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New Trends in Higher Education with "Nano-Learning"

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ABSTRACT
COVID-19 epidemic not only harmed higher education but opened new doors for higher education as well. The main trends in higher education in the following year may be continued by online teaching and learning to professional and career enhancement. All strive young professionals searching to improve their professional competencies and flexible learning in these days, that must be more efficient, effective, and time friendly ways for them, 'Nano-learning' will likely be the scene stealer in the coming years. India has the world's biggest higher education system, with 1,000 universities and 40,000 institutes of higher education. The higher education settings in India are about to undergo a dramatic upheaval, and the New Education Policy (NEP) 2020 will play a vital role in defining higher education in India. The purpose of this research is to analyze the effects of Covid-19 on the Indian higher education system and to forecast future developments in this field. This research used previously published researches on covid-19, NEP-2020, and Nano learning patterns.
Keywords: -- Nano-Learning, ed-tech, upskilling, Covid-19, higher education, NEP-2020.

1. Introduction:

The spread of the COVID-19 virus has caused havoc in a number of different areas of Indian formal, non-formal and informal educational settings, which is a significant factor in determining the economic destiny of a nation. The higher education industry in India has a number of obstacles as well as opportunities as a result of the lockdown that has been imposed as a result of the epidemic. According to the findings of many researchers, the Covid-19 epidemic affected the higher education industry as a whole, but Covid-19 outlines many new tendencies and new learning methods brought to light that may be maintained in the future.

1.1 Changes accrue after COVID 19 in Indian Higher Education.

COVID-19 has switched from the famous old offline teaching method of "chalk and talk" to a new method called "technology-mediated learning." Higher Education Institutes are working with different web tools to make it easier for students and teachers to talk to each other. Microsoft Teams, Zoom, and Google Classrooms are all tools that are widely used to teach classes. Covid-19 forced educational institutions to give tests online. Homework was turned in via email, and tests were given using Google forms. Edtech platforms have the ability to change the standard mindset of college and university education and life afterward. IBEF data shows that the online education market was worth US$ 247 million in 2016 and had 1.57 million paid users. It is expected to grow at a CAGR of 52% and reach US$ 1.96 billion in 2021. In the post-covid age, edtech platforms will grow because more and more students will use them because they can receive high-quality material through them.

1.2 NEP-2020 for future educational prospects

In July 2020, the Union Cabinet accepted the National Education Policy (NEP). The goal of this strategy is to make "India a global knowledge superpower" by making big changes to the way education is run in the country. The government has said that National Education Policy 2020 is based on flexibility, there is no hard separation between courses of study, schoolwork, and hobbies learning may be available at outside of school as well and emphases on Multi-disciplinary courses to understanding the new trends in education, and Kasturirangan Committee put forward a plan for education that aims to fix the problems with the current system system of Education i.e. Quality, Affordability, Equity Access and Accountability, increase public spending on education, pay more

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attention to professional, multidisciplinary, and adult education, and make better use of technology, with OER.

1.3 Government of India Initiatives

In addition to this, the Indian government started programs like Vidya Daan, PM eVidya, SWAYAM, Karmyogi and others to teach and learn online because of how COVID-19 would affect the education system. Vidya-Daan was made to offer great e-services like e-tutorials-e-learning materials and to use the Digital Infrastructure for Knowledge Sharing (DIKSHA) type tools and many more in 2020. PM eVidya went live on May 17, 2020, to bring together all of the digital, online, and on-air ways to teach. During COVID-19, the government has also helped with education by using SWAYAM-PRABHA Channels, online available of many textbooks, and the NROER i.e., the "National Repository of Open Educational Materials".

