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A Study on the Influence of Technology in Educational Research

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Abstract

This study assesses the statistical skills of postgraduate students in Indore, with a focus on the influence of technology in educational research, the main objective of the study is to compare the mean score by using various dimensions of statistics in post graduate students. A Statistical Competency Test was administered to 88 postgraduate students, in Indore district, Statistical Competency Test developed by Dr.Punita Govil, Mamun Ali Naji Qasem and Swati Gupta Validation by researcher was used to collect the data .The finding revealed that postgraduate students score is that their scores fell below the low achievement threshold. This suggests that postgraduate students require training in technologies to enhance their statistical skills and stay competitive. This can be concluded that students who have completed their post graduation are weak in research skill, computer skill and statistical skill therefore the integration of Statistics and technology has a positive effect on postgraduate students learning outcomes.

Keywords – Educational Research, Educational technology, learning outcomes.

Introduction

Educational research in India is crucial for improving the education system, and it's classified into basic and applied research. Basic research aims to add to the existing knowledge, while applied research focuses on solving practical problems. Educational technology is another area of research, involving the use of psychology, engineering, and technology to enhance teaching and learning. Research is needed in various areas, including higher education, to explore ways to achieve educational goals, measure standards, and address issues like student unrest, teacher recruitment, and examination reforms. Since India's independence, efforts have been made to develop educational research, with organizations establishing research programs, extension services, and financing projects to improve curriculum, teaching methods, and evaluation techniques. After Independence day of India, the Government of Appointed a Commission as University Education Commission has recommended in the area of Training and Research and in India, the Kothari Commission, established in 1964, aimed to transform India's education system. Led by Prof. D.S. Kothari, the commission submitted its report in 1966, emphasizing education's role in national development, productivity, social integration, modernization, and moral values. The commission advocated for equal educational opportunities, recommending common schools, industrial training, and science education. It also stressed the importance of research, standardization of education patterns, and teacher training. The commission's report was divided into three parts, addressing goals, stages of education, and implementation challenges. Its recommendations paved the way for significant reforms in India's education system. and Government is to note that a general consensus on the National Policy on

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education has Emerged under this discuss to enhance university education, institutions should prioritize quality over quantity, admitting students based on available resources and staff strength. New universities should only be established with sufficient funding and careful planning to ensure high standards. Additionally, universities should focus on improving postgraduate courses, research, and training Centers of advanced study should be strengthened, and research institutions should be integrated with universities to promote excellence in research and training, ultimately elevating the overall quality of university education and to enhance teacher quality, the government has initiated various programs, including a centrally sponsored scheme for teacher education through institutions like DIETS, CTES, and IASES. These initiatives focus on special orientation for school teachers, strengthening state councils of educational research and training (SCERTS), and establishing robust departments of education in universities. Furthermore, efforts are being made to computerize teacher training, ensure teacher accountability, and promote teachers' associations, ultimately aiming to uplift the teaching profession and improve education standards.

Statistics plays also a crucial role in research, enabling researchers to design studies, analyze data, and draw meaningful conclusions. Computers have become an indispensable tool in research, facilitating data analysis, storage, and retrieval. Researchers can use computers to perform various statistical calculations, such as computing means, standard deviations, and correlation coefficients. However, it's essential to remember that computers are machines that only compute and don't think, and human brain remains supreme. Researchers should be aware of the limitations of computer-based analysis, including the need for elaborate data collection systems, potential loss of important details, and the risk of faulty programs or poor data. Despite these limitations, computers have revolutionized research, enabling faster and more reliable data analysis, and facilitating the development of new skills and techniques. Statistics is a branch of scientific methodology that deals with collecting, analyzing, interpreting, and presenting data. It's rooted in mathematics, but has evolved into an independent field of study. Statistical methods help us make sense of data, identify patterns, and draw meaningful conclusions. There are two main types of statistics: descriptive and inferential. Descriptive statistics summarize data, while inferential statistics use samples to make predictions about populations. Statistical techniques are used to analyze data, test hypotheses, and determine the relationship between variables. In behavioral sciences, statistics play a crucial role in testing hypotheses, estimating sampling errors, and determining the size of samples. Statistical techniques like correlation, regression, and factor analysis help researchers understand complex phenomena and make predictions. Ultimately, statistics enable us to extract insights from data, make informed decisions, and drive progress in various fields. Statistical formulas and symbols are the building blocks of data analysis, helping researchers to organize, interpret, and present data in a meaningful way. Common statistical symbols include the mean ($\bar{x} = \sum x/n$), median ($M = (n+1)/2$ the value), and mode (most frequent value). Understanding these formulas and symbols is crucial for making sense of data and drawing informed conclusions. Statistical formulas and symbols are the building blocks of data analysis, helping researchers to organize, interpret, and present data in a meaningful way. Understanding these formulas and symbols is crucial for making sense of data and drawing informed conclusions.

