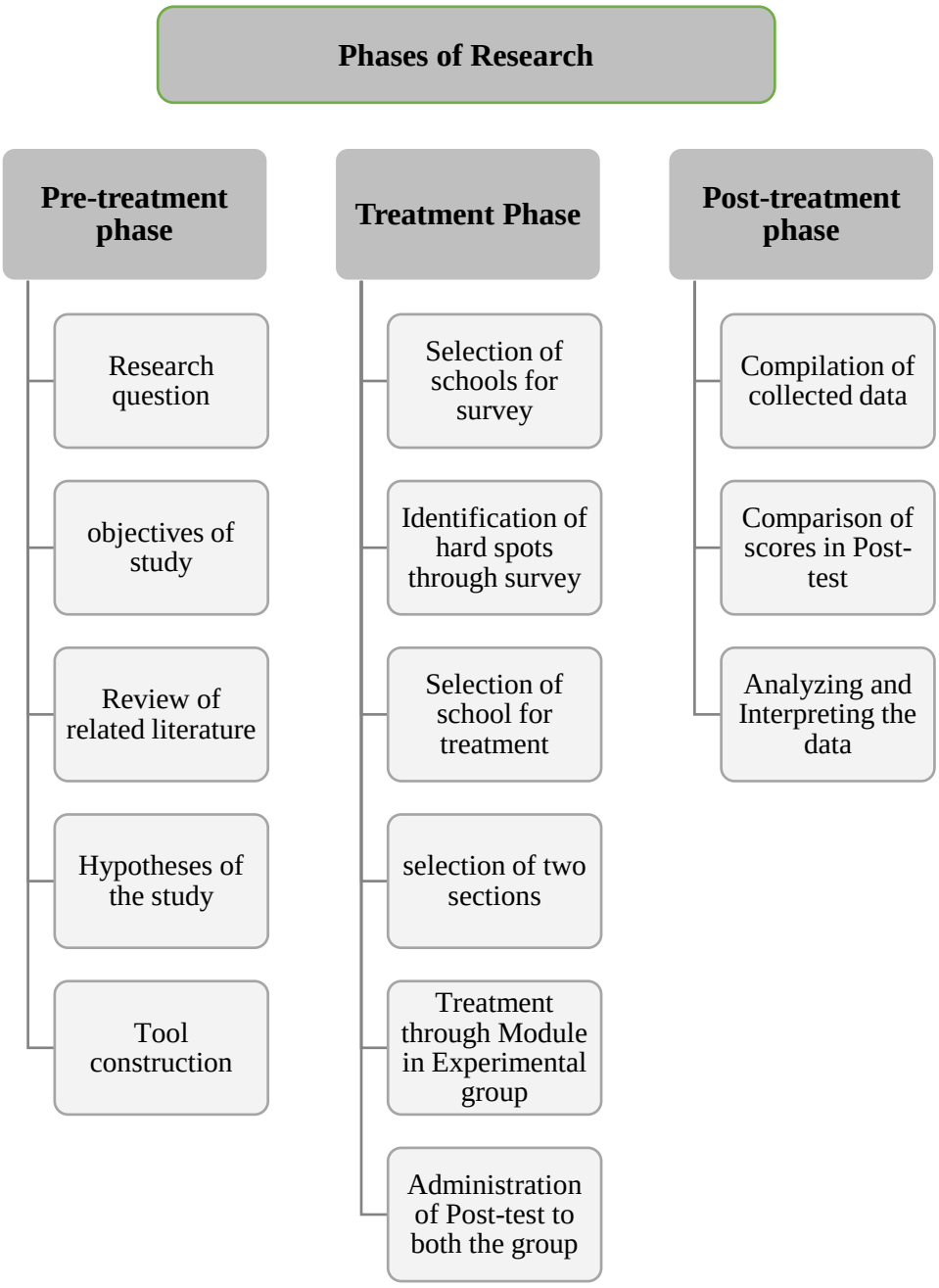

Fig 3.1: Phases of Research in the Present Study

The present study utilizes two groups, one experimental and one control group. The experimental group was exposed to experimental treatment 'Teaching through Module' and the control group was exposed to 'Conventional Lecture Method (CLM)'.

3.2 Variables of the study

Variables are the conditions or characteristics that the experimenter manipulates, controls or observes (Best and Khan, 2007). The present study being experimental, both independent and dependent variables have their own roles.

3.2.1 Independent variable

The independent variables are the conditions or characteristics that the experimenter manipulates or controls in his or her attempt to ascertain their relationship to observed phenomena. In educational research an independent variable may be a particular teaching method, type of teaching materials, a reward, a period of exposure to a particular condition, or an attribute such as sex or level of intelligence (Best and Khan, 2007).

For the present study instructional strategies were selected as the independent variable. These are:

1. Hard spots
2. Teaching through Module
3. Conventional Lecture Method

The strategy of instruction employed by the teacher has very important role in deciding the effectiveness of learning. In the present study two types of instructional strategies are made use of for experimentation. They are Teaching through Module and Conventional Lecture Method. It is assumed that the level of achievement of the pupils in Economics are influenced by the strategies of instruction they undergo. Here all the instructional strategies are likely to influence the dependent variable the achievement in Economics.

3.2.2 Dependent variable

The dependent variables are the conditions or characteristics that appear, disappear or change as the experimenter introduces, removes, or change independent variables (Best and Khan 2007). Here the dependent variable selected was the scores in the achievement test.

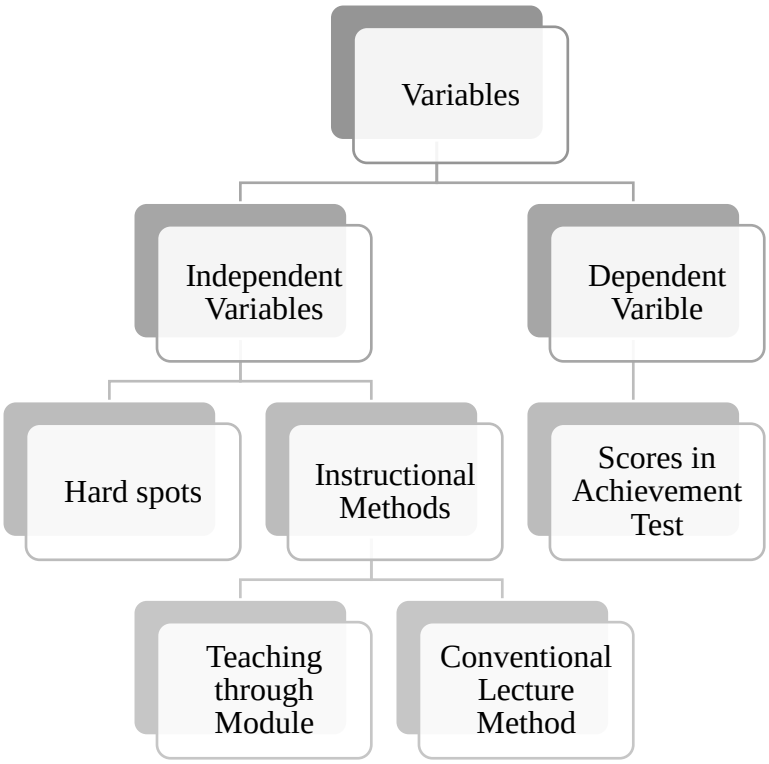

Fig 3.2: Flow chart showing Variables of the study.

3.3 Population

By population, we mean the aggregate or totality of objects or individuals regarding which information are to be made in a research study. A population is any group of individuals that have one or more characteristics in common that are of interest to the researcher. Population is the large group about which the investigator is going to make a study. According to Creswell (2012), population is a group of individuals who have the same characteristic.

3.3.1 Population of the Study

For the purpose of identification of the challenging spots in economics curriculum of class XIth the population includes students of economics of class XIIth and ITEP students and for the experimentation purpose population includes students of economics of class XIth of one the school of the district of Madhya Pradesh.