The beginning of Blended learning era is a combination of classroom and online learning. Covid-19 forced teachers to learn how to use digital tools to teach, and teachers will continue to use digital tools in the classroom technology based on personalized education and learning concepts, and opens up new doors and raises the bar for educational resources with modern tools, such as AI and cloud computing and so on, and this is making all educational and learning activities make possible to design individualized lessons and instructional approaches. All of these features are present in "Nano-Learning" that is facilitate the steady exchange of information, leading to improved pedagogy and a less complicated educational experiences for students, because "Nano-Learning" facilitates student participation in the teaching learning situations with their interest and active participation, and students used all their knowledge senses with audio, and vision sensors in the classroom, that will grow learning capacities.

2. Review of related Literature

Nano is one of the prefixes that are used with decimal units in the International System of Units. When you add "nano" to the name of an existing unit, you get the effect of multiplying the original unit by "10-9." In other words, the new unit is the same as a billionth of the old unit. If you know what the word "nano" means, you can better understand what nano-learning is and what it means.

Nano-learning is also called "learning in small bites." It is a process of learning that goes on all the time and doesn't require a lot of time. With nano-learning, you can learn in smaller chunks that contain the most important knowledge. (Grading et al., 2019) For example, a two-minute conversation with an expert will clear up any questions and increase the learner's knowledge level. On the other hand, short readings can help people understand how an idea or method works. Because these things don't last long, they are much easier to take in. The human brain doesn't get tired of long lessons and talking with the teacher, as long as it gets the most knowledge it needs to understand the topic (Illeris, 2021).

Nano-learning is becoming more popular as an instructional methodology due of its forward thinking, accessibility, and distance style. Due to the widespread isolation that followed the introduction of COVID-19 around the turn of the millennium, distant learning quickly replaced traditional classroom instruction (Bloor2020,).

Nano Learning is a customizable answer for fast-paced 21st-century learners who don't have time to learn for long periods of time. It's also called "bite-sized learning" because the student gets information by taking short learning packages or units. Nano Learning apps can be used in many ways, such as short e-learning lessons with text, pictures, music, and video.

According to the Cambridge Dictionary, a nano is a very small number that is one billionth of the given unit. Nano learning packages or units are one billionth of the books you have to read or hours you have to train for. Nano learning is a teaching program created by the National Association of State Boards of Accountancy (NASBA). It allows a person to learn a topic in ten minutes using electronic media and without interacting with a real-time teacher. So, it is very focused on a single learning goal and has bite-sized learning material presented in an interesting way.

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3. Nano-Learning Characteristics and Functions

- Nano-Learning lasts between one and fifteen minutes.
- It is a very focused way to reach a single goal.
- It's called "self-contained" because people can learn at their own pace.
- It gives small bits of explained information.
- It can be viewed on many different devices.
- It is easy to find the real ways of solutions.
- It offers a variety of technological ways to learn, such as text, video, sound, pictures, etc. It is goal-oriented learning because it helps people right away. It gives people the freedom to learn at their own pace.

4. Factors to take into account when putting Nano Learning into Practice

- Students must be enabling access to the phone or tablets and internet.
- Learning Modules should be kept to a minimum in length.
- The learning aim should be specified, and it should be limited to a single objective.
- It is the responsibility of the teacher to determine whether or not the student is suitable for learning via audio-video based media and graphics.
- The instructor should foster a culture of collaborative learning since the majority of students learn best when they work together.

5. Research Methodology

This article New Trends in Higher Education with "Nano-Learning" discussing new trends in education, especially Nano-learning concepts in Education and learning after COVID-19 pandemic. We have framed questions for data collection related to Nano-learning uses and popularity and futuristic scopes, and collected online responses from the concerned respondents and prepare tables and graphs for results and analysis. We have used descriptive technique for our study, total sample was 126 (N=126), and used a random selection method and collected information from both first-hand and second-hand sources.

5.1 Questions Framed for Research

This study will try to find answers to a few research questions, such as:

- How does Nano Learning change the way people in India think about learning?
- And what are the futuristic trends of learning comes after COVID-19 in India?

