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A Comparative Study of Curiosity in Context of Digital Competence Level of B. Ed Student-Teachers

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ABSTRACT

A Comparative Study of Curiosity in Context of the Digital Competence Level of B.Ed Student- teachers was undertaken .The population was prospective teachers who were undergoing the second year B.Ed. programme in the Colleges of Education Affiliated by CCS University Meerut, UP. Curiosity refers to a state of urge to learn and acquire facts and knowledge. In the present study, the investigator had adopted survey method in view of realizing the objectives of the study. To collect the pertinent data for the present investigation, the investigator has used 'Scale of 5 Dimensions Curiosity, prepared by Alka Singh and Dr. Arun Kumar (2024) ',as research tools for the data collection. Which is used to measure it in this study. Using the stratified random sample technique, the researcher chosen 200 second-year B.Ed students. To investigate how the groups differed in their Curiosity, a two-sample t-test was used. A statistically significant difference was found in the results, and an extremely significant result was shown by a two-tailed. According to these results, male's curiosity is more digitally competent than female. The study's conclusions highlight the necessity of focused interventions aimed at improving student-teachers' proficiency of technology. The research shows that B.Ed. students who use Curiosity more confident in their digital competence teaching and their interactions with students change their behaviour positively. Therefore, it should be included as an essential skill in the training of B.Ed. students, so that they can become efficient and effective teachers.

Keywords: Curiosity, Knowledge, Digital Competence, B.Ed, Student Teachers.

INTRODUCTION:

Curiosity is the key to knowledge and to improvement. A curious know the reasons behind things and if he/she is not satisfied with the answers, his/her curiosity will lead him to seek it in other ways and in other places. A curious mind is more inquisitive and wants to know and understand what people think and why. Curious pupils need to know the "why", "how", "where" and "when" of every subject they explore. Learners who perceive Individuals curious about coding, software development, and system design are known as Programmers & Developers.

Learners who perceive or take in information concretely and process or transform it reflectively are known as Computer Scientists & Researchers. People who explore hardware, software, and networks for personal knowledge or experimentation are known as Tech Enthusiasts & Tinkerers – Learners who

perceive or take in new information abstractly and process or transform it actively are known as Convergers.

KEY FEATURES OF CURIOSITY:

Curiosity is a fundamental trait that drives learning, exploration, and innovation. Here are its key features:

1. **Desire for Knowledge** – A strong urge to learn new information and understand the unknown.
2. **Questioning Mindset** – The habit of asking "why," "how," and "what if" to deepen understanding.
3. **Open-Mindedness** – Willingness to explore different perspectives and challenge existing beliefs.
4. **Active Exploration** – Engaging in hands-on experiences, experiments, or research to satisfy curiosity.
5. **Adaptability** – The ability to embrace new ideas and adjust thinking based on new information.
   Curiosity can be categorized into high curiosity and low curiosity based on the intensity of one's desire to seek new knowledge and experiences.

HIGH CURIOSITY:

People with high curiosity exhibit a strong drive to explore, learn, and question. Key traits include:

1. Constant Questioning
2. Exploratory Behavior
3. Open to Learning
4. Risk-Taking & Experimentation
5. Resilience in Problem-Solving
6. Diverse Interests

LOW CURIOSITY:

People with low curiosity tend to avoid new experiences or learning opportunities. Common characteristics include:

1. Limited Questioning
2. Preference for Routine
3. Minimal Exploration
4. Resistance to Learning
5. Avoidance of Uncertainty
6. Narrow Interests

REVIEW OF RELATED LITERATURE:

Harford (2024) discussed the balance between curiosity and distraction in the digital age, suggesting that while curiosity enhances learning and exploration, it must be directed purposefully to avoid digital distractions. These studies collectively underscore the importance of fostering curiosity alongside structured digital competence frameworks to enhance learning, adaptability, and critical thinking in the digital era.

Lázaro-Cantabrana et al. (2023) clarified the relationship between curiosity and digital competence of information literacy, stressing that mastery of digital tools is essential for efficient information retrieval and management.

Smahel et al. (2023) examined digital competence among adolescents and young adults, identifying curiosity as a key factor in navigating digital environments effectively.

In 2022, Kaur and Sharma conducted a study at Punjabi University, Patiala, revealing that research scholars from engineering, management, and science streams exhibited higher digital competence compared to their peers in education and languages. The study also found a positive correlation between digital competence and academic achievement, suggesting that fostering curiosity and digital skills can enhance scholarly performance.