3.4 Sample of the Study

Sample is the part of population which contains the true characteristics of the population. "A Sample is a small portion of a population selected for observation and analysis. By observing the characteristics of the sample one can make certain inferences about the characteristics of

the population from which it is drawn" (Best and Khan, 2007). It is a collection consisting of a part or subset of the objects or individuals of population which is selected for the expressed purpose of representing the population which provides for generalisation. Generalisation is legitimate if the sample is representative of the larger population. This is an issue of external validity (Miller, 2007).

In the present study, purposive sampling technique was used. As per the method of the present study, the researcher has to teach all the students of both the control and experimental group to eliminate confounding variables and to check on the authenticity of the study. Thus, the school chosen was such that it would be feasible for the smooth conduction of study and collection of data.The sample selected for the present study is described below.

(a) As part of the qualitative study, survey method was adopted. The sample for the survey was 50 students selected by random sampling technique from Bhopal district of Madhya Pradesh. The details of the samples are given below.

Class	Name of School/college	No. of Students selected
XIIth	Subhash Excellence School, Bhopal	20
	Demonstration Multipurpose School, Bhopal	15
ITEP B.A.B.Ed	Regional Institute of Education, Bhopal	15
	Total	50

Table 3.1: Sample of students selected for the survey

(b) The aim of the study was to test the effectiveness of select instructional strategies like Teaching through Module and Conventional Lecture Method on overall achievement of the students. For this quantitative aspect of the study, the students of class XIth were selected as sample for the collection of data. Two groups were formed randomly named control and experimental. Thus, two sections of the XIth standard were chosen as sample. It includes all the students in the respective sizes of the particular school. The study was conducted on 35

students. The groups were formed randomly as XI-B as an experimental group having 18 students as a sample and XI-C as a control group having 17 students included in the sample.

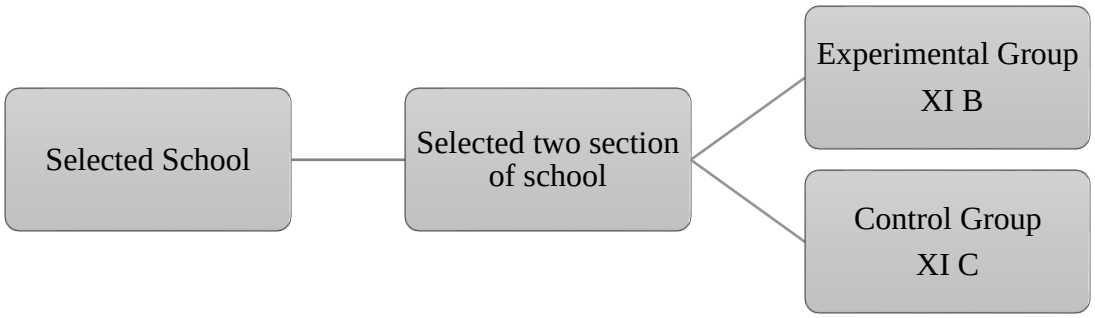

Fig 3.3: Sample selection in present study.

3.5 Description of Tools

The tools were constructed for collecting data and answering the research questions. The tools must be coherent with the objectives. The tools were developed in the study in phased manner. The present investigation was done in five stages. All the stages were planned systematically. A schematic representation of the different phases employed for the study is given below.

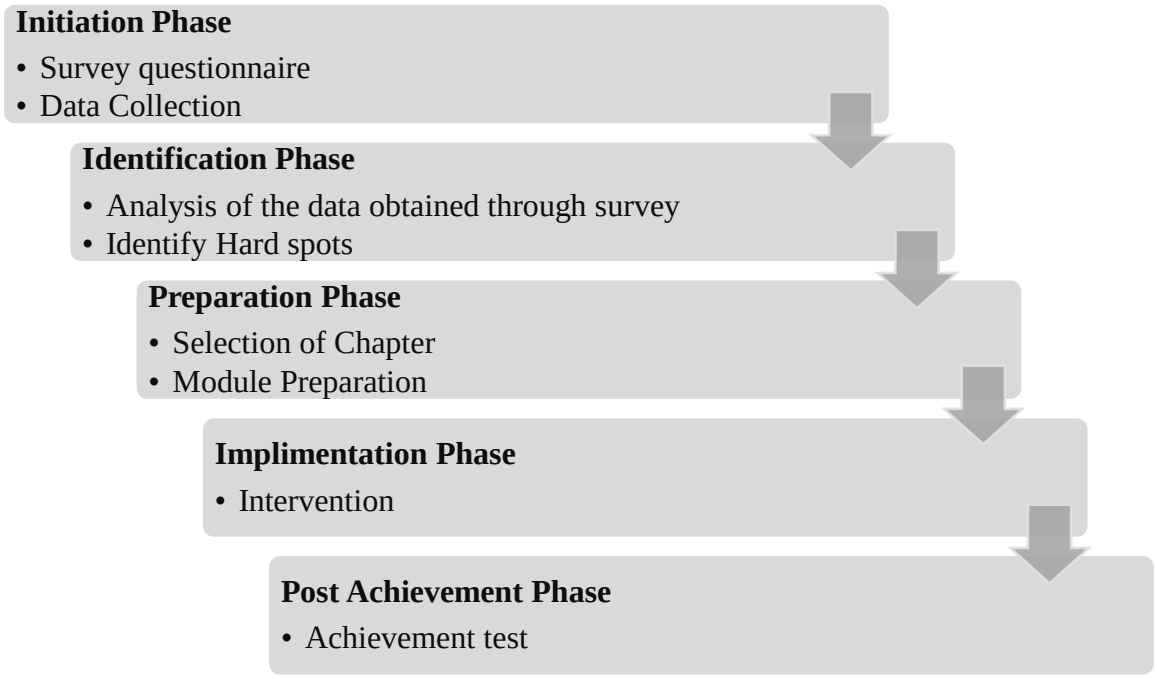

Fig 3.4: Phases of Tools development

Phase 1: Initiation phase

In this phase, the Researcher tried to find out to identify the hard spots experienced by the students in learning class XIth Economics. For this purpose, the researcher made thorough discussion with higher secondary school students. Based on this discussion, the Investigator prepared a questionnaire (with checklist of the chapters) comprising of 10 questions and administered on 50 class XIIth and ITEP B.A.B.Ed students. The questionnaire was designed to understand the opinion and feelings about the hard spots(difficult topics) in learning economics and also try to find out the preferred learning strategies or methods to learn economics according to the students. This survey revealed the gravity of the problem in qualitative dimension.

Phase 2: Identification Phase

In this phase, the Researcher analyse the data obtained in the survey and find out the Hard spots (difficult topics) in learning class XIth economics. Researcher also find some the preferred teaching-learning strategies to address the challenges.

Phase 3: Preparation Phase

In this phase, the Researcher prepared lesson transcripts based on Module developed by researcher for the remediation of the hard spots in learning class XIth Economics. This is done by giving due emphasise to areas identified as 'hard spots' in survey.

Phase 4: Implementation Phase

In this phase, the Researcher has given appropriate treatments to the two groups using the remedial materials prepared concerning the hard spots identified in the survey result. Here experimental group was treated with Teaching through Module (developed by the researcher) and Control group with Conventional Lecture Method.

Phase 5: Post Achievement Phase

After The Implementation Phase, the Researcher administered the Achievement Test as the posttest to both the groups in order to see the effectiveness of the selected strategies namely Teaching through Module with that of Conventional Lecture Method on achievement in learning Economics of the students of class XIth.

3.5.1 Development of Module in the Present Study

For the present study, researcher developed - self developed module, Posttest and survey. All these tools and techniques have been scrutinized and activities which were found to be inconsistent and impractical have been removed. The guide has further verified the final draft of all the tools and techniques.

When the module was ready to get implemented, the researcher visited various schools personally. As per the requirement of the present study, the researcher has to be the one actually teaching in the school. It is to avoid the intervention of various variables that might interfere with the quality of the study. Thus, the researcher applied the module all by themselves in the classroom of the selected school. After finalizing the school, the random chit method has selected for experimental group and control group between two sections of class Eleventh.

