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Dynamism and Diversity in Teaching: What is Expected of Conventional Teaching of Sciences in the Year 2030?

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Abstract

Dynamism is seen as the trait of being distinguished by intense activity and progress; or the inclination for constant change, activity, or progression. It can also refer to a philosophy or school of thought that emphasizes change or the processes that generate change as an essential component of reality. Dynamism is a word that evokes energy and a strong desire to see something realized. The paper analyzes the value of being dynamic in teaching, particularly in fields such as computer science, biology, physics, and chemistry, as opposed to the prevalent use of traditional approaches. It provides more information about the potential for online science education to start today and continue through 2030. Data were gathered from 200 school teachers (50 from pre-primary, 50 from primary, 50 from secondary, and 50 from tertiary) using a questionnaire instrument via Google Forms for the study, which uses a descriptive survey method. Before being put through Chronbach's Alpha reliability test, the instrument was validated by colleagues in colleges and faculties of education; the 0.897 index shows that the instrument is quite trustworthy. Because the instrument was administered online, it was filled quickly and sent back to its intended location. Data was properly collated before being properly analyzed using charts for easy reading and visualization using the statistical program SPSS. The results indicate that there is no discernible difference between teachers who are prepared for online teaching and those who are not; additionally, there is a significantly lower rate of teachers who can use online tools that support online teaching compared to teachers who are not; and there is a strong likelihood that traditional teaching will be gradually phased out by 2030.

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Keywords: Teaching, Teaching Dynamism, Conventional Teaching, Online Teaching, Year 2030, Sciences.

Introduction

Diversity is a given in every aspect of life, including the educational process. One of the barriers to students reaching the desired outcome is the lack of ways to satisfy the demand for a diverse or dynamic learning style. [1] . Many individuals are concerned that technology will eventually replace human intelligence because technology is rapidly altering our environment. Since technology might replace many of the skills and responsibilities that we have been teaching our kids for decades, some educators are concerned that there won't be any more students to educate shortly. Education will continue to exist; it will just take on new forms. [2] . In the far future, pupils will attend class outside while using various equipment and a teacher of their choice. The evaluation of skills will be based on performance in the field rather than on a written test. There will be additional options for students to learn at various times and locations. eLearning tools make it possible for learners to learn independently and remotely. Student success will depend on mentoring since kids will include so much independence in their learning process. Teachers will serve as a focal point for our pupils as they navigate the informational maze. The instructor and the educational setting are crucial to academic performance even though the future of education appears distant. The importance of homeschooling will increase to provide flexibility and dynamism in the classroom. Students will have the freedom to learn and study anything they choose, whenever they choose, and for whatever long they choose. Additionally, it will provide greater opportunities for religious, mental, and physical freedom as well as more time to spend with family. A classroom environment at home will also be better if there isn't peer pressure, rivalry, boredom, and bullying that are so typical in traditional teaching methods. According to estimates, parents of homeschooled children save $27 billion in taxes compared to those who send their kids to public schools.

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Our world is evolving quickly. The half-life of abilities is rapidly decreasing due to the rapid speed of change, especially in the area of new technology. The era of having a "job for life" has ended. The need for important, in-demand skills that are substantially different from what has historically been taught must be reflected in the education system's adaptation to this change. In other words, we need to modify the way we teach. Additionally, not only in education but in all sectors of society, there needs to be a change in how we teach to reflect the rapid digitization that is occurring. [4] **.** In the next five years, according to LinkedIn, there will be 150 million new tech jobs created, and nearly all of the positions listed in the company's "Jobs on the Rise" report for 2022 may already be performed remotely. Online education makes it possible to balance career, school, and family obligations. Since students' physical presence is not necessary, learning is now accessible to everyone, wherever in the globe. Therefore, the way that knowledge is transmitted will significantly change toward online platforms with the use of technology. Virtual reality and other viewpoints will be incorporated into the learning process. Students will have the chance to practice online negotiation skills and idea exchange on new platforms. It is the ideal strategy for online learning.