5.1 Research main objectives

In light of the aforementioned research questions, this paper aims to accomplish with the following objectives

- **Evaluate Nano learning's futuristic trends in India.**
- **Identifying Nano-learning is an alternate in India's education sector.**

5.2 Data Analysis and Interpretation

The data was collected from a variety of primary and secondary sources, including websites, magazines, journals, Google forms, and, as well as through interviews with education system stakeholders. The questionnaire (Google Form) was used to capture data, which was then analysed with diagrams.

6. Analysis & Discussion of results

6.1 Interpretation: A total of 118 respondents out of 126 (93.6%) participates in the said survey and 88 respondents (69.%) said that Nano learning represents the future of educational practice in India, whereas just13 respondents (10.3%) held this view. Only 15 out of 126 people surveyed said that either Nano learning or Blended learning is the most up-to-date approach to education.

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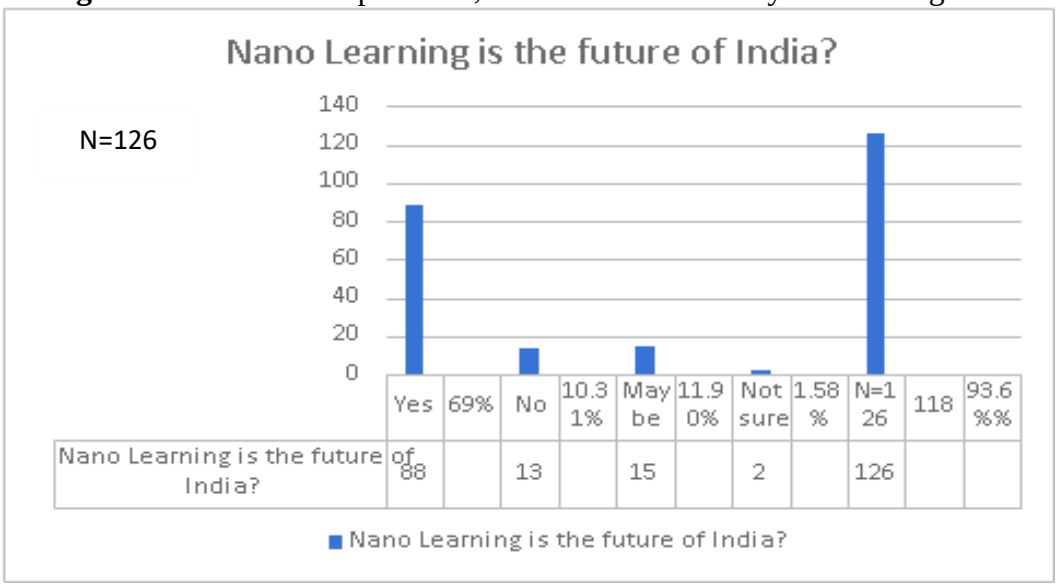
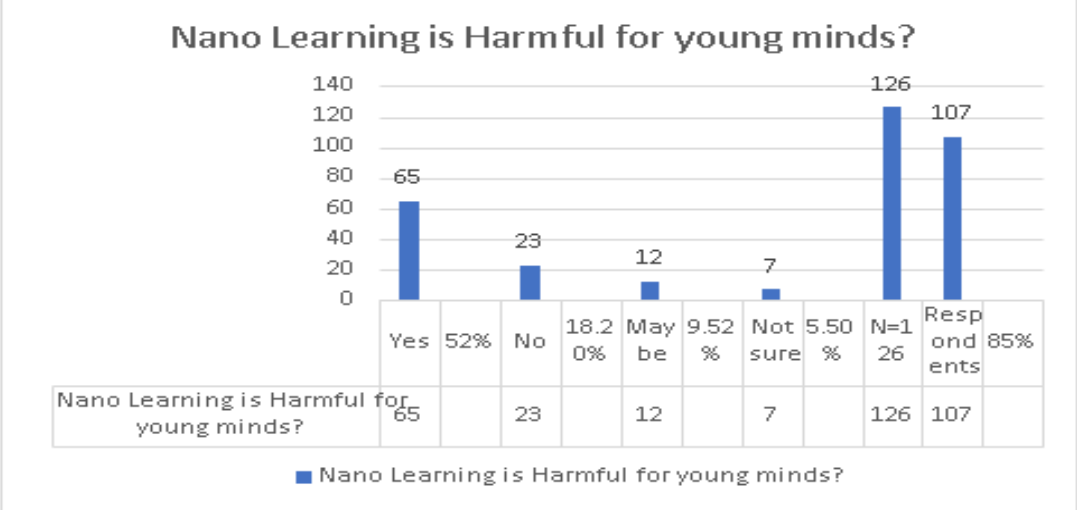
Figure: 6.1 Table of respondents, Srl.No.01 and its analysis with diagrams