Tools and techniques were used in the present study to discover out the answers to research questions and objectives are as follows:

3.5.2 Content Analysis of Economics Textbook

Content analysis of textbook, specifically the Economics class XIth (Micro economics) NCERT textbook in the present study, becomes crucial because it is the first source of information available to students. Though the importance is laid on various pedagogies, strategies, and tools nowadays, the importance of a textbook in a classroom could not be compensated with any such thing. Thus, it becomes important to assess the parameters of a good textbook as it will make the basis of any teaching learning process. The nature of economics and its various components such as scientific attitude, various process skills, linkage between content and the real world, and critical thinking are very important when one needs to understand economics in a true manner. For this understanding to be developed, the inclusion of this nature of social science with its various parameters becomes essential in a textbook. The analysis also helps in the betterment of the teaching and learning process. All the subjects have different and specific pedagogy, so it becomes important to analyse the textbook critically. Every chapter has a different and specific learning outcome. Moreover, it becomes essential for any textbook to fulfill the basic parameters for the transmission of information to the students.

The critical analysis of the textbook might be done unto the following parameters:

- Learning Objective- Not just a unit, but each and every chapter has a different objective. In critical analysis, it is important to check whether the objectives are being achieved or not.

- Relevance- The relevance of the theoretical concepts with the contemporary scenario is important in economics textbook. As economics is a subject that works the best with real life situation, case study. It leads to the development of a society and nation.
- Readability- The readability depicts the reach of a textbook. Few crucial parameters for assessing its readability among masses are vocabulary, accuracy, and text language. The text should be simple and easy to understand. The words chosen should be the one which is used often in that region and the text written should not be contradictory to facts.
- Instructional effectiveness- For a textbook to be well balanced, it has to be checked for its instructional effectiveness, which impacts a textbook upon learners. It becomes crucial for a textbook to maintain a balance between its theoretical and practical content.
- Visual Depictions- The visual depictions in a economics textbook mainly consist of tables, graphs, concept mapping, real photographs and really important is the proper labelling of the diagram. Its presence in the textbook makes the textbook enriched in its outlook. It adds as an attractive feature of the textbook and helps in relating the content with real life by forming a link for the learner.

3.5.3 Achievement Test

Experimental design is often used when there has to be a comparison between two or more groups. Posttest type of design in nonequivalent groups used to study the impact of interventions. In the present study, there is a need to determine the degree of change in a variable in the control and the experimental group. The groups that have been assigned were random and without any bias or preconceived notion. This test was often used when a new methodology of teaching or intervention in the teaching learning process has to be studied. The test also addresses the direction of change and not only its mere presence. Further data analysis determine the implications of the treatment. In Posttest Group Design, both the control and experimental group were tested after the treatment. The respective difference between the posttest of these groups will determine the impact of an intervention in a study. The intervention would be given to the experiment group and not to the control group. This design has many benefits such as:

- Comparison of posttest results between the control and experimental group
- Promotes random group selection for nonbiased study
- Hint about the effectiveness of an intervention

- Study the change in posttest results in terms of its magnitude and direction.

3.6 Tools construction

All the tools were planned, finalized, and constructed only after discussing and continuous brainstorming with the supervisor. The research tools and their items were submitted regularly to the supervisor. The frequent screening of items helped in the refinement and revision of the items. Various drafts of all the tools were made over time, and the final products were adapted for the study.

The main stages for the construction of tools are:

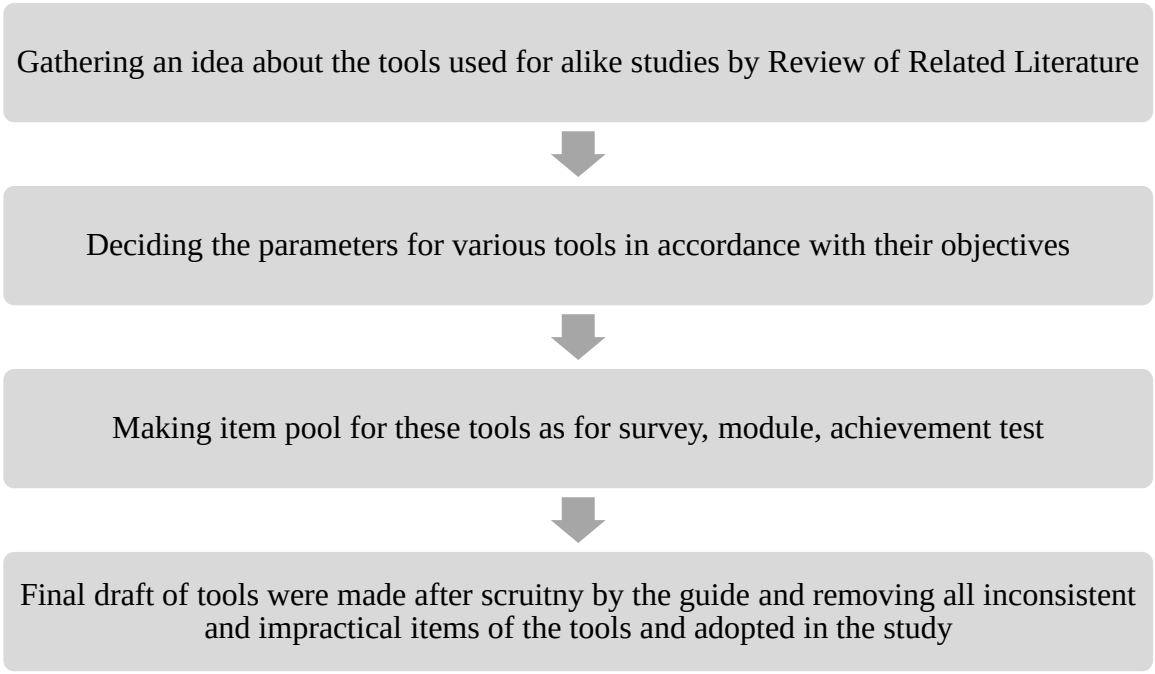

Fig 3.5: Stages of Tools Construction

3.7 Administration of Research Tool and Data Collection

Official permission from the principal of RIE Bhopal were taken before data collection. So that the researcher could go to school with a written form of permission in order to conduct the research. The researcher went to many secondary schools in Bhopal but most of the schools did not entertain some may be because of the exam time is near. Thus, after much struggle, the selected school agrees to entertain and thus, letting the researcher to conduct the study. First of all the survey is conducted among students of the selected school then the Experimental research has been done on the basis of the result the researcher got from the survey. One of the chapters of class XIth NCERT Economics textbook chosen for this study. Then the treatment is

given to the Experimental group for one week in the month of December 2024. At the end of the teaching through lecture method to control group and through the module to experimental group a Post test was conducted. The comparison between the two has been made. Names of the students has not been disclosed due to the matter of confidentiality which is assured to them by the researcher.

3.8 Conclusion

The research design of the study and tools were chosen to make the study authentic and to fulfill the objectives genuinely. The type of the study is mixed type, which covers the study in a wholesome manner. The experimental and control group were taken in their original respective sizes in the study. The tools were as per the objectives and these tools would eventually answers the research questions of the present study. All the tools were made by the researcher in the expert guidance of the supervisor. The tools were designed by the researcher and thus, it is made to best suit the research conditions and variables. The items of tools, which were impractical to do (in the case of module) were removed from the final draft of the tools. The final draft was also shown to supervisor before its adoption in the study. It helped the researcher to be planned in the approach of study, yet be flexible to allow the data to stream in. After the administration of tools, the data was collected and further analyzed to answer research questions and to fulfill the objectives of the present study.

Chapter 4

Analysis and Interpretation of Data

Chapter 4

Analysis and Interpretation of Data

4.1. Introduction

This chapter deals with the analysis and interpretation of data. Analysis of data means studying the organised material in order to discover the inherent facts. The data are studied from as many angles as possible to explore the new facts. (Koul, 1998). Statistical techniques have contributed greatly in gathering, organising, analysing and interpreting numerical data. Inferential or sampling statistics are used because they enable the researcher to make generalisations or inferences about population from the observations of the characteristics of samples. The process of analysis is the breaking down of complex factors into simpler parts and putting the part together in new arrangements for purposes of interpretation. Interpretation is the critical examination of the results obtained in the study.