The world has witnessed tremendous growth in information and communication technology (ICT) over the years. In the United States, technical education is offered from high school to doctoral levels, emphasizing practical work over theory. ICT has transformed the way we communicate, making it faster, cheaper, and more efficient. It has also enabled global connectivity, e-commerce, and access to information. In education, ICT has

made learning more engaging, interactive, and accessible. Teachers use technology to display information, while students use it for learning, practicing, and creating. The internet provides resources for practicing skills, monitoring progress, and accessing educational content. Emerging trends in e-learning include social learning, web 2.0 technologies, and blended learning approaches. Overall, ICT has revolutionized various aspects of life, including education, communication, business, and entertainment.

India's technical and vocational education faces several challenges, including inadequate infrastructure, outdated curricula, and a lack of emphasis on manual work. To address these issues, experts recommend closing underperforming institutions, promoting regional languages as the medium of instruction, and encouraging research and development tailored to India's specific needs. Additionally, there is a need for better administration and control, post-technical education and training, and modernization of technology that is adapted to Indian conditions. Furthermore, coordination between training facilities and job opportunities is essential to avoid unemployment among technical professionals. By addressing these challenges, India can enhance its technical and vocational education system, promoting economic growth and social development.

It states that complexities of the 21st century, technology have become an indispensable part of our daily lives. The education sector is no exception. With the rise of digital learning platforms, online resources, and innovative tools, technology has transformed the way we teach, learn, and conduct educational research. But what exactly is the impact of technology on educational research? How is it changing the way we design studies, collect data, and analyze results? This study aims to explore the influence of technology on educational research, examining both the benefits and challenges of integrating technology into research design and methodology. By investigating this timely and important topic, we hope to shed light on the future of educational research and its potential to improve learning outcomes for all.

Need and Importance of Study

As technology continues to transform the educational landscape, it's essential to investigate its impact on educational research. The rapid evolution of digital tools, online platforms, and innovative methodologies demands a closer examination of their effects on research design, data collection, and analysis.

1. Improving Research Quality
2. Enhancing Learning Outcomes
3. Informing Policy and Practice
4. Preparing Future Researchers

Objective of the Study

To compare the mean score by using various dimensions of statistics in post graduate students.

Hypothesis of the Study

There is no significant difference in the mean scores by using various dimensions of statistics in post graduate students.

Methodology

The present study was survey method to collect the data study by using various dimensions of statistics in post graduate students.

Population and Sample

The population of the present study comprises postgraduate students of Indore District.

The sample present of investigation comprises 88 postgraduate students selected purposive sample from the population.

Tool

The present study the data were collected in respect of Statistical competency Test prepared by Dr. Punita Govil, Mamum Ali Naji Qasem and Swati Gupta that consists 60 items .Statistical Competency Test for Research, Technology, and Education A Statistical Competency Test for Research, Technology, and Education evaluates your ability to extract meaningful insights from data. This assessment is designed for researchers, educators, and professionals who want to enhance their statistical skills and make informed decisions.