The phrase "21st-century learning" has been used to describe a set of skills that students must master, including critical thinking, problem-solving, and digital literacy. Some describe it as the capacity for teamwork, communication, and the display of abilities that will ultimately aid students in navigating their futures [5] . The fact that formal education began around the time of the first industrial revolution and that our approach to education as a whole has remained mostly unchanged since then is telling. Students still spend the majority of their time sitting with their backs to the teacher as they present material that they are supposed to memorize in classrooms and lecture halls all around the world. No offence is intended to instructors and lecturers, but to impart the knowledge and abilities required to succeed in the twenty-first century and produce the leaders our world needs, educational delivery methods must change. In particular, rather than delivering content, teachers of the future will act as facilitators. This means that they should be more digitized in terms of both content and online learning, a trend that has been significantly accelerated by the COVID-19 pandemic; more personalized; self-paced; and self-directed learning; more group-

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based; project-based; and problem-based learning; and more bite-sized. This learning because, per a study b; Less than a goldfish (that!) Future education will need to be more immersive, with more bite-sized, snackable content, utilizing tools like virtual reality and augmented reality.

The future of classroom instruction was one of the subjects covered during the 2014 WISE summit, which had as its theme "Imagine-Create-Learn: Creativity at the Heart of Education." Given that we have already mentioned some of the most significant developments now taking place in classroom instruction, it is a topic in which we are quite interested. Questioning In the study "School in 2030," almost half of the participants predicted that online content would overtake traditional schools as the most significant source of knowledge by the year 2030. It also implied that instructors' responsibilities in the classroom will shift significantly from imparting knowledge to mentoring and helping students through their learning.

In a study titled "Classroom Training Goes Tech: Bringing Technology into the Classroom," it was revealed that rather than strictly adhering to a syllabus, tutors will take on the job of directing learners and acting as facilitators of learning. Additionally, it was discussed how crucial it is for students to be able to customize their learning to meet their requirements, do so while working in teams and sharing knowledge, and how crucial it is for teachers to use all the technology at their disposal to enhance classroom learning. There are no longer any "teachers," lectures, or mandated courses: The brick-and-mortar school will no longer be a location where students are instructed in theoretical information, but a setting where they may connect with peers and develop a variety of skills that will better prepare them for the working world. Innovation in pedagogy, society, and technology will help change the traditional "classrooms" into future "meeting rooms," where students can engage in cooperative learning and get ready for the workforce.

Problem Statement

By 2030, the use of internet content as the primary source of knowledge is projected to replace traditional board and chalk instruction, posing a severe threat to it. The lack of student engagement, poor recall, a lack of sociability, and accessibility issues will force classroom learning to adopt technology to live and thrive, therefore online learning is the answer to a whole host of issues.

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Curricula will include skills that only require human understanding and face-to-face interaction because technology can enable greater efficiency in some fields. Thus, in the courses, emphasis will be placed on experience in "the field." Schools will give pupils greater chances to acquire practical skills relevant to their future careers. This suggests that curricula will give students more opportunities to complete initiatives like collaboration, mentorship, and internships.

What should school teachers be like in the year 2030?

However, these forces are also giving us a wealth of new prospects for human improvement. There is no doubt that we are facing unprecedented problems brought on by growing globalization and a faster rate of technical development. We can forecast the future, yet it is typically unpredictable to us. Schools are preparing kids through predictions for occupations that have not yet been established, technologies that have not yet been developed, and issues that have not yet been resolved. Therefore, there is an urgent need for instructors to be dynamic in their teaching and take advantage of possibilities to study online tools and technology that will help them stay relevant and up to date-in their field [6] . There are worries that with the rapid advancement of technology, teaching may one day become obsolete. With the swift development of technology in the field of education, there is rising concern that teaching will soon be rendered obsolete. It is frequently believed that teachers' duties may be reduced and they will merely act as information brokers. The use of technology in the classroom has reduced the personal quality of teaching. These days, technology and content from diverse open sources are heavily exposed to students. Therefore, teachers are no longer considered to be the sole people who convey knowledge.

