

A COMPARATIVE STUDY ON WHETHER DIGITAL LEARNING HINDERS OR SUPPORTS ENHANCEMENT OF CRITICAL THINKING AMONG LEARNERS.

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Abstract:

The COVID-19 pandemic has triggered new ways that of learning. The year 2020 has witnessed the transformation of virtually all the sectors into a virtual one. significantly in Education sector, the impact of this transformation has been so much reaching. In developing countries like Asian nation, teaching-learning method has gone whole virtual. Students have adopted the thought of "Digital Learning". This paper addresses the problem of important thinking and the way Digital learning surroundings will have an effect on the learner. during this study, students, colleges and general individuals ar tested and forwarded form survey to know the opinions regarding relationship between digital learning and demanding thinking. The analysis results conclude that:-

1. Digital learning affects the learners to develop important thinking,
 2. Digital learning will show higher positive effects on learning outcome than ancient teaching will,
- It is expected to mix with current teaching trend and utilize the benefits of digital learning to develop practicable teaching ways for the event of important thinking among the learners.

Key Words: Digital Learning, Critical Thinking, Online learning.

Introduction:

In the past years, the utilization of web and technology created all the individuals tech-savvy. within the COVID-19 pandemic, digital technology has established boon to our society. Digital learning has been accepted everywhere the globe as AN choice to ancient learning. Physical school rooms are replaced by virtual school rooms. lecturers have adopted Digital teaching. Students were ready to manage their studies with digital learning.

According to archangel Scriven & Richard Paul, "Critical thinking is that the intellectually disciplined method of actively and elegantly conceptualizing, applying, analyzing, synthesizing, and/or evaluating info gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action". Digital Learning has affected the approach one thinks. it's not solely regarding deep learning. it's a thinking method wherever one thinks a talent of a way to solve the matter by considering all the things. Observation and curiosity ar the characteristics of important Thinking.

Review of Literature:

1. The role of Critical Thinking in an Online Environment [5] - Kelly Burning.

This analysis paper addresses the problem of important thinking in a web surroundings. research worker has return up with the numerous ways to include in a web surroundings to develop important thinking among the learners. It states that to develop important thinking, educator has to style courses wherever students are actuated to participate actively within the method of learning. This analysis paper helps instructors to realize important thinking among students by together with completely different methodologies like developing learning community, dividing content into tiny module, inspire students for active participation by asking queries.

2. Impact of technology on Education - G.N.Wikramanayake

Technological evolution has result in the event of each sector. This technological evolution has created education sector additional competitive. This analysis paper focuses on the impact of technology in education sector. The study suggests that learner will learn at his own pace. the utilization of ICT helps students to know the ideas in careful manner. Audio, Video, Animation ar few supporting technologies which might be incorporated in teaching to share the data among the learners. ICT plays a crucial role in education by introducing completely different teaching applications, techniques.

Research Methodology:

Objective of the study:

1. To study and understand the relationship between Digital Learning and Critical Thinking.
2. To analyze the factors which help in development of Critical Thinking among learners.
3. To evaluate the impact of Digital learning on learners.

Data Analysis and Interpretation:

| Table no.1 Demographic data collection | | | |
|---|----------------------|--------------------|-------------------|
| Demographics | Particulars | Respondents | Percentage |
| Gender | Male | 68 | 57.60 |
| | Female | 50 | 42.40 |
| Age bracket | 16-26 | 52 | 44.10 |
| | 27-37 | 48 | 40.70 |
| | 38-48 | 13 | 11.00 |
| | >48 | 4 | 3.40 |
| Designation | HOD/Faculty/Lecturer | 39 | 33.10 |
| | Students | 48 | 40.70 |
| | Others | 40 | 25.40 |

Table one describes the demographic knowledge analysis. The research worker has collected total 117 responses from Google type form .It shows that fifty (57.60%) of the full respondents (117) belong to Male class and (50) forty two.40% belongs to feminine class. the most respondents belongs to age vary between 16-26 i.e 44.10% (52 respondents). The Designation of the respondents has additionally been collected for higher analysis . Out of total respondents , 33.10 nada has mentioned their profession as HOD/Faculty/Lecturer . Total 40.70 the scholars have skilful the researcher's