The aim of research is to identify Challenging areas in learning economics and Effective teaching Strategy to address this for class XIth students of Bhopal district. In order to evaluate and understand, the data that was gathered and to describe and evaluate the study's findings in line with its goals, the scholar applied statistics. The analysis is done in two section in first section the analysis of questionnaire has been done and then in the second section the analysis of score obtained in achievement test is done.

Section 1

4.2. Analysis of Questionnaire

The Researcher conducted a preliminary survey among class XIIth students to find out the Challenging areas in learning economics. By the analysis of data collected through the questionnaire, the Investigator recognised that there is some of the difficulties experienced by students in learning economics at class XI. There are total 10 questions in the questionnaire to know the opinion and feelings about the hard spots in economics. It consists of three open ended questions and rest are checklists. The questionnaire was administered on 50 class XIIth and ITEP students. Responses were analysed and the details are given in the following tables.

4.3 Data Base:

The Data was collected from the following 3 institutes of Bhopal.

Sr. No.	Name of school/ Institute	No. of Students
1.	Govt. Subhash Excellence Higher Secondary, Bhopal	20
2.	Demonstration Multipurpose School (DMS), Bhopal	15
3.	Regional Institute of Education, Bhopal	15

Table 4.1 Sample of students selected for survey.

4.4 Analysis of data

Data are analysed on the basis of the Objectives formulated in the research are as follows:

Objective-1: To determine specific topics within 11th standard Economics that students find difficult.

For this objective the data are analysed on the basis of questions asked in the questionnaire-

4.4.1 Do you feel Economics is the most difficult subject in Higher secondary level?

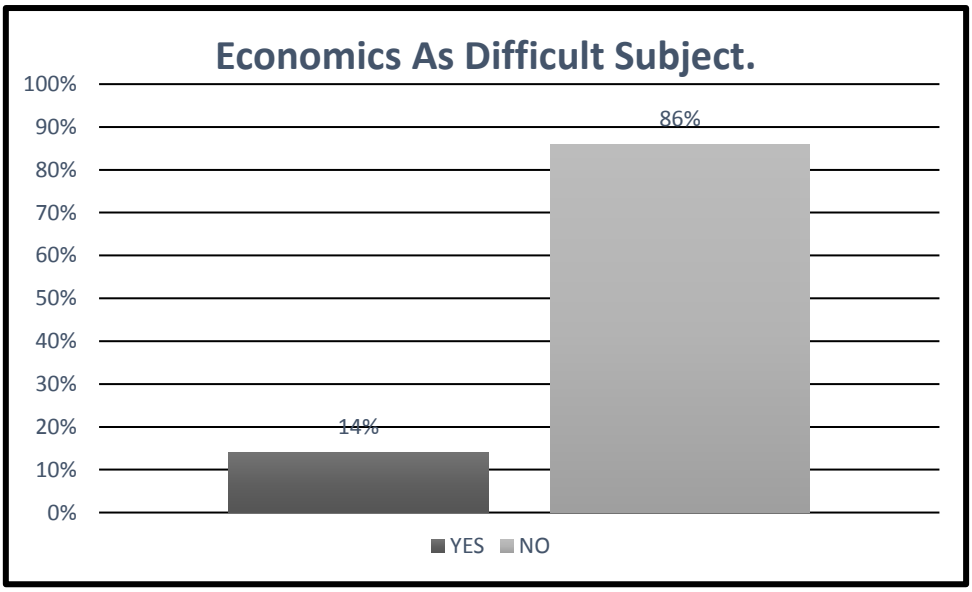

Fig 4.1 Student's response of economics as difficult subject.

A **significant majority (86%)** of respondents do not find Economics to be a difficult subject. This suggests that, for most students, the subject is either well-taught, accessible, or aligns with their learning preferences. **14%** of students (7 out of 50) **do perceive Economics as difficult**. This indicates a **s**mall but important group of learners who may be facing challenges possibly due to:

- Conceptual difficulty
- Teaching methods
- Lack of interest or prior knowledge
- Mathematical or theoretical content

While the general sentiment is positive, the 14% minority should not be ignored**.** the concerns of these students who struggle should be addressed proactively to ensure inclusive and effective learning for all.

4.4.2. Which area of Economics do you feel most difficult?

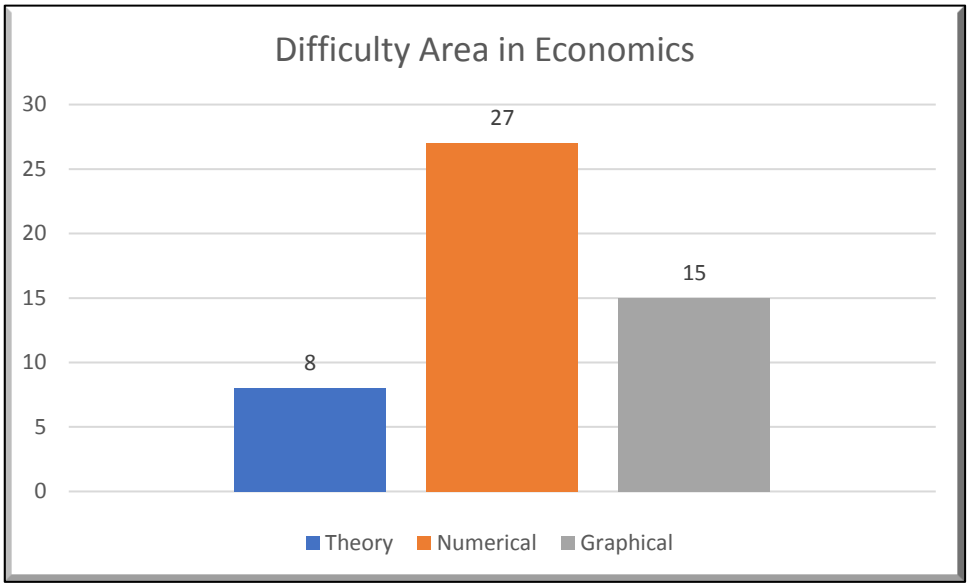

Fig4.2 Students' responses of difficult area in Economics

The analysis of student responses, as illustrated in the above bar chart reveals significant insights into the aspects of the subject perceived as most challenging. Among the 50 respondents, a majority—**27 students (54%)**—identified **numerical problems** as the most difficult area in Economics. This indicates a common struggle with mathematical applications, such as calculations, interpreting quantitative data, and applying formulas. The **graphical component** of Economics was reported as challenging by **15 students (30%)**, suggesting that

a substantial portion of learners find it difficult to understand and interpret economic diagrams, such as demand and supply curves or shifts in equilibrium. In contrast, only **8 students (16%)** found **theoretical concepts** difficult, implying that most students are relatively comfortable with conceptual understanding and textual content.

These findings highlight the need for a pedagogical shift toward supporting students in numerical and graphical aspects of Economics. Teachers may consider incorporating more practice-based learning, visual aids, interactive graphing tools, and step-by-step problem-solving exercises. While theoretical understanding is generally well-grasped, targeted interventions are essential to ensure that all students, particularly those struggling with calculations and diagrams, are adequately supported in their learning journey.

4.4.3. Which part you studied in your class XIth?

All the students marked the Micro Economics because schools are affiliated to CBSE board and in it this the portion of the syllabus of the class 11th.