Today's educators are seeing robots in the classroom, assisting kids with aesthetically appealing digital information, giving young students augmented reality cards, and more. It is anticipated that technological advancement will accelerate in the years to come. Blockchain, the Internet of Things, and Artificial Intelligence (AI) may govern the technological world, and in this rapidly developing environment, people may also advance quickly. Thus, abilities like computer fluency, changeability, problem-solving, and high EQ will become crucial for success in the future.

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Research Questions

1. What is the significant rate of teachers prepared for the “Online teaching” future envision of the year 2030?
2. What is the significant rate of teachers that can use Online-teaching-enabled-Tools?
3. Is there any significant possibility that conventional teaching might be tumbling by 2030?

Related Literature

Below, a few academic opinions on teaching dynamism are briefly explained:

[7] outlined the fundamentals of innovative teaching, which center on the creativity and ingenuity of the teacher in altering the way they educate. It is therefore commonly known that educational institutions all around the world are implementing new concepts, procedures, and technological advancements to enhance students' knowledge. Innovative teaching is crucial for both the present and the future of education to guarantee that students reach their full potential. ICT-using teachers display some degree of self-assurance, collaboration, and teamwork. According to the teachers, integrating ICT enhances pupils' opportunities for learning and play while also fostering metacognition and creative growth. When ICT is used in the classroom, kids' confidence, independence, and fine and gross motor abilities improve.

[8] analyzed how South African Higher Education Institutions (HEIs) have adopted online teaching and learning to make the case that these institutions appear to be relying on triggers for this adoption. They provided instances of those triggers using a reflective research methodology. They also emphasized how the first trigger ought to have been a "wake-up call" for the South African HEIs. According to their argument, "pseudo-online teaching and learning" could easily occur from relying solely on triggers and failing to learn from them. Because of this, those HEIs might not be fully competitive in terms of educational reform, which would have detrimental effects on the quality of education in HIEs.

[1] It was investigated how to go more deeply into the engagement pedagogies to create the techniques to accommodate different learning styles during each session. The goal was to develop

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a framework for addressing difficulties related to learning diversity in the classroom using innovative teaching techniques. The Action Research Methodology was used to implement and discover the viability of interventions to address learning style problems. The learning style technique developed by Silverman-Felder was employed to create a lively classroom. Additionally, statistical methods were utilized to derive conclusions and assess how well-established methods for resolving learning challenges worked. According to the study, active learning methods can be carefully planned and implemented to address different learning styles in each session. The anticipated goal was attained as a result of the dynamic classroom approach, and the assessment at the end of the session corroborated this. In addition, by comparing the results of the other portion through the internal test, the tactics used were validated. Also, student response supported the approach taken to address the concerns of variety in learning styles. The study came to the conclusion that only when the instructor was aware of learning styles and active learning practices could learning diversity be properly handled. Hence, it was determined that careful planning helped the faculty make sure the session included value-added activities. The pupils were also assisted to grasp the context within which they needed to participate in the session by establishing rubrics. Similarly, students' motivation was aided by their emotions, which encouraged proactive participation. It was ultimately discovered that the scientific preparation of the session had caused socio-technical changes in the system and among the pupils.

[9] noticed that traditional teaching techniques (lecture-based) were used in ELT instruction, with the goal of rote learning rather than the growth of language proficiency. To make the learning process more engaging and successful, they therefore tried to investigate numerous novel ways and techniques.

[10] shed some light on the knowledge and abilities needed to instruct online courses in higher education. An overview of the problems with online teaching and learning was presented at the outset of the study by reviewing and evaluating literary works using the limited knowledge, abilities, and skills that instructors need to successfully instruct in online learning environments. Six categories were created from these skills and competencies: Pedagogical skills, content skills,

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design skills, technology skills, managerial and institutional skills, and social and communication skills are among the talents that educators need to have.