6.2 Interpretation: A total of 107 respondents out of 126 (85.6%) participates in the said survey and 65 (52.1%) of respondents said that the feature that a learning program can have a time limit of 2 to 30 minutes is not suitable for young minds. 18.2% said that Nano learning is flexible and not harmful for learners, 9.52% said that it focuses on a specific topic, so it may be beneficial for learners, only 5.7% said that Nano learning is not goal-oriented, so they are unable to say something.

Figure: 6.2 Table of respondents, Srl.No.02 and its analysis with diagrams



6.3 Interpretation: A total of 118 respondents out of 126 (94.6%) participates in the said survey and 25 (19.8%) of respondents said that Nano-learning will replace the traditional classroom teachings in India, they said that Nano-learning followse the maxims and principles of learning,while 51.5% said that Nano learning is not an ulternate of traditional classroom teachings.18.2% said that it may be happened in the future because the two methods were the same. only 3.9% not sure.

6.4 Interpretation:52% of the people who answered said that they would use it in their teaching and learning, because they are confident enough that Nano-learning will improve the quality of teaching and learning, 42.8% are agreed that if they were given good training on how to use nano learning than it may be beneficial for improving quality of education. only 3.9% of respondents thought that it is very difficult for improving quality of education, even if they got good training, they wouldn't use it in their teaching-learning process. On the other hand, 6.34% of respondents were not sure that Nano learning would be used in their teaching-learning process.

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Figure: 6.3 Table of respondents, Srl.No.03 and its analysis with diagrams