A study 2022 published in the Journal of E-Learning and Knowledge Society investigated the integration of digital resources in research by Indian higher education teachers, highlighting the role of curiosity in adopting digital tools to enhance research quality and efficiency. These findings underscore the importance of nurturing curiosity to develop digital competence, thereby improving academic outcomes and research capabilities in the Indian educational landscape.

Lázaro-Cantabrana et al.Ilomäki et al. (2022) analyzed digital competence frameworks in teacher education, highlighting the necessity of clear action plans and benchmarks in training programs.

González et al. (2021) conducted a systematic literature review on teachers' Curiosity of digital competencies in higher education, emphasizing the need for standardized evaluation tools and training programs to enhance educators' digital skills.

OBJECTIVES OF THE STUDY:

The following objectives have been setup in the present investigation:

- To study the digital competence of male and female B.Ed students with high curiosity level.
- To study the digital competence of male and female B.Ed students with low curiosity level.
- To study the relation between Curiosity and Digital Competence.

HYPOTHESES OF THE STUDY

The following hypotheses have been setup in the present study:-

1. There is no significant difference between the digital competence of male and female B.Ed students with high curiosity level.
2. There is no significant difference between the digital competence of male and female B.Ed students with low curiosity level.
3. There is no significant Relationship between curiosity and digital Competence.

METHODOLOGY:

In the present study, the investigator employed the survey method to achieve the research objectives effectively. This comparative study focused on prospective teachers enrolled in the second year of the Bachelor of Education (B.Ed.) program. The participants were from colleges of education affiliated with CCS University in Meerut, Uttar Pradesh. The primary aim was to investigate the Curiosity abilities of these prospective teachers. By comparing the levels among the participants, the study sought to explore variations or trends in their behavioral regulation skills. The findings are expected to contribute valuable insights into the self-regulatory practices of future educators in the region.

POPULATION AND SAMPLE OF THE STUDY:

The population for the present study consisted of the prospective teachers studying in the B.Ed. progra-

mme in Government, Government-Aided and Self Finance Colleges affiliated by CCS University Meerut UP. From the population, the investigator selected 200 student teachers of second year B.Ed. programme by applying stratified random sampling technique.

TOOLS USED IN THE STUDY:

In the present study, Curiosity was assessed using the 'Scale of 5 Dimensions of Curiosity ', prepared by Alka Singh and Arun Kumar in 2024. This tool comprises 42 statements designed to measure high and low Curiosity behavior among individuals.

A Curiosity Questionnaire is a tool designed to measure and evaluates an individual's level of curiosity, exploring how this trait influences their behavior, thinking, and learning.

The questionnaire typically consists of a series of statements or questions that respondents rate on a scale (e.g., from "strongly agree" to "strongly disagree").

For the ease of the study (5DCS) has been divided in 5 dimensions which are as follows:

- Curiosity of Exploration:
- Social Curiosity:
- Creative Curiosity
- Deprivative Sensitivity:
- Digital Curiosity:

STATISTICAL TECHINIQUE USED IN THE STUDY:

- T-test have used to find out the difference between high and low Curiosity on digital competence among B.Ed male and female student- teachers.
- Correlation test have used to find out the relation between Curiosity on digital competence among B.Ed second year male and female student – teachers.

DELIMITATION OF THE STUDY:

For the smooth conduction of the research work and due to limitation of time energy and resources, the study have delimited as:

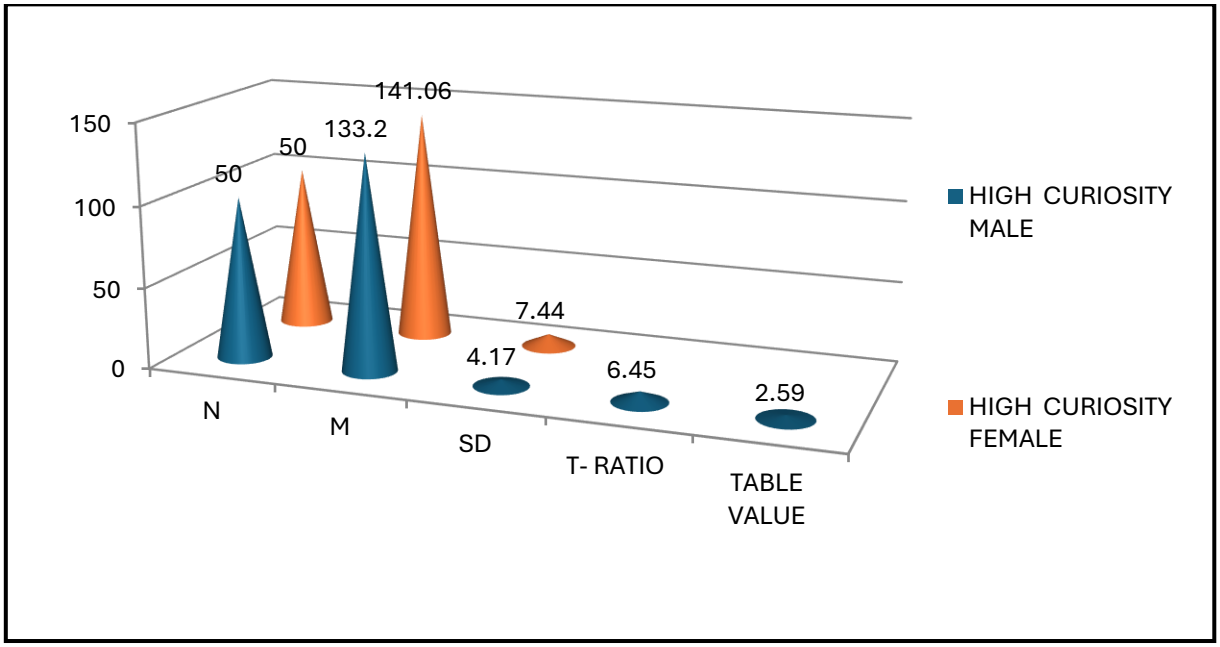
- The study have delimited only colleges affiliated to Chaudhary Charan Singh University Meerut have been taken into the study.
- The study have delimited only B.Ed 2nd year student have been taken for the study.
- Only 200 people have included in the sample

HYPOTHESIS 1:

There is no significant difference between the digital competence of male and female B.Ed students with high Curiosity level.

Table 1 Showing the high levels of Curiosity of male and female.

Digital Competence							
High Curiosity	Gender	N	M	SD	T-Ratio	Table Value	Level Of Significance (0.01)
	Male	50	141.06	4.17	6.45	2.59	There Is A Significance Difference
	Female	50	133.2	4.17			



INTERPRETATION:

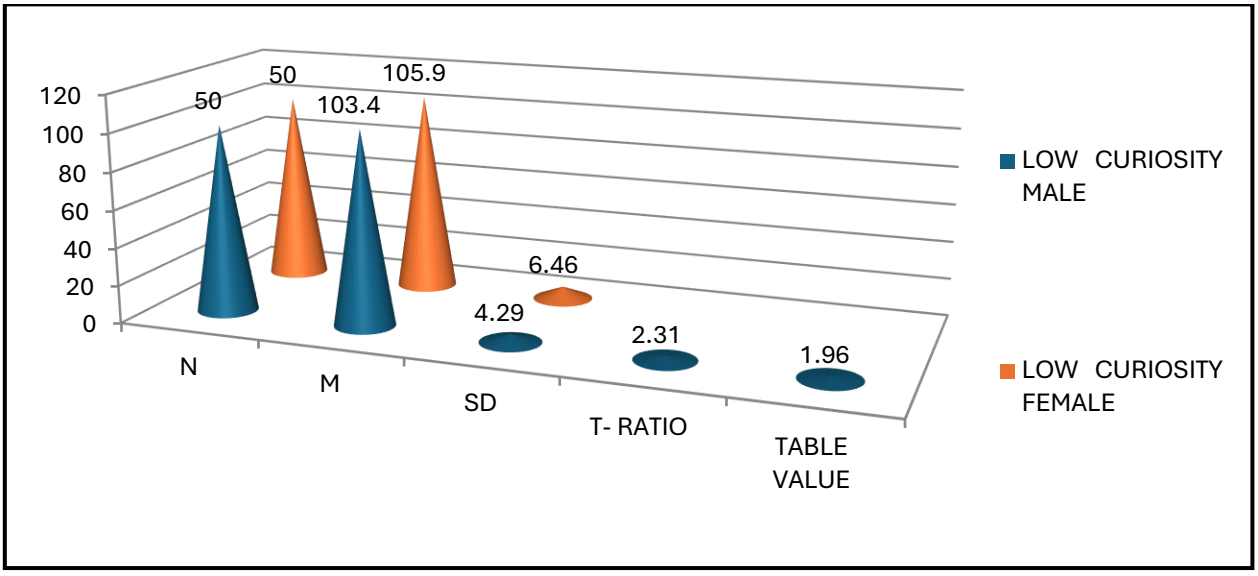
The analysis compares curiosity levels between females and males, showing a significant difference. The mean curiosity score for females is 133.28 (SD = 4.17), while for males, it is 141.06 (SD = 7.44). The standard error of the mean (SEM) is 0.5897 for females and 1.0522 for males, with both groups having an equal sample size (N = 50). The two-tailed P value is less than 0.0001, indicating an extremely statistically significant difference. The mean difference between groups is -7.78, with a 95% confidence interval ranging from -10.1736 to -5.3864. A t-value of 6.4502 with 98 degrees of freedom further supports this difference. The standard error of difference is 1.206. These results suggest that males exhibit significantly higher curiosity levels than females.