[11] discovered the level of readiness for online teaching among college-employed teachers. When the Google form was posted on multiple Social Media Platforms, 4913 samples from diverse disciplines and regions of the country responded. Participating were 54 Librarians, 557 Associate Professors, 239 Professors, 3707 Assistant Professors, and 362 lecturers. The instrument Readiness for Online Teaching (ROT) was used to gather the information. There were 15 statements in the questionnaire, and there were only two possible answers: "Yes" or "No." Positive comments received a score of one, while negative ones received a score of zero. And the opposite is true of negative statements. Statistical methods such as percentile analysis, mean, standard deviation, t-test, and ANOVA were used to examine the data. According to the study, readiness is important for college teachers.

[12] The authors utilized the Modular Learning modality for all public schools in the Philippines after taking into account the possibilities of online teaching in remote areas where the internet is not accessible for online learning. Self-Learning Modules (SLM) were used in the modular earning method of remote learning, which is one of the most practical for most average Filipino students. The majority of parents and guardians chose it as their children's preferred method of instruction. The SLM is based on the Department of Education's MELCS or Most Essential Learning Competencies. The purpose of the study was to identify the problems and worries related to teachers' use of the modular distance learning modality. researcher discovered that instructors in the ten different public elementary schools in the district of Buluan, Division of Maguindanao, were well-trained and ready to carry out their duties in pandemic-related modular distance learning. Additionally, they have the essential training and development to perform their job effectively and efficiently. Parents and guardians could help their kids learn using the new method, although some of them struggled to help their kids understand the modules that were given to them. According to the report, the primary schools received adequate funding and resources, which they used appropriately.

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[13] conducted a study on the best way to teach about the future while it has not yet happened. The study also examined Dr Ian Yeoman, a futurist and professor at Victoria University of Wellington, and his teaching and learning philosophies, emphasizing authenticity, problem-based learning, the use of images as creative tools, and students' navigating difficulties. To convey the idea, the study explored several learning methods and strategies, with scaffolding and gradual learning appearing primarily in this approach.

[14] working on the future of teaching and how it would develop over the next 20 years. The Teacher Leaders Network assembled a study team of 12 teacher leaders to create a future vision for teaching to put teachers' perspectives at the forefront of policy discussions. The team identified the trends outlined here after more than a year of examining the theories of policy pundits, researchers, reformers, demographers, and futurists. One of its forecasts: Future educational systems will require highly individualized instruction, the pairing of inexperienced teachers with experienced teacher leaders, the replacement of drive-by professional development with new technologies that disseminate teacher expertise, and structures that support flexible teacher roles that speed up more genuine and comprehensive teacher compensation.

[15] It was stated that technology should be used to support rather than dictate the future vision that educators and leaders construct, design, and envision. Teachers must consider carefully how to strategically use technology as it becomes a significant component of how we communicate and share ideas.

Methodology

The study uses a descriptive survey approach to gather data from 200 school teachers (50 from pre-primary, 50 from primary, 50 from secondary, and 50 from tertiary) through the use of a questionnaire instrument via Google Form. Before the same instrument was put through Cronbach's Alpha reliability testing, it was checked by colleagues in colleges and faculties of education; the instrument's good reliability is indicated by its 0.897 indexes. Because the instrument's administration was done online, filling it out and returning it to the location only

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required a brief amount of time. After properly compiling the data, charts were used in the data analysis using the SPSS statistical program.

Results

RQ1: What is the significant rate of teachers prepared for the "Online teaching" future envision of the year 2030?