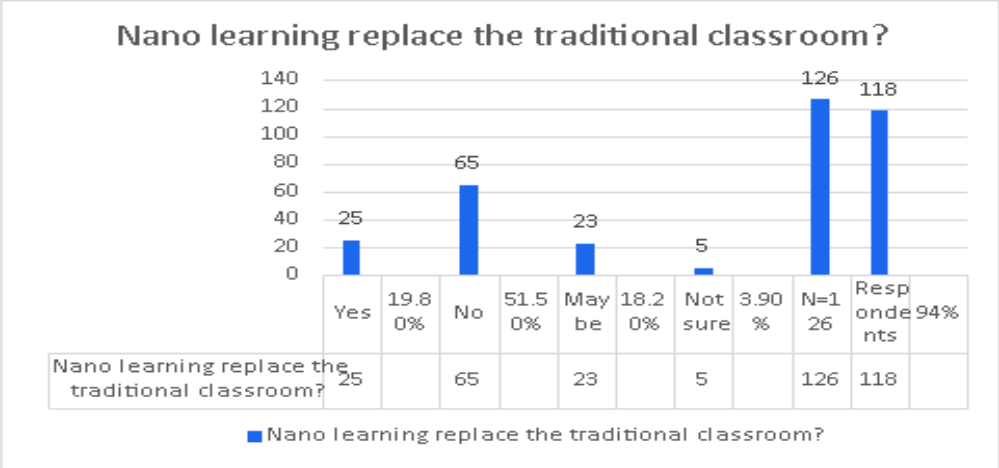
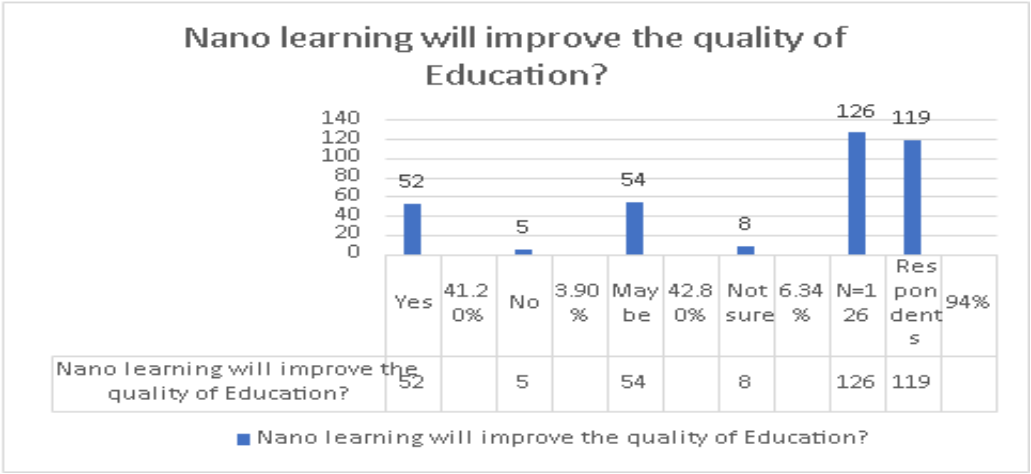
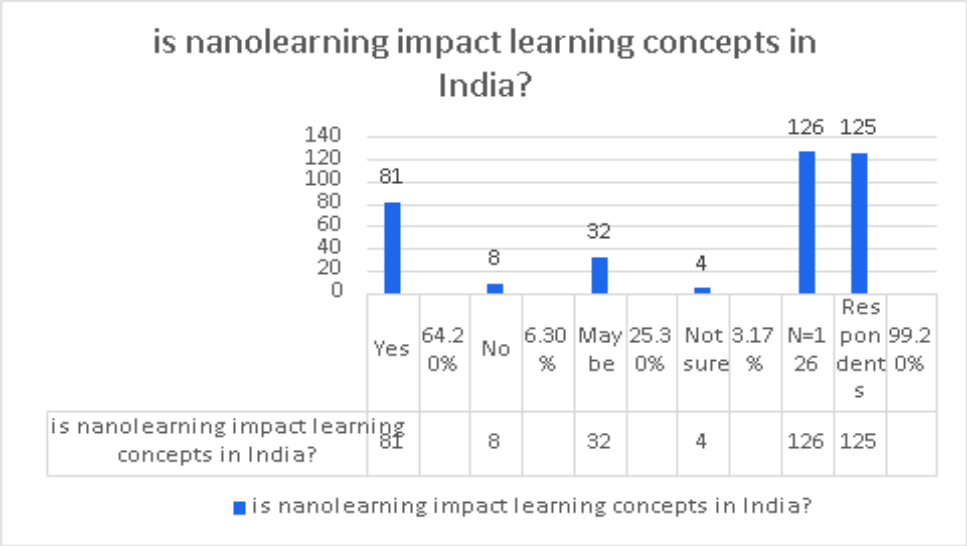


Figure: 6.4 Table of respondents, Srl.No.04 and its analysis with diagrams



9.5 Interpretation: 99.2% respondents fix their opinions on Noan-learning will impact the concepts of Indian education. 81 (64.2%) of the people who took the survey agreed that putting Nano learning into the education system can help students' knowledge and it impact positively over learning concepts in India. 6.3% of respondents disagree with the statement that using Nano Learning can help students. On the other hand 25.3% of respondents don't know if using this method will help students and change the concept of learning in India. remember more or not.