HYPOTHESIS 2:

There is no significant difference between the digital competence of male and female B.Ed students with low Curiosity level.

Table :2 Showing the low levels of Curiosity of male and female.

Digital Competence							
Low Curiosity	Gender	N	M	SD	T- Ratio	Table Value	Level Of Significance (0.05)
	Male	50	103.4	4.29	2.31	1.96	There is A Significance Difference
	Female	50	105.9	6.46			



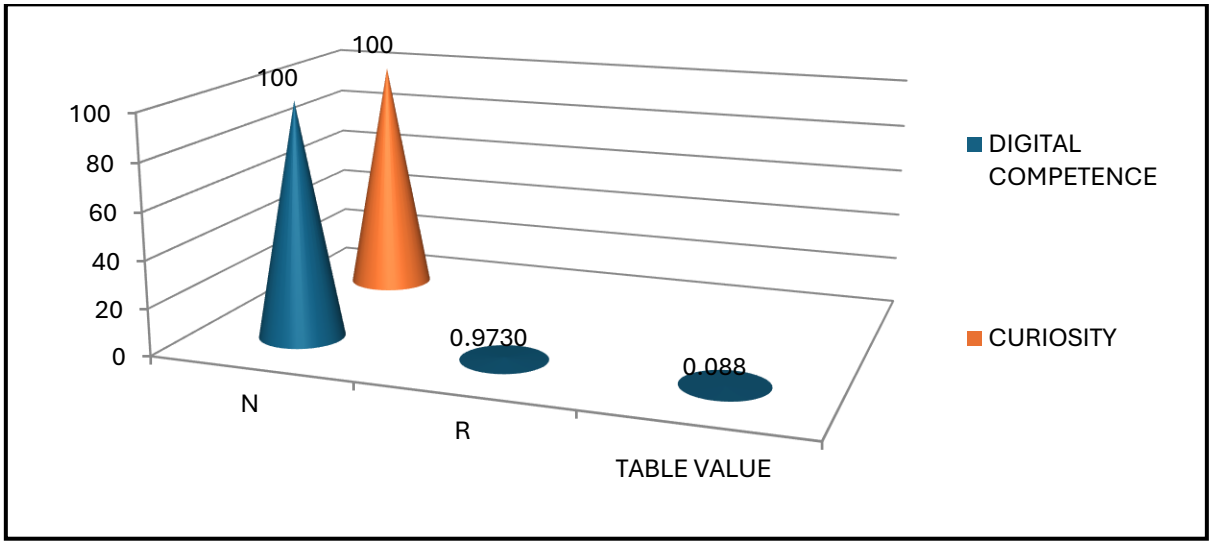
INTERPRETATION: The data presents a comparison of curiosity levels between males and females, with a two-tailed P-value of 0.0228, indicating a statistically significant difference at the conventional α = 0.05 level. The mean curiosity score for males is 103.44, while for females it is 105.98, resulting in a mean difference of -2.54. This suggests that, on average, males have lower curiosity levels than females. The 95% confidence interval for the difference in means ranges from -4.72 to -0.36, further supporting the significance of this difference as it does not contain zero. The t-statistic of 2.3137, with 98 degrees of freedom, also indicates a notable difference in curiosity scores. The standard error of the difference is 1.098, reflecting the variability in the difference between the groups. The standard deviations for the two groups are 4.291 for males and 6.469 for females, with corresponding standard errors of 0.6068 and 0.9149, respectively. With 50 participants in each group, the results are statistically robust, providing confidence that the observed differences are not due to chance. This analysis suggests a genuine disparity in curiosity levels between males and females in the sample.