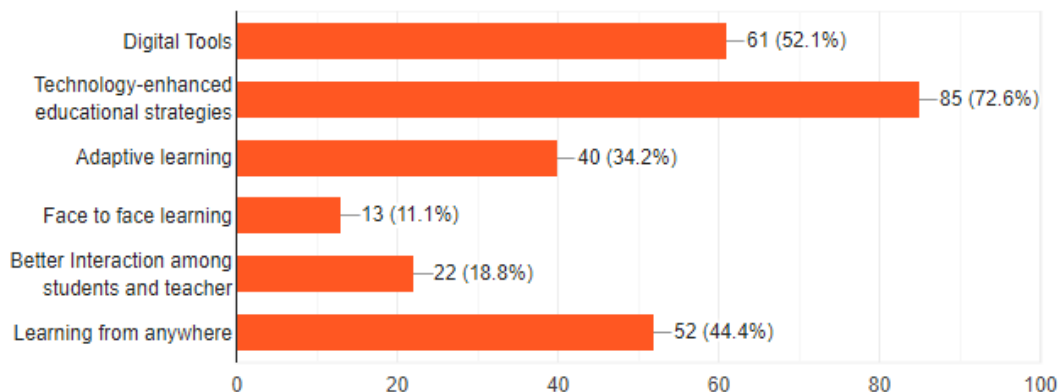
| Table no.2 Data Collection | | | |
|-----------------------------------|--|--|---|
| Questions | 1) Does digital learning increases problem solving skills among the learners | 2) Digital learning develops attitude, decision making capabilities among learners | 3) Digital learning environment makes the learner introvert |
| Strongly Disagree | 7 | 9 | 5 |
| % | 6 | 7.7 | 4.3 |
| Disagree | 19 | 26 | 16 |
| % | 16.2 | 22.2 | 13.7 |
| Neutral | 54 | 39 | 45 |
| % | 46.2 | 33.3 | 38.5 |
| Agree | 34 | 40 | 37 |
| % | 29.1 | 34.2 | 31.6 |
| Strongly Agree | 3 | 3 | 14 |
| % | 2.6 | 2.6 | 12 |

form..

The research worker has collected knowledge to review whether or not digital learning develops the important thinking among the learners. 46.2 % are neutral regarding the read on whether or not digital learning will increase drawback resolution among the learners. Hardly third-dimensional (very less) of the full respondents are in favor of initial question.19% of the full respondents have shown their disagreement to the primary question. Question two of table two analysis clearly states that thirty four. two of the respondents have united to question no. 2. 33.3% of the full respondent are neutral.9% of the full respondent are powerfully ail the statement on digital learning develops angle, deciding and capabilities among the learners. 31.6% of the full respondents thinks that digital learning surroundings makes the learners introvert. twelve-tone system of the respondents are powerfully agree regarding the event of introvert angle among the learners thanks to digital learning surroundings.

Digital Learning involves:

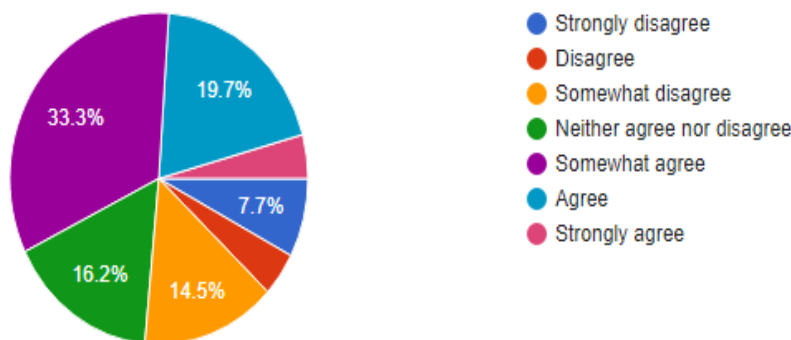
117 responses



The higher than high bar graph clearly shows that most respondents are aware of the various factors that involves in digital learning. 52.1 %(61) respondents are aware that digital learning involves completely different digital tools. The graph shows that forty four.% (52) respondents have clear plan regarding Digital learning means that learning from anyplace .Technology-enhanced instructional ways are a part of digital learning says seventy two.6% (85) of the full respondents.