4.4.4. Which chapter you find difficult to learn in Micro economics?

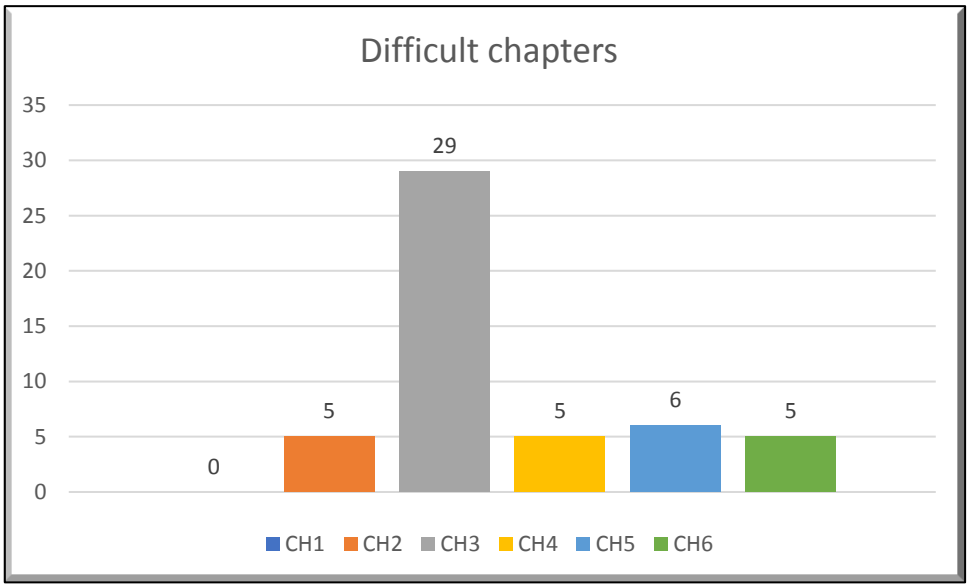

Fig4.3 Students' response on difficult chapters.

The chapter-wise response data on difficulty experienced by students in Class 11 Economics reveals **significant variation** in perceived challenge levels. The data shows that **Chapter 3 (CH3)** is overwhelmingly reported as the most difficult, with **29 (58%) students** indicating challenges in this chapter. This suggests that the content in CH3 may be **conceptually dense**, **analytically demanding**, or include **numerical/graphical elements** that students find hard to

grasp. In contrast, **Chapter 1 (CH1)** had **no responses**, indicating it is perceived as the least difficult or most accessible chapter—possibly due to introductory or familiar content.

Other chapters such as **CH2, CH4, CH5, and CH6** received a **moderate number of difficulty responses**, ranging from **5 (10%) to 6 (12%) students each**, implying that while they pose some challenge, they are not as significantly problematic as CH3. The relatively balanced numbers in these chapters suggest that students might struggle with certain concepts or sections, but not the entire chapter.

This analysis highlights the need for **intensifying instructional attention on Chapter 3**, such as simplifying difficult concepts, using more examples, or integrating visual aids.

4.4.5 Which part you find hardest one?

A significant number of respondents identified chapter 3 as particularly difficult, pointing to complex subtopics such as laws of production, cost curves, types of costs, returns to scale and marginal analysis. At the same time, the survey data also revealed that some students chose other chapters—including Chapters 2, 4, and 5—as difficult, reflecting variability in learning experiences and individual comprehension levels. Interestingly, **some students left this portion of the survey blank**, indicating either a lack of strong opinion, confusion about the question, or uncertainty in identifying a specific chapter as most difficult.

4.4.6 Preference of learning economics through-

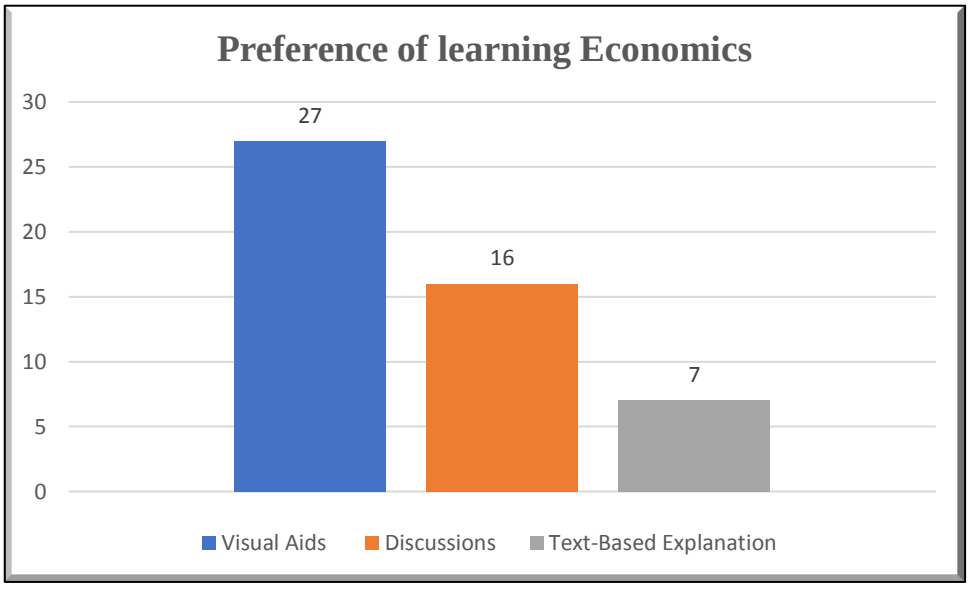

Fig4.4 Students' preference of learning Economics.

The analysis of student preferences for instructional methods in Economics reveals a clear inclination toward **visual learning strategies**. Out of the total responses, a **majority of students (54%)** indicated that they prefer **visual aids**—such as diagrams, charts, graphs, videos, and presentations—as their primary mode of understanding Economics. This highlights the importance of incorporating **visually engaging content** in teaching practices.

In comparison, **32% students** expressed a preference for **discussion-based learning**, suggesting that a significant portion of learners benefit from **interactive, collaborative environments** where they can engage in dialogue, ask questions, and clarify doubts. This preference points to the value of creating opportunities for **peer learning and teacher-student interaction** during classroom sessions.

Only **14% students** preferred **text-based explanations**, indicating that **traditional lecture and textbook-driven methods** are the least favoured. While these methods remain important for detailed reading and theoretical grounding, the data suggests that relying solely on text may not be the most effective approach for the majority of students.

In conclusion, the findings advocate for a **blended teaching approach**, with a strong emphasis on visual aids supported by interactive discussions. Such a strategy can cater to diverse learning styles, increase student engagement, and enhance overall comprehension in Economics instruction.

4.4.7. What methods do you think would help you to improve your understanding of Economics?

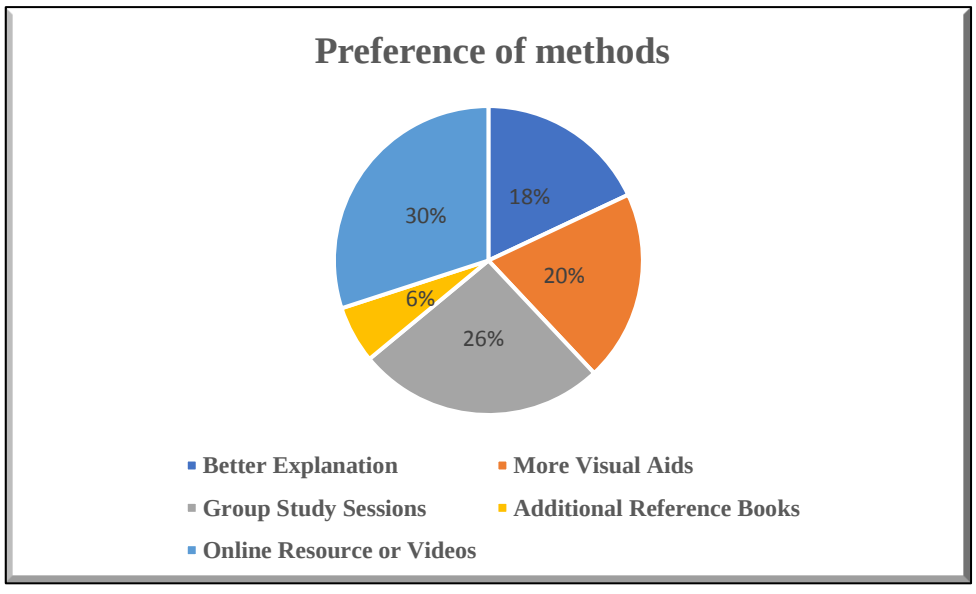

Fig 4.5 Preference of methods

When asked what could help them better understand Economics, students shared insights that speak volumes about how they learn best in today's classroom. The most common suggestion, chosen by **30% students**, was the use of **online resources or educational videos**. This clearly reflects how comfortable and engaged students feel when learning through multimedia. Many find it easier to grasp complex economic ideas when they can pause, replay, or visually follow a concept explained in a video format—something textbooks can't quite offer.

