

STUDY OF THE APPLICATION OF STATISTICS IN EDUCATION

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ABSTRACT

Today, most people think that there is no use of statistics in education, a subject that does not seem to be directly related to data, or does not understand the use of statistics in education. Statistics plays a vital role in education, enabling educators to make data-driven decisions, evaluate student performance, and improve learning outcomes. By applying statistical techniques, educators can uncover patterns, trends, and correlations in student data, ultimately enhancing student success and academic achievement. The application of statistics in education enhances decision-making, improves student outcomes, and informs instructional strategies.

Keyword: - Applied Analysis, Statistics, Educational Statistics, etc....

1. TITLE-1 INTRODUCTION

Statistics is the science of collecting, analyzing, and interpreting data to inform decisions and understand patterns. In today's society, most people think that there is no use of statistics in education, a subject that does not seem to be directly related to data, or do not understand the specific use of statistics in education. However, in fact, it is just the opposite. The application of statistics in educational research promotes the development of educational activities themselves. The word statistic originally refers to the comprehensive calculation of the quantity relationship of a large number of things. The field of statistics is concerned with collecting, analyzing, interpreting, and presenting data. Statistics also assist us in understanding how things change over time.

It matter because:

- a. Statistics allows educators to compare different teaching methods using hypothesis tests.
- b. Statistics allows educators to spot trends in student performance using data visualizations.
- c. Statistics allows educators to understand student performance using descriptive statistics.

1.1 Sub Title-1 Definition of Statistics

Statistics is a branch of mathematics that deals with the collection, analysis, interpretation, presentation, and organization of data. It provides methods for making sense of quantitative information and drawing conclusions or making decisions based on data. The term "statistics" comes from the Latin word "status," which means "condition or status." As a result, the process of enumeration by which a state or condition is determined is known as statistics.

1.2 Sub Title-2 Origin of Statistics

The origin of statistics can be traced back to the 18th century, evolving in response to the needs of industrializing so vereign states. Initially, the term referred to information about states, particularly demographics, but it later expanded to encompass all types of information collection and analysis. Educational statistics can help decision makers explore the nature of educational phenomena and the relationship between various educational phenomena. Everything has both quality and quantity

2. TITLE-2 ANALYSIS

2.1 Need Importance and Uses of Statistics:

1. Group Comparison: A class's achievements are not uniform across subjects. It has been discovered that one class is progressing quicker in one subject while another is progressing in another. Even different portions of the same class do not progress in the same manner.

2. Individual Comparison: Statistics aids in the individual comparison of students of varying ages, talents, and IQ levels. Statistics explain why students who are similar in every other way do not attain the same level of success in one topic.

3. Educational and Vocational Guidance: Every student differs from others in terms of intellectual capacity, interests, attitude, and mental abilities. Students are offered educational and vocational counseling in order to make the most use of their qualities, and the process of guidance is based only on statistics.

4. Educational Experiments and Research: The goals, curricula, and methods of teaching change as the location, line, and conditions change. Without the use of statistics, research and experimentation cannot become accurate and valid. **5. Essential for Professional**

2.2 Sub Title-1 Application of Education Statistics in Education Management

In the process of teaching, in order to improve the quality of teaching, teachers must be familiar with their educational objects, understand the learning situation of students, and analyze the characteristics of the distribution of students' overall development and existing problems. The progress of these works is indispensable to the application of statistical methods. Education statistics, as an important work in education management, is not only related to whether the local education department can make scientific decisions and scientific management, but also related to the overall situation of promoting the comprehensive, coordinated and sustainable development of schools and making efforts to do a good job of education to satisfy the people. In modern management, people systematically collect, sort out and analyze relevant statistical data to reveal the inherent regularity and inevitability of a large number of accidental events or random phenomena, so that managers can grasp the management elements to improve the quality of management. Similarly, educational statistics is also one of the indispensable scientific methods in modern educational management activities. In modern education management, people need to use the method of education statistics to investigate various educational activities and educational phenomena, and to collect various data systems.