Do you think Digital learning is a better way to enhance critical thinking among learners?

117 responses



The above pie chart displays the views of the respondents (in %).The researcher wants the opinion about if the digital learning is a better way to enhance critical thinking. The statistics states that 33.3% of the total respondents are somewhat agree to it. 19.7% of total respondents which is very low are agreed. 16.2 % respondents are neither agree nor disagree about the view whether digital learning is better way to enhance critical thinking.

Table no.4 Data Collection

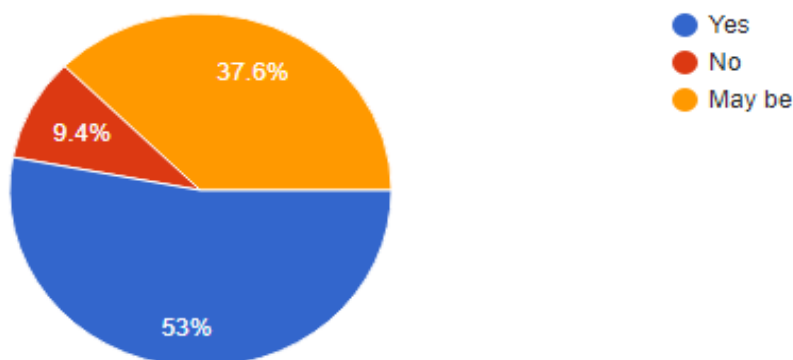
| Questions | 1) Are you aware of the term Critical Thinking? | Question | 2) Digital learning helps you in understanding the concepts in detail? |
|----------------------------|---|------------------|--|
| Not at all aware | 11 | Never | 6 |
| % | 9.4 | % | 5.1 |
| Slightly aware | 27 | Rarely | 16 |
| % | 23.1 | % | 13.7 |
| Somewhat Familiar | 36 | Sometimes | 51 |
| % | 30.8 | % | 43.6 |
| Moderately Familiar | 27 | Often | 33 |
| % | 23.1 | % | 28.2 |
| Extremely Familiar | 16 | Always | 11 |

| | | | |
|---|------|---|-----|
| % | 13.7 | % | 9.4 |
|---|------|---|-----|

The higher than table represents the opinion of the respondents concerning awareness of the term 'Critical Thinking' and if digital learning helps learner to know the ideas intimately. The information clearly shows that nine.4%(11) of the full respondents(117) aren't in the least aware of the term 'Critical Thinking'. important thinking term is extraordinarily acquainted among thirteen. 1 % respondents has same that they're moderately aware of the term. Digital learning generally helps in understanding the thought intimately says forty three.6%(51) of the full respondents. The Digital learning is never helps respondents in understanding the ideas , as expressed by thirteen.7%(16) of the respondents.

Is the social interaction amongst the people affected by Digital Learning?

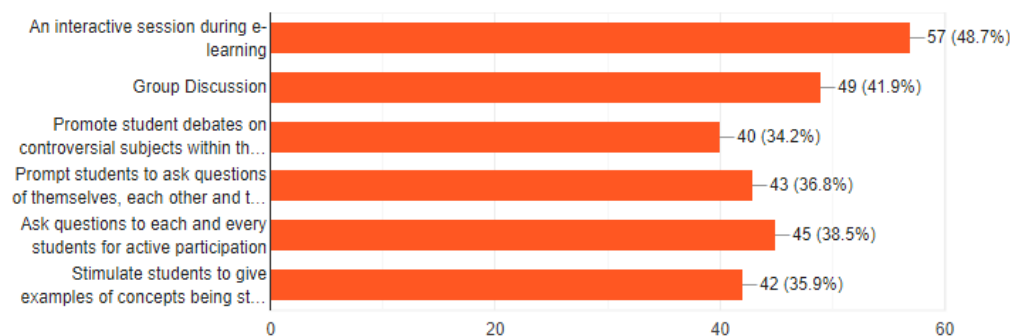
117 responses



The above pie chart represents the views of the respondents regarding social interaction in terms of digital learning. Above statistics clearly states that 53% of the total respondents say that social interaction among the people affected by Digital Learning. 37.6% of the total respondents are not sure about the same.