HYPOTHESIS 3:

There is no significant Relationship between curiosity and digital Competence.

Table :3 Showing the relationship between Curiosity and Digital Competence.

RELATIONSHIP BETWEEN CURIOSITY AND DIGITAL COMPETENCE				
VARIABLE	N	R	TABLE VALUE	SIGNIFICANCE LEVEL - 0.05
DIGITAL COMPETENCE	100	0.9730	0.088	THERE IS A SIGNIFICANCE DIFFERENCE
CURIOSITY	100			



INTERPRETATION:

The data reveals a significant relationship between Curiosity and digital competence, as indicated by the correlation coefficient (R) of 0.9730 for digital competence with a table value of 0.088 at the 0.05 significance level. With a high positive correlation of 0.9730, this suggests a very strong association between the two variables, implying that individuals who score higher on Curiosity end to also exhibit greater digital competence. The significance level of 0.05 further confirms that this correlation is statistically meaningful and not likely due to chance. The large sample size of 100 participants provides confidence in the reliability of this result. In practical terms, this could mean that individuals who are more adept at Curiosity their own behaviors and actions are likely to have better digital skills, making them more capable in the digital realm. Additionally, the significant difference at the 0.05 level suggests that Curiosity could be an important predictor of one's digital competence. However, further investigation may be needed to explore causality and other factors that might contribute to this relationship.

MAJOR FINDINGS OF THE STUDY:

The following major finding of the present investigation:.

Male with high Curiosity level have exhibited significantly higher digital competence than Female.

- The study highlights that gender differences existed in digital competence among B.Ed. student-teachers with low Curiosity levels, with male showing a marginal advantage.
- These findings highlight the need for targeted interventions to address gender differences and enhance digital competence, particularly for male, in the context of Curiosity level.
- These findings underscore the need to address gender disparities in digital competence and to develop strategies to enhance digital literacy among B.Ed. student-teachers, especially for female with low Curiosity levels.

EDUCATIONAL IMPLICATIONS:

- In the present study, Male Students have significantly higher Curiosity .Statistically significant difference is noted between Male and female Student –teachers..
- Curiosity by B.Ed. students on their digital competency has important pedagogical ramifications

because digital competency is a necessary ability for contemporary teachers. In the context of B.Ed. students, curiosity aids in the development, evaluation, and enhancement of their usage of digital tools and resources for instruction.

- Students are encouraged to evaluate their own skills with digital tools, software, and platforms through Curiosity, which helps them, find areas for progress.
- Enhanced Learning Engagement and Critical Thinking
  Digital curiosity encourages students to actively explore new knowledge through digital resources, interactive learning platforms, and technology-driven problem-solving. This leads to greater engagement, deeper understanding, and improved critical thinking skills as students question, analyze, and apply information creatively.
- Development of Digital Literacy and Future-Ready Skills
  By fostering digital curiosity, educators can help students develop essential digital literacy skills, including information evaluation, online research, and ethical technology use. This prepares them for future academic and professional environments where digital competence is crucial for success.

SUGGESTIONS FOR FURTHER STUDY:

The following suggestions are given for further research:

- This survey was carried out at random in 16 education colleges affiliated to CCS University in Meerut; It can be expanded to several additional educational institutions located in different districts of the state of Uttar Pradesh.
- This study only included second-year education college students aspiring to teach. It might be expanded to include education colleges' first-year student instructors.
- Students from medical, engineering, law, and arts and science colleges could also be included in this study.
- This study may be expanded to include additional active educators. The emphasis might be expanded to include students from different socio economic backgrounds.

CONCLUSION:

Curiosity of digital competence is a crucial driver of learning and innovation in the modern era, fostering a deeper engagement with technology, critical thinking, and problem-solving skills. It enhances digital competence by encouraging individuals to explore, experiment, and adapt to new technological advancements. In educational settings, nurturing curiosity equips students with essential skills such as information literacy, ethical technology use, and the ability to navigate digital platforms effectively. Moreover, in professional and social contexts, digital curiosity promotes lifelong learning and adaptability to rapidly evolving digital landscapes. Therefore, integrating digital curiosity into education and skill development programs is vital for preparing individuals to thrive in a technology-driven world.

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