2.3 Sub Title-2 The Status and Application of Educational Statistics in Educational Decision-making

All kinds of educational phenomena are related and restricted to each other. Correlation analysis in educational statistics can assist us in determining the relationship between two or more educational phenomena as well as the degree of closeness of the relationship based on the quantitative aspects of various educational phenomena. Every work has both quality and quantity. These two aspects are dialectically unified; when we study things, we should first understand the attributes of things, find out the difference between them and other things, and determine the quality of things. At the same time, we should also pay attention to the quantity of things and phenomena.

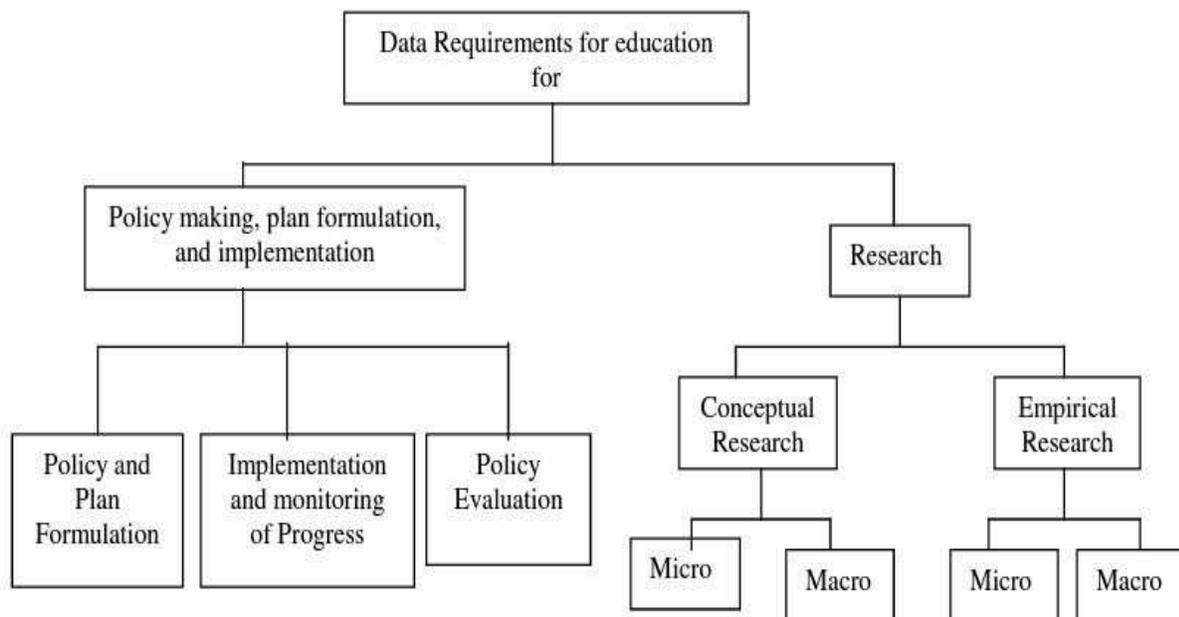
3. TITLE-3 Application of Statistics to improve Educational Quality

1. Descriptive Statistics: In an education setting, a teacher might calculate the following descriptive statistics for students in her class

- The mean score on a certain exam.
- The standard deviation of scores on a certain exam.
- The range of scores on a certain exam.
- The percentage of students who passed a certain exam.
- The 90th percentile of scores on a certain exam.

Educators can use hypothesis tests to compare different teaching methods and determine their effectiveness. This helps in selecting the most suitable teaching strategies for different student groups. Statistics are used to evaluate the effectiveness of educational interventions such as new curricular or teaching methods. This helps in making informed decisions about implementing these changes. Educators analyze correlation between students, characteristics, and academic outcomes to understand factors influencing students' performance

Figure 1: Purpose for which Educational Statistics are Required



4. CONCLUSIONS

Statistical analysis is a crucial tool for understanding data and making informed decisions. By employing various statistical methods, analysts can uncover valuable insights that drive strategic actions in numerous domains. Whether through descriptive or inferential techniques, the ability to analyze and interpret data effectively is essential in today's data-driven world. Visualization like charts and graphs allow educators to spot trends in students' performance and compare different teaching methods.

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