Figure: 6.5 Table of respondents, Srl.No.05 and its analysis with diagrams



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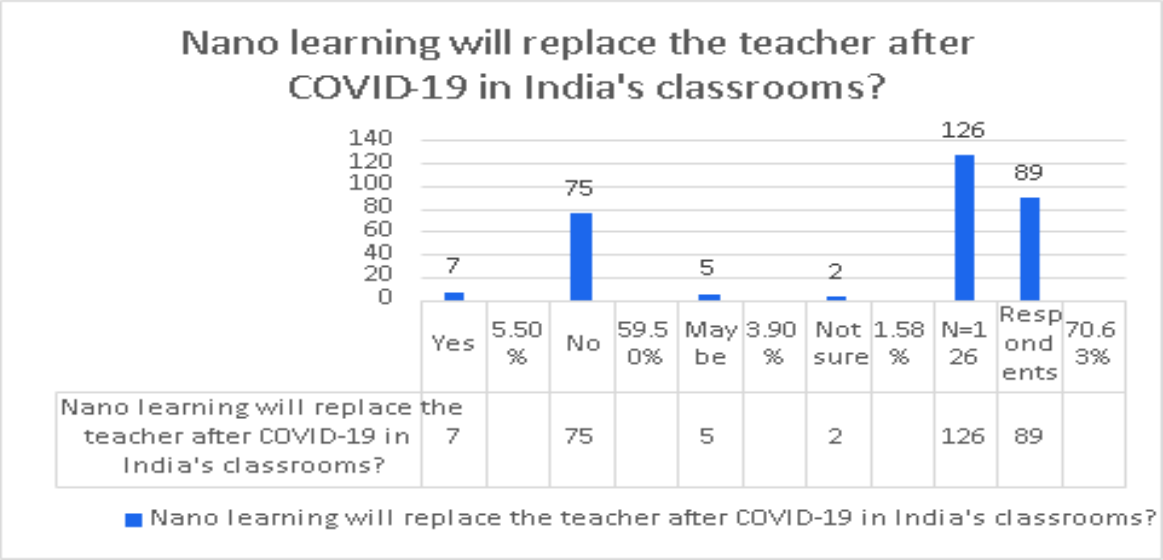
6.6 Interpretations: 70.6% peoples have participated and 59.5% are not agreed that nano-learning will replace a teacher in the future trends applied through nano-learning, 5.5% respondents thought that nano-learning was a good addition to standard learning, and will replace the teacher in the classroom, only 1.58% respondents were not sure and 3.9% it may be happened.

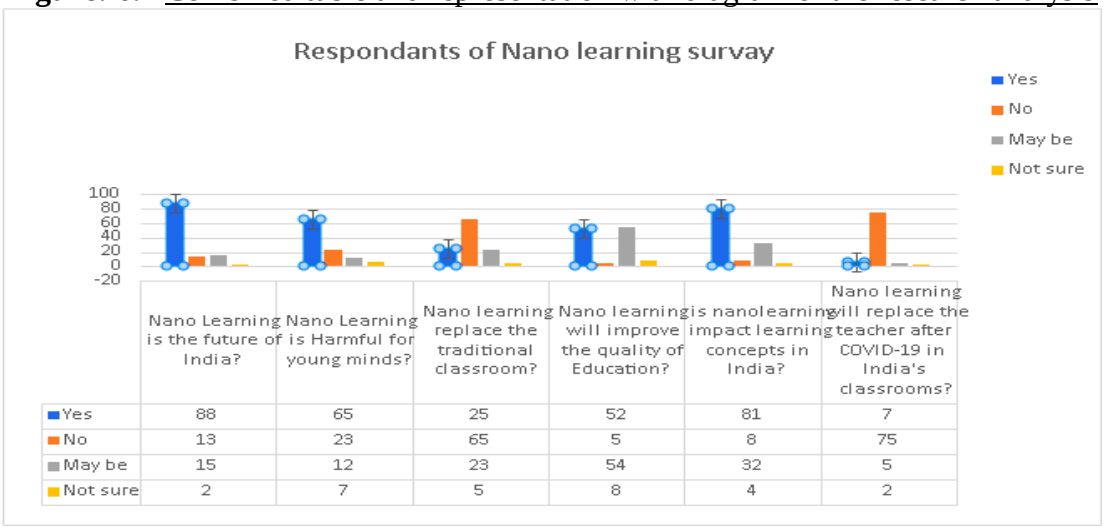
Figure: 6.6 Table of respondents, Srl.No.06 and its analysis with diagrams