Group study sessions were the next most popular response, with **26% students** seeing them as valuable. This shows that students don't want to learn alone—they want to collaborate, discuss, and help each other out.

Visual aids like diagrams, flowcharts, and infographics were suggested by **20% students**. It's no surprise—many students process information better when they can see how different concepts connect, rather than just read about them. Visual tools can simplify what seems complicated and make lessons more engaging.

Interestingly, **18% students** felt that what they needed most was simply a **better explanation**. This is an important reminder that sometimes the issue isn't with the content, but with how it's taught. Students are asking for clearer, more relatable teaching, where concepts are broken down and delivered in ways they can truly connect with.

Finally, only **6% students** felt that **additional reference books** would help. This suggests that while extra reading can be useful, most students prefer more interactive, modern, and practical approaches to learning over traditional methods.

Overall, the message from students is clear: they want **engaging, visual, and supportive learning experiences**—not just more content. As educators, responding to these voices by integrating **technology, collaboration, and clarity** into our teaching can make Economics not only easier to understand, but genuinely more enjoyable to learn.

4.4.8. Do you feel the economics you read in your classroom is relatable and applicable in your real-life situations?

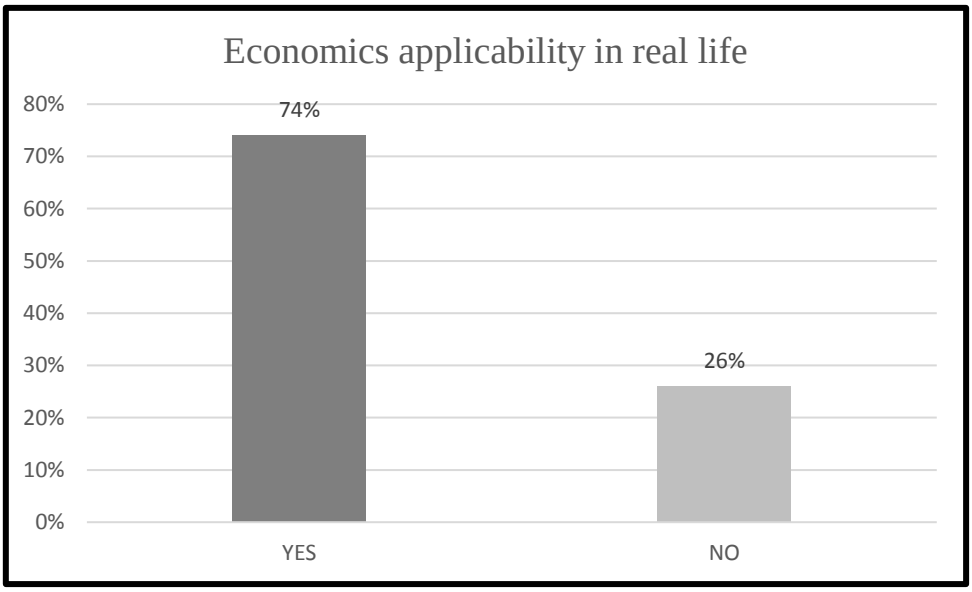

Fig 4.6 Applicability of Economics in real life.

Data revealed that a strong majority of students 37 out of 50 (**74%)** find the Economics they learn in class to be relatable and applicable to real-life situations, indicating that many are able to connect classroom concepts to everyday experiences like budgeting, decision-making, and understanding market behaviour. However, **13 (26%)** students expressed that they do not see this relevance, suggesting a gap between theoretical learning and practical application for some. This highlights the need for more real-world examples, case studies, and interactive teaching methods to ensure that all students can see the practical value of Economics in their daily lives.

4.5 Conclusion

This section depicts the findings and conclusions that emerged from the analysis of questionnaire for students. The major conclusions pertaining to this section are given below.

- A **significant majority (86%)** of respondents do not find Economics to be a difficult subject.
- A majority of **54% students**—identified **numerical problems** as the most difficult area in Economics
- The **graphical component** of Economics was reported as challenging by **30% students.**
- Only **16% students** found **theoretical concepts** difficult.

- **Chapter 3 (Production and cost)** is overwhelmingly reported as the most difficult, with **58% students** indicating challenges in this chapter and **Chapter 1 (Introduction)** is found to be the least difficult one with no students found it difficult. While **10% students** found **Chapter 2 (Theory of consumer behaviour), Chapter 4 (The theory of the firm under perfect competition) and Chapter 6 (Non- competitive market)** as the most difficult chapter and **12% students** found **Chapter 5 (Market equilibrium)** as the most difficult one**.**
- A majority of students (**54%**) indicated that they prefer **visual aids**—such as diagrams, charts, graphs, videos, and presentations—as their primary mode of understanding Economics. **32%** students expressed a preference for **discussion-based learning** and Only **14%** students preferred **text-based explanations**, indicating that traditional lecture and textbook-driven methods.
- For better understanding of Economics, the most common suggestion, chosen by **30% students**, was the use of **online resources or educational videos. 26% students** suggest **Group study sessions, 20% students** choses **Visual aids, 18% students** opt for a **better explanation** and only **6% students** suggest **additional reference books**.
- A strong majority of students **74%** find the Economics they learn in classroom to be relatable and applicable to real-life situations, indicating that many are able to connect classroom concepts to everyday experiences.

Section 2

4.6 Analysis of Achievement Test

The Researcher conducted an Achievement test (post-test) among both the group of Experimental and Control group of class XIth students to find out the Effectiveness of the Module made by the researcher. The test consists of total 25 multiple choice questions carrying 1 mark each. The test was administered on total 35(18+17) students of class XIth in which 18 experimental group students and 17 control group students. The scores were tabulated and then the mean, Standard Deviation and t-value of the variables were calculated. The details are given below.

Group	N	Mean	SD	D	df	Calculated t-value	Remarks
Control	17	10.94	3.39	2.39	33	1.736	Not Significant
Experimental	18	13.33	4.32				

Here, N=Number(size of sample), SD=Standard Deviation, D= Mean Difference, df= Degree of freedom

Table 4.2 Statistical value of achievement scores.

From the above table 4.5, it is evident that the calculated t-value for 33 degree of freedom is found to be 1.736. and the tabulated t-value for 33 degree of freedom at 0.05 level of significance is 2.035 that is the calculated t-value is smaller than tabulated t-value (1.736 < 2.035) which means the difference is not significant at 0.05 level of significance. Therefore, we have to accept the null hypothesis. This show that there is no significant difference between the mean of achievement score of control group and experimental group.

4.5.1 Interpretation

The mean score of the experimental and control group is 13.33 and 10.94 respectively. The difference between these two means is 2.39, which is in the favour of experimental group but the difference is not significant.

4.5.2 Justification

In the present study, the sample chosen by the investigator has examination after some time so the readiness of learning apart from their examination syllabus impacted their interest and attitude in learning. Due to small size of sample and less intervention time also impacted the intended result that researcher tries to achieve.

Chapter 5
Summary, Findings and Conclusion

Chapter 5
Summary, Findings and Conclusion

5.1 Introduction

The focus of the present study was to identify and address challenging areas in XIth standard economics and develop effective teaching strategies for its remediation. This study also intent to compare the effectiveness of this developed strategies with Conventional Lecture Method on overall achievement of students.

This chapter gives a brief summary of the study in retrospect which includes statement of the problem, objectives of the study, hypotheses formulated for the study, methodology in brief, variables in the study, tools used, procedure of data collection and the statistical techniques used. The major part of this chapter deals with the conclusions drawn out of the analysis. The educational implications which are the contributions of the study and suggestions for further research are also included at the end of this chapter.

5.2 The Study in Retrospect

In the present study the Investigator has made an attempt to find out the relative effectiveness of developed strategies for remediation of the hard spots with that of Conventional Lecture Method on the achievement in Economics' students of class XIth.

5.2.1 Restatement of Problem

Since the focus of the study was identifying the challenging areas in learning economics at class XIth level, develop remedial instructional strategies and to compare their effectiveness with Conventional Lecture Method on overall achievement of students, the problem under investigation is entitled as "Identifying and Addressing Challenging Areas in 11th Standard Economics: A Focus on Effective Teaching Strategies".