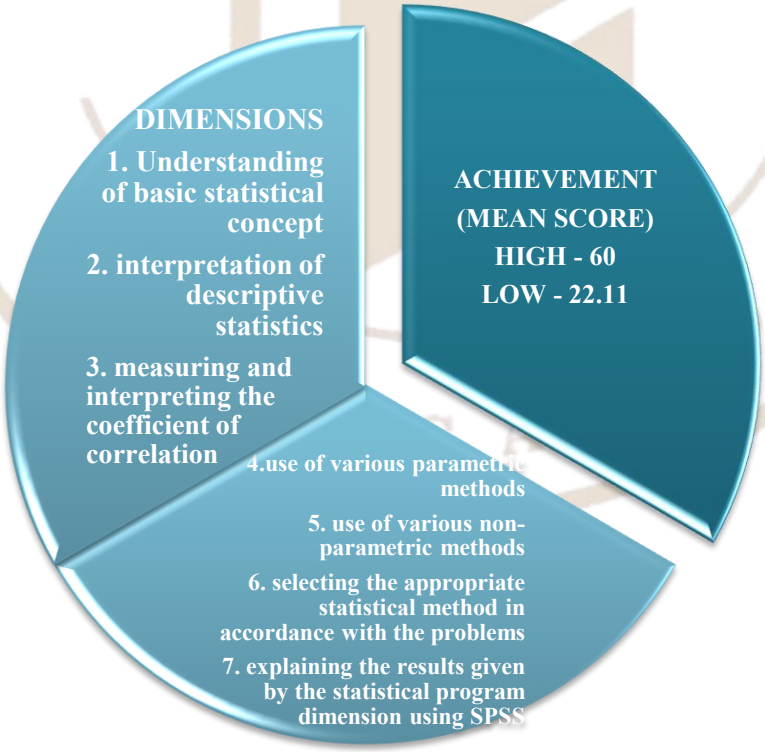
- Focus on practical applications of statistical concepts
- Emphasis on research, technology, and education contexts

Benefits

- Identify areas for improvement in statistical skills
- Enhance ability to analyze and interpret data
- Boost confidence in making data-driven decisions

Conceptual Framework

Statistical Competency Test and Achievement of postgraduate students.



Collection and Analysis the Data

The research is done primary data , Data is collected through the scale among were postgraduate students from which 88 postgraduate students have Indore district to the test, this collected data for the analysis of the research topic, The Statistical techniques were used for the analysis and interpretation of data. The dimensions

includes: understanding of basic statistical concept, interpretation of descriptive statistics, measuring and interpreting the coefficient of correlation, use of various parametric methods, use of various non-parametric methods, selecting the appropriate statistical method in accordance with the problems and explaining the results given by the statistical program dimension using SPSS etc.

Statistical Technique used-

The Mean scores and t value are used in this study.

Analysis and Interpretation-

The Mean and‘t’ value were calculated of postgraduate students according to standard for categorization below average are 22.11 and 1.49 respectively it means that postgraduate students belonging to low group achievement higher than in higher group.

Table no 1. Mean scores and‘t’ value of various dimensions of statistics in post graduate students.

Sr. No.	Dimensions	Group	No.	Mean	Df	t	Sig
1.	Statistical concepts	High Low	88 88	13 6.94	172	1.22	0.01
2.	Descriptive statistics	High Low	88 88	11 3.52	172	5.16	0.01
3.	Correlation	High Low	88 88	10 2.9	172	7.49	0.01
4.	Parametric	High Low	88 88	7 2.05	172	4.31	0.01
5.	Non-parametric	High Low	88 88	5 2.12	172	1.88	0.01
6.	SPSS	High Low	88 88	8 2.77	172	9.02	0.01
7.	Statistical method	High Low	88 88	6 1.72	172	1.91	0.01
Total		High Low	88 88	60 22.11	172	1.49	0.01

Table no. 2. Standards for Categorizations

Category	Standard
Weak	0-22
Below average	23.28
Average	29-34
Above average	35-41
Skilled	42-60

Result

With the help of above analysis and Interpretation of collection of data, the finding revealed that, postgraduate students score is lower than and the low achievement group.

Conclusion

In this study found that the impact of the technology in educational research on post graduate students is very high so they need it to be more practice it and the integration of Statistics and technology has a positive effect on postgraduate students learning outcomes.

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