6.7 Over all result

We find some solutions with the said survey about Nano-learning popularity and find that it will be the futuristic one of the choices of the young learners and techno teachers, so here we can say that with the development of science and digital technology, new ways of learning and teaching are coming up that are very different from what has been done in the past. Nano-learning is a set of innovative, constantly changing learning programs that schools in all countries are starting to use to keep up with the new trends and preferences of students.

Figure: 6.7 Combined table and representation with diagram of the research analysis



	Nano Learning is the future of India?	Nano Learning is Harmful for young minds?	Nano learning replace the traditional classroom?	Nano learning will improve the quality of Education?	is nanolearning impact learning concepts in India?	Nano learning will replace the teacher after COVID-19 in India's classrooms?
Yes	88	65	25	52	81	7
No	13	23	65	5	8	75
May be	15	12	23	54	32	5
Not sure	2	7	5	8	4	2

We use six major parts for this study of Nano-learning and find answers of our research question and conclude that Nano learning is the future of learning concepts in India after COVID-19 hammer on education and Nano-learning will contribute significantly to the field of educational teaching and learning.

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7. Findings of the study

- The notion of "Nano-learning" is a very recent one.
- Most respondents agree that Nano-learning is the future of learning concepts in India.
- It is claimed that Nano-learning supplements the conventional method of instruction. If properly trained, respondents are keen to incorporate Nano-learning into their classrooms.
- All the respondents are agreeing that Nano-learning will improve the quality of learning.
- Students' ability to remember information and the quality of instruction will both improve with the use of Nano-learning.
- Nano-learning is beneficial and not harmful for the young aspirants' minds.

8. Results for the Classroom Implications

Every day brings fresh possibilities in the ever-evolving EdTech sector. Is it important for you to go forward in your learning, digital learning design and instructional designs are helpful for young learners with nano-learning as…

- Teachers and students alike will benefit from nano-learning's ability to facilitate rapid knowledge acquisition and wide-ranging pedagogical strategies.
- The material is now easier to access.
- Served as a connecting link between top researchers and cutting-edge methods of dissemination and instruction.
- Aided in closing the knowledge gaps that plague conventional classroom instruction.
- The kids' ability to remember information improved.
- Capacity for learning is rapidly enhanced.
- It may supplement the conventional method of education, enriching both the teacher and the student.
- Learners' opportunities for growth have been expanded thanks to nano-learning.
- The learning modules may be accessed quickly and easily using nano-learning.

9. Conclusion

It's true that the Internet has made many things easier, but now that almost all education is moving online, a major concern is that decline students' attention in traditional learning concepts are seen, while parents are furious about spending more time on screen. Thankfully, here is where nano-learning has emerged as a solution. Nano-learning's shorter learning interactive modules have contributed to a reduction in screen time weariness, and one problems given one solution through Nano-learning. The emphasis is on providing more frequent, smaller doses of information or knowledge over a shorter time frame. For these reasons, as well as the fact that it improves efficiency, attracts the attention of learners, and aids in their capacity to learn in a time when all existing practices are laden with too much data, the "Futuristic Approach to Learning" has gained widespread support among educational stakeholders and others.

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