5.2.2 Variables for the Study

The independent variables consider in the study are hard spots, select instructional strategies like Teaching through Module and Conventional Lecture Method. The dependent variable selected was the scores in the achievement test.

5.2.3 Objectives of the study

The objectives tried to be attained in this study are as follows:

1. To determine specific topics within 11th standard Economics that students find difficult.
2. To develop effective strategy to enhance understanding of the topic and to improve in their achievement, different modes of instruction in the form of pictures, videos (in the case of e-content), activities, text, graphs, visual media (Power Point Slides), traditional method (Lectures), case studies are included.

   Apart from the above stated objectives, the other implicit objectives are:

   1. To develop the package for the identified challenging topics
   2. To develop the achievement test in that topic of Economics.

5.2.4 Methodology in Brief

Survey cum Experimental method was adopted for the conduct of study The Investigator identified the challenging areas (hard spots) and developed select instructional strategies in Economics and tried to find out their effectiveness by comparing them with the Conventional Lecture Method. For the development of the select instructional strategies the Investigator selected the chapter 3 'Production and Cost' from the standard XI Economics NCERT text book as identified through the survey conducted by the investigator. Post Test only control group design was followed. There were one experimental and one control groups. The experimental group was taught through developed instructional strategy (Teaching through Module) while the control group was taught through Conventional Lecture Method.

5.2.5 Data Gathering tools used in the study

The tools and materials used for the present study were-

1. Questionnaire for the students to find out the challenging areas for them in learning Economics at class 11^{th} level (prepared by the Investigator).
2. Achievement test in Economics (prepared by the Investigator).
3. Module based lesson plan (prepared by the Investigator).

5.3 Major Findings and Conclusion

The major findings and conclusions of the study have been presented under the following heads-

1. Conclusions arrived from the analysis of Questionnaires.
2. Conclusions arrived from analysis of Achievement Test.

5.3.1 Conclusions arrived from the analysis of Questionnaires.

This section depicts the findings and conclusions that emerged from the analysis of questionnaire for students. The major conclusions pertaining to this section are given below.

- A **significant majority (86%)** of respondents do not find Economics to be a difficult subject.
- A majority of **54% students**—identified **numerical problems** as the most difficult area in Economics
- The **graphical component** of Economics was reported as challenging by **30% students.**
- Only **16% students** found **theoretical concepts** difficult.
- **Chapter 3 (Production and cost)** is overwhelmingly reported as the most difficult, with **58% students** indicating challenges in this chapter and **Chapter 1 (Introduction)** is found to be the least difficult one with no students found it difficult. While **10% students** found **Chapter 2 (Theory of consumer behaviour), Chapter 4 (The theory of the firm under perfect competition) and Chapter 6 (Non- competitive market)** as the most difficult chapter and **12% students** found **Chapter 5 (Market equilibrium)** as the most difficult one**.**
- A majority of students (**54%**) indicated that they prefer **visual aids**—such as diagrams, charts, graphs, videos, and presentations—as their primary mode of understanding Economics. **32%** students expressed a preference for **discussion-based learning** and Only **14%** students preferred **text-based explanations**, indicating that traditional lecture and textbook-driven methods.
- For better understanding of Economics, the most common suggestion, chosen by **30% students**, was the use of **online resources or educational videos. 26% students** suggest **Group study sessions, 20% students** choose **Visual aids,** 18**% students** opt for a **better explanation** and only **6% students** suggest **additional reference books**.
- A strong majority of students **74%** find the Economics they learn in classroom to be relatable and applicable to real-life situations, indicating that many are able to connect classroom concepts to everyday experiences.

5.3.2. Conclusions arrived from Analysis of Achievement Test

The calculated t-value for **33 degree of freedom** is found to be **1.736** which is not significant at **0.05 level of significance**. Therefore, we have to accept the null hypothesis. This show that there is **no significant difference** between the mean of achievement score of control group and experimental group.

The mean scores of the experimental and control groups are **13.33** and **10.94** respectively. The difference between these two means is **2.39**, which is in the favour of experimental group but the difference is not statistically significant.

5.4. Tenability of the Hypotheses

The study provided sufficient evidences to affirm the validity of hypothesis set for it. An attempt has been made to examine the validity of the hypothesis.

Hypothesis 1 (H_0): Implementing targeted teaching strategies will lead to a statistically no significant improvement in student understanding and performance in Economics.

The analysis by the t-test of the post test scores of students taught through Module and Conventional Lecture Method on total achievement shows that the mean of the post test scores of the experimental group is not significantly higher than that of the control group. The findings of the study substantiate the hypothesis and hence **Hypothesis 1 is accepted.**

5.5 Suggestions for Further Research

On the basis of the findings and conclusions of the study, the following suggestions and recommendations are made. Related studies may extend the scope of present one and further generalizations would be possible.

- Since the developed instructional strategy is not significantly enhanced the achievement of students in Economics of class XI^{th}, this may be because of less time given for intervention and a smaller number of students included in study so the similar study could be conducted giving more intervention time and number of students.
- Similar study could be conducted using a different population in same subject.
- Since there is no significant difference in the achievement of students who were taught through Module, Teachers can adopt additional input so as to make Module based teaching more effective.
- The present study has been limited to only two schools in Bhopal district. Investigations could be attempted in respect of other institutions incorporating large sample size and a greater number of experimental and control groups for more reliable results.

- It is further recommended that a similar study could be conducted using a different population like secondary school or upper primary level in other subjects.
- Survey could be conducted to find out the awareness of Teachers on different new instructional practices available.
- Studies could be conducted to find out the extend of utilization of modern approaches by Teachers in our classroom situations.
- Survey could be conducted to collect opinion of students on developed instructional strategies

Bibliography

Ajayakumar, G. (2015). *Identification of the hard spots in learning organic chemistry at higher secondary level and developing select strategies for its remediation* (Master's thesis, Mahatma Gandhi University, Kottayam).

Areekkuzhiyil, S. (2014). Joyful learning of economics at secondary schools. In *National Seminar on Economic Curriculum in Schools: Emerging Trends and Challenges* (pp. 1–7). New Delhi: Santhosh Areekkuzhiyil.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.

Das, K. (2016, June). The role and impact of ICT in improving the quality of education: An overview. *International Journal of Interdisciplinary Studies in Social Sciences*, *4*(6). https://www.ijissh.org

Garrett, H. E. (2005). *Statistics in psychology and education*. New Delhi: Paragon International Publishers.

John, S. (2019, December). *Effect of brain-based learning strategy on higher order thinking skills and achievement in Economics among students at higher secondary level* (Master's thesis, Mahatma Gandhi University, Kottayam).

Klasen, K. J., & Willoughby, K. A. (2003). In-class simulation game: Assessing student learning. *Journal of Information Technology Education: Research*, *2*(3), 1–11. https://doi.org/10.28945/287

National Council of Educational Research and Training. (2005). *National curriculum framework*. New Delhi, India.

National Council on Economic Education. (2011). *Economics: A framework for understanding and teaching*. New York.

Nazeer, A. (2006). *Teaching economics at secondary school level in the Maldives: A cooperative learning model* [Master's thesis, University of Waikato]. http://hdl.handle.net/10289/2540

NEP. (2020). *National Education Policy*. Ministry of Human Resource Development, Government of India.

Patel, A. S. (2021, June). *Effectiveness of active learning programme in advanced economics for higher secondary level* (Master's thesis, Sardar Patel University, Gujarat).

Paul, I. (2012). *Developing certain strategies for the transaction of curriculum in commerce at the level of higher secondary education* (Doctoral dissertation, Mahatma Gandhi University, Kottayam).

PoA. (1992). *Programme of Action, 1992*. Ministry of Human Resource Development, Government of India.

Rani, G. (2013). *Efficacy of different instructional media on academic achievement and self-concept of class 12 students* (Doctoral dissertation, Kurukshetra University, Haryana).

Robinson, W., & Davis, J. E. (1999). Technology, the economics profession, and pre-college economic education. *Journal of Education, 181*(3), 77–90.

Sabapathy, T. (2014). *Innovative methods of teaching economics at secondary school level.* Paper presented at the National Seminar on Economic Curriculum in Schools: Emerging Trends and Challenges.