Which of the following approaches will help teachers/faculties to develop critical thinking among people with respect to digital learning?

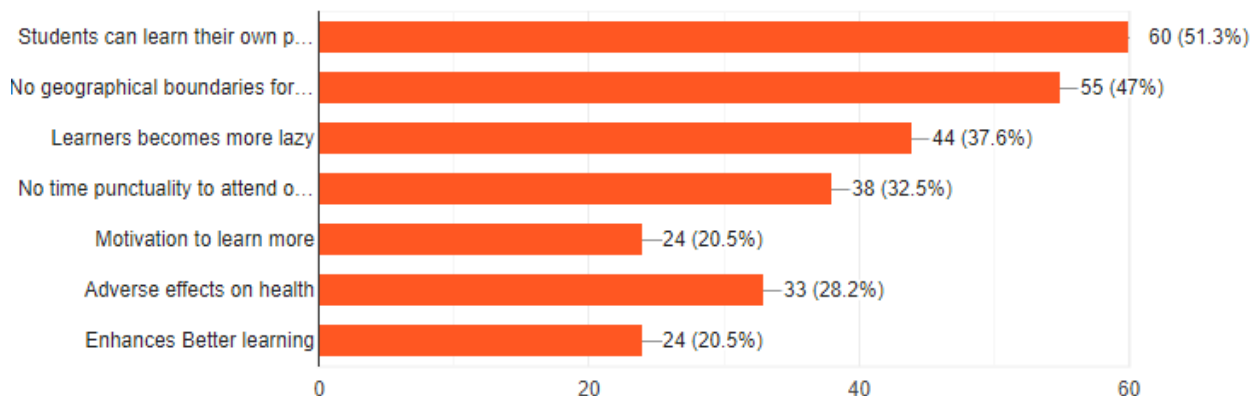
117 responses



The researcher needs to know what the different ways can be implemented by the instructors in Digital Learning environment to develop critical thinking. Above chart clearly states that 48.7% (57) of the total respondents are of the view that teaching should be interactive so that it creates interest among the students. Group discussion can be conducted during online lectures says 41.9% (49) of the total respondents. Digital learning must encourage active participation by asking questions to each and every students says 38.5% of the total respondents.34.2% (40) of the total respondents thinks that promoting debates among the students can be one of the approach which can be implement during digital learning.

According to you ,How Digital learning impact learners?

117 responses



The above bar graph shows the statistics about the impact of digital learning on learners. Different factors were listed by the researcher.

Hypothesis Testing:

Test 01:

A. H0: There is no significant relationship between Digital Learning and Critical Thinking.

H1: There is a significant relationship between Digital Learning and Critical Thinking.

B. Level of significance: 5% (0.05) & Degree of freedom: 4

C. Decision Criterion:

H0 is rejected if $\chi^2 > \chi^2_{(4, 0.05)} = 9.46$

H0 is accepted if $\chi^2 \leq \chi^2_{(4, 0.05)} = 9.46$

D. Test Static:

(Question: Do you think Digital learning is a better way to enhance critical thinking among learners?)

| Likert Scale | No. of Observations | Percentage |
|----------------------------|---------------------|------------|
| Strongly agree | 5 | 4% |
| Agree | 23 | 20% |
| Somewhat agree | 39 | 33% |
| Neither agree nor disagree | 19 | 16% |
| Somewhat disagree | 17 | 15% |
| Disagree | 5 | 4% |
| Strongly disagree | 9 | 8% |
| Total | 117 | 100% |