Appendix 1

Questionnaire to identify the difficult topics/concepts of Class 11th Economics

Name of the student:

Name of the school:

Class: Sex:

Age: Date:

This form is designed to understand your opinion and feelings about the hard spots (difficult topics) in economics. Please respond honestly as there is no right or wrong answers. Please read each statement carefully and mark your response with a tick (✓)

1. Do you feel Economics is the most difficult subject in Higher Secondary Level?
   Yes ( ) No ( )
2. Which area of the Economics, that you feel most difficult?
   Theory ( ) Numerical( ) Graphical( )
3. Which part you had studied in your class 11th?
   Micro ( ) Macro ( )
4. Tick the chapter/chapters and related concepts within that chapter you find difficult to learn in Micro economics.

Chapter 1. Introduction ( )

(A) Central problems of Economy.
(B) Positive and Normative Economics
(C) Microeconomics and macroeconomics.
(D) Centrally planned economics and market economics.
(E) Opportunity cost.

Chapter 2. Theory of consumer behaviour ( )

(A) Budget line
(B) Shift in budget line
(C) Preference of consumer
(D) Indifference curve
(E) Substitution between two goods
(F) Concept of utility (Marginal utility/ total utility)
(G) Law of demand and demand curve
(H) Shift in demand curve
(I) Elasticity of demand

Chapter 3. Production and costs ( )

(A) Long run and short run production function
(B) Shapes of Total product/average product /marginal product
(C) The law of Diminishing Marginal Product and the law of variable proportions
(D) Returns to scale
(E) Short run and long run costs.

Chapter 4. The theory of the firm under perfect competition ( )

(A) Perfect competition

(B) Profit maximisation conditions and its graphical representation
(C) Short run and long run supply curve
(D) Break-even point
(E) Determinants of firm's supply curve (technological progress/ input prices/ unit tax.)
(F) Geometric method of price elasticity of supply
(G) Market supply curve

Chapter 5. Market equilibrium ( )

(A) Equilibrium, excess demand, excess supply
(B) Wage determination
(C) Marginal product of labour
(D) Price ceiling and price floor

Chapter 6. Non-competitive Markets ( )

(A) Monopoly market demand curve and average revenue curve
(B) Total /average/ marginal revenues
(C) Short run equilibrium of the Monopoly firm
(D) Monopolistic competition and Oligopoly firms behaviour.

5. Which part of your Economics textbook or study material you find the hardest to understand in class 11th? (Please specify the chapters, sections, or topics.)

……
……..

6. You prefer learning Economics through-
   ( ) Visual aids (graphs, charts, diagrams)
   ( ) Discussions (group studies, peer learning)
   ( ) Text-based explanations (books, notes)

7. What methods do you think would help you to improve your understanding of Economics?
   ( ) More practice problems and exercises
   ( ) Better explanation of concepts in class
   ( ) More visual aids (charts, graphs, etc.)
   ( ) Group study sessions
   ( ) Additional reference books
   ( ) Online resources or videos
   ( ) Other (please specify)

8. Do you feel the economics you read in your classroom is relatable and applicable in your real life situations.
   Yes ( ) No( )

9. Are there any specific suggestions you have for your teacher to help you to understand Economics better?
   ……

10. Would you like to share any additional comments regarding your experience with Economics?
    ……

Appendix 2

Achievement Test: Production and Costs

Class: 11th **Subject**: Economics **Time**: 30 Min
Max. Marks: 25

General Instructions:

1. Read each question carefully before answering.
2. There are 25 multiple-choice questions (MCQs) carries 1 mark each.
3. Choose the most appropriate option (A, B, C, or D) for each question.
4. Mark your answer clearly on the answer sheet.
5. There is no penalty or negative marking for incorrect answer/s.
6. Do not use any external aids, including calculators or mobile phones, during the test.

---

1. **The total product of a firm refers to:**
   A. The total output produced by all the factors of production.
   B. The total input of only one factor of production.
   C. The total cost incurred in producing a particular level of output.
   D. None of the above
2. **Which of the following is true regarding the marginal product?**
   A. It always increases as more units of variable input are added.
   B. It initially increases, reaches a maximum, and then decreases.
   C. It is always negative.
   D. It has no relation with the total product.
3. **The law of diminishing marginal product states that:**
   A. Marginal product decreases as more units of a variable factor are added, keeping other factors fixed.
   B. The total product will eventually decline as more inputs are added.
   C. Marginal product increases as more units of variable factor are added.
   D. None of the above.
4. **The shape of the total product curve is:**
   A. Downward sloping.
   B. Upward sloping and convex.
   C. S-shaped curve.
   D. None of the above.
5. **Which of the following is true in short run?**
   A. Some factors are fixed.
   B. The law of diminishing marginal returns is not applicable.
   C. All the factors of production can be varied.
   D. None of the above is true.
6. **Which of the following is a characteristic of the long-run average cost curve?**
   A. It is U-shaped.

B. It slopes upwards as output increases.
C. It is straight and upward sloping.
D. It is horizontal.

7. Find out the maximum possible output for a firm with zero unit of L and 10 units of K when its production function is $Q = 5L + 2K$

A. 200
B. 70
C. 20
D. Can't be determined.

8. In the short-run, total cost (TC) is the sum of:

A. Fixed cost only
B. Variable cost only
C. Fixed and variable cost.
D. Marginal cost and average cost.

9. Which of the following is the increasing returns to scale?

A. Increase in one of the factors results in greater proportional increases in output.
B. Increase in one of the factors results in less proportional increases in output.
C. Increase in one of the factors results in same proportional increases in output.
D. Decrease in the production.

10. If increase in one of the factors by 5 units results in increase in output by 8 units, it is said:

A. Constant returns to scale.
B. Increasing returns to scale.
C. Decreasing returns to scale.
D. None of the above.

11. If 2 workers produce 300 pens and 3 workers produce 450 pens, the marginal product of the third worker is:

A. 100
B. 250
C. 150
D. 750

12. **If AP of 5 workers is 130, then what will be the TP.**

A. 135
B. 125
C. 650
D. 26

13. What happens to the total cost (TC) as production increases?

A. It increases at a decreasing rate.
B. It increases at an increasing rate.
C. It decreases as output increases.
D. It remains constant.

14. Which of the following is true regarding the total product (TP) curve?

A. The TP curve initially increases at an increasing rate, then at a decreasing rate.
B. The TP curve is always upward sloping.

C. The TP curve decreases with increase in input.
D. The TP curve is always concave.

15. Which is the Cobb- Douglas production function?

A. $Q = 2K+5L$
B. $Q = K^5L^2$
C. $Q = MP+TP$
D. None of the above.

16. Find the total output of a firm whose production function is $Q = 5\,L^{1/2}K^{1/2}$ with 100 units of L and 100 units of K.

A. 200
B. 500
C. 10000
D. 10

17. **The formula to calculate Marginal Product (MP) is**

A. TP/L
B. AP/L
C. TP*AP
D. L/TP

18. _____ is the relationship between input and output.

A. Economies of scale.
B. Production function.
C. Total product.
D. Marginal product.

19. Short run marginal cost (SMC) curve cuts short run average cost (SAC) from:

A. Below
B. Above
C. Do not cut.
D. Tangent

20. The average fixed cost (AFC) curve is:

A. Horizontal
B. Rectangular hyperbola.
C. Vertical
D. None of the above

21. **Calculate the MP for the 4th and 5th factor input from the given table.**

Factor 1	TP	MP
1	15	-
2	20	5
3	26	6
4	30	_____
5	34	_____

A. 8,4
B. 3,5
C. 4,4

D. 5,5

22. When marginal product (MP) equals to average product (AP)

A. MP is maximum.
B. AP is maximum
C. AP is minimum
D. MP is minimum

23. In long-run

A. All inputs are variable.
B. Only one input is variable.
C. One input is fixed.
D. Same as short-run

24. Marginal Product (MP) curve cuts Average Product (AP) curve from

A. Below
B. Above
C. Do not cut
D. None of the above

25. When MP > AP

A. AP is falling
B. AP is constant
C. AP is increasing
D. None of the above.