(Table 01: Data Collection)

| Changed Likert Scale | No. of Observations (Observed Frequency 'O') | of | Expected Frequency 'E' |
|----------------------|--|----|------------------------|
| Agree | 28 | | 23.4 |
| Moderately agree | 39 | | 23.4 |
| Disagree | 14 | | 23.4 |
| Moderately Disagree | 17 | | 23.4 |
| Neutral | 19 | | 23.4 |
| Total | 117 | | 117 |

(Table 02: Chi-Square calculation table)

Therefore

| | | | | | |
|--|------|------|------|------|------|
| No. of Observations (Observed Frequency 'O') | 28 | 39 | 14 | 17 | 19 |
| Expected Frequency 'E' | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 |
| (O-E) | 4.6 | 15.6 | -9.4 | -6.4 | -4.4 |

| | | | | | |
|-----------------------|-----------|--------|----------|----------|----------|
| (O-E) ² | 21.16 | 243.36 | 88.36 | 40.96 | 19.36 |
| (O-E) ² /E | 0.9042735 | 10.4 | 3.776068 | 1.750427 | 0.82735 |
| | | | | Total | 17.65812 |
| chi-square | 17.65812 | | | | |
| Df | 4 | | | | |
| Level of Sign. | 0.05 | | | | |
| Crit | 9.46 | | | | |
| Chi-square > crit | | | | | |

E. Conclusion:

Since, $\chi^2 = 17.6581197 > 9.46$

Therefore, Reject H0 at 5% level of significance and accept H1.

Hence, there is a significant relationship between Digital Learning and Critical thinking.

Test 02:

A. H0: Digital Learning does not increase problem solving skill among learner

H1: Digital Learning does increase problem solving skill among learner

B. Level of significance: 5% (0.05) and Degree of freedom: 2

C. Decision Criterion:

H0 is rejected if $\chi^2 > \chi^2_{(2, 0.05)} = 5.99$

H0 is accepted if $\chi^2 \leq \chi^2_{(2, 0.05)} = 5.99$

D. Test Static

| Likert Scale | No. of Observations | Percentage |
|-------------------|---------------------|------------|
| Strongly Agree | 3 | 3% |
| Agree | 34 | 29% |
| Neutral | 54 | 46% |
| Disagree | 19 | 16% |
| Strongly Disagree | 7 | 6% |
| Total | 117 | 100% |

(Table 03: Data Collection)

| Changed Likert Scale | No. of observations (Observed Frequency 'O') | Expected Frequency 'E' |
|----------------------|--|------------------------|
| Agree | 37 | 39 |
| Disagree | 26 | 39 |
| Neutral | 54 | 39 |
| Total | 117 | 117 |

(Table 04: Chi-square distribution table)

Therefore,

| | | | |
|--|-------------|-------------|-----------|
| No. of observations (Observed Frequency 'O') | 37 | 26 | 54 |
| Expected Frequency 'E' | 39 | 39 | 39 |
| (O-E) | -2 | -13 | 15 |
| (O-E) ² | 4 | 169 | 225 |
| (O-E) ² /E | 0.102564103 | 4.333333333 | 5.7692308 |
| Total | | | 10.205128 |
| chi-square | 10.21 | | |
| Df | 2 | | |
| level of sign. | 0.05 | | |
| crit. | 5.99 | | |
| chi-square > crit | | | |

F. Conclusion:

Since, $\chi^2 = 10.205128 > 5.99$

Therefore, Reject H0 at 5% level of significance and accept H1.

Hence, Digital learning does increase problem solving skill among learner.

Test 03:

A. H0: Digital Learning does not develop attitude, decision making capabilities among learner

H1: Digital Learning does develop attitude, decision making capabilities among learner

B. Level of significance: 5% (0.05) and Degree of freedom: 2

C. Decision Criterion:

H0 is rejected if $\chi^2 > \chi^2_{(2, 0.05)} = 5.99$

H0 is accepted if $\chi^2 \leq \chi^2_{(2, 0.05)} = 5.99$

D. Test Static

| Likert Scale | No. of Observations | Percentage |
|-------------------|---------------------|------------|
| Strongly Agree | 3 | 3% |
| Agree | 40 | 34% |
| Neutral | 39 | 33% |
| Disagree | 26 | 22% |
| Strongly Disagree | 9 | 8% |
| Total | 117 | 100% |

(Table 05: Data Collection)

| Changed Likert Scale | No. of observations (Observed Frequency 'O') | Expected Frequency 'E' |
|----------------------|---|------------------------|
| Agree | 43 | 39 |
| Disagree | 35 | 39 |
| Neutral | 39 | 39 |
| Total | 117 | 117 |

(Table 06: Chi-square distribution table)

Therefore,

| | | | |
|--|-------------|------------|----|
| No. of observations (Observed Frequency 'O') | 43 | 35 | 39 |
| Expected Frequency 'E' | 39 | 39 | 39 |
| (O-E) | 4 | -4 | 0 |
| (O-E) ² | 16 | 16 | 0 |
| (O-E) ² /E | 0.41025641 | 0.41025641 | 0 |
| Total | 0.820512821 | | |
| chi-square | 0.820512821 | | |
| Df | 2 | | |
| level of sign. | 0.05 | | |
| crit. | 5.99 | | |
| chi-square < crit | | | |

G. Conclusion:

Since, $\chi^2 = 0.820512821 < 5.99$

Therefore, do not reject H0 at 5% level of significance.

Hence, Digital Learning does not develop attitude, decision making capabilities among learner

Significance of the Study:

The scientist has wrote Hypothesis bas on supported the responses and has performed 'Chi-Square' testing to investigate the research study. The testing signifies that there's a relationship between digital learning and important thinking. The study shows that there's a major relationship between Digital learning and important thinking. The scientist tries to indicate that digital learning helps students in many ways like learner will learn at their own pace, will learn from anyplace however still it doesn't facilitate to develop vital thinking. Instructors has got to incorporate innovative ways

like give-and-take , assignments , follow up queries throughout the training session. The researchers tries to specify that the learners area unit still not in favor of digital learning mode . Study analysis suggests that digital learning has adverse effects on the learner's health. The learners feels that lack of face to face learning, teaching ways employed by the instructors doesn't develop angle, higher cognitive process capabilities among learners. The scientist tries to indicate that instructor's innovative approach of mistreatment completely different teaching technique ways will be useful to develop vital thinking among the scholars. The scientist is of the opinion that vital thinking will be incorporated among the learners if digital learning will be conducted in acceptable manner.

Scope of the Study:

The study covers the various teaching techniques which may be accustomed develop vital thinking. The Digital Learning is that the art movement approach within the education business. vital thinking helps learners to develop the talents like drawback determination , analyzing , observation, higher cognitive process , therefore digital learning should be conducted in such how that it ought to be facilitate the learners to become dynamic. Digital learning is that the way forward for education and should be incorporated completely different teaching techniques to develop vital thinking among the learners WHO area unit the long run of the country. the event of vital thinking via digital learning should be developed to own a positive impact on learners.

Source of Data Collection:

Primary Data: The researcher has prepared survey form (Google form) questionnaire and circulated among different people. Total 117 respondents have responded to the survey. The data interpretation and analysis of the data is done based on the responses. This survey has helped the researcher to find the outcomes of the study.

Secondary Data: The researcher has browsed different websites for the review of literature.

Limitation of the study:

This study has the subsequent limitations:

1. Not everyone seems to be privy to the term 'Critical Thinking ' , therefore responses may not be excusable.
2. This study doesn't cowl the opinion regarding digital learning in rural areas.
3. Analysis was done among restricted variety of individuals.

Findings and conclusion of the research paper:

1. Digital learning and important thinking goes hand in hand.
2. Instructor/Faculty should embody completely different innovative techniques to include vital thinking among learners.
3. Study clearly shows that digital learning has health effects on a student, which can cause lack of interest in studies
4. Digital learning if enforced with correct techniques together with completely different teaching ways it'll facilitate learners to develop interest in learning that ultimately cause develop vital thinking among learners.
5. All the respondents area unit well versed with the digital learning.

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