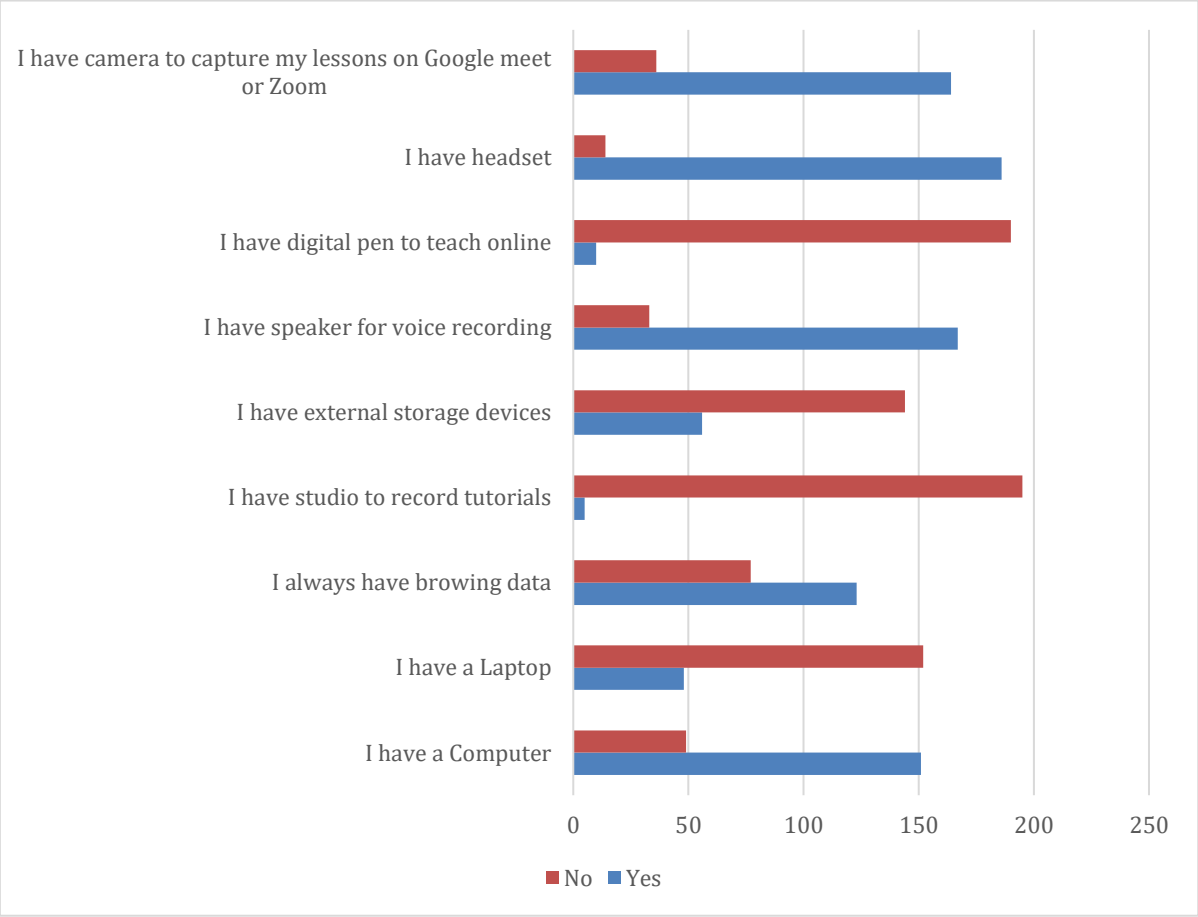

Fig. 1: The significant rate of teachers prepared for "Online teaching"

Overall, the percentage of instructors who are fully ready and prepared for online teaching by 2030 is 50.55556 (Yes- 51%) while the percentage of teachers who are not entirely ready is 49.44444 (No-49%). Since the two percentages are nearly identical, there is no discernible rate difference between teachers who are and are not prepared to teach online in 2030. Because the materials in

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Fig. 1 will be available and prepared to be used by concerned teachers, effective online teaching will be possible.

RQ2: What is the significant rate of teachers that can use Online-teaching-enabled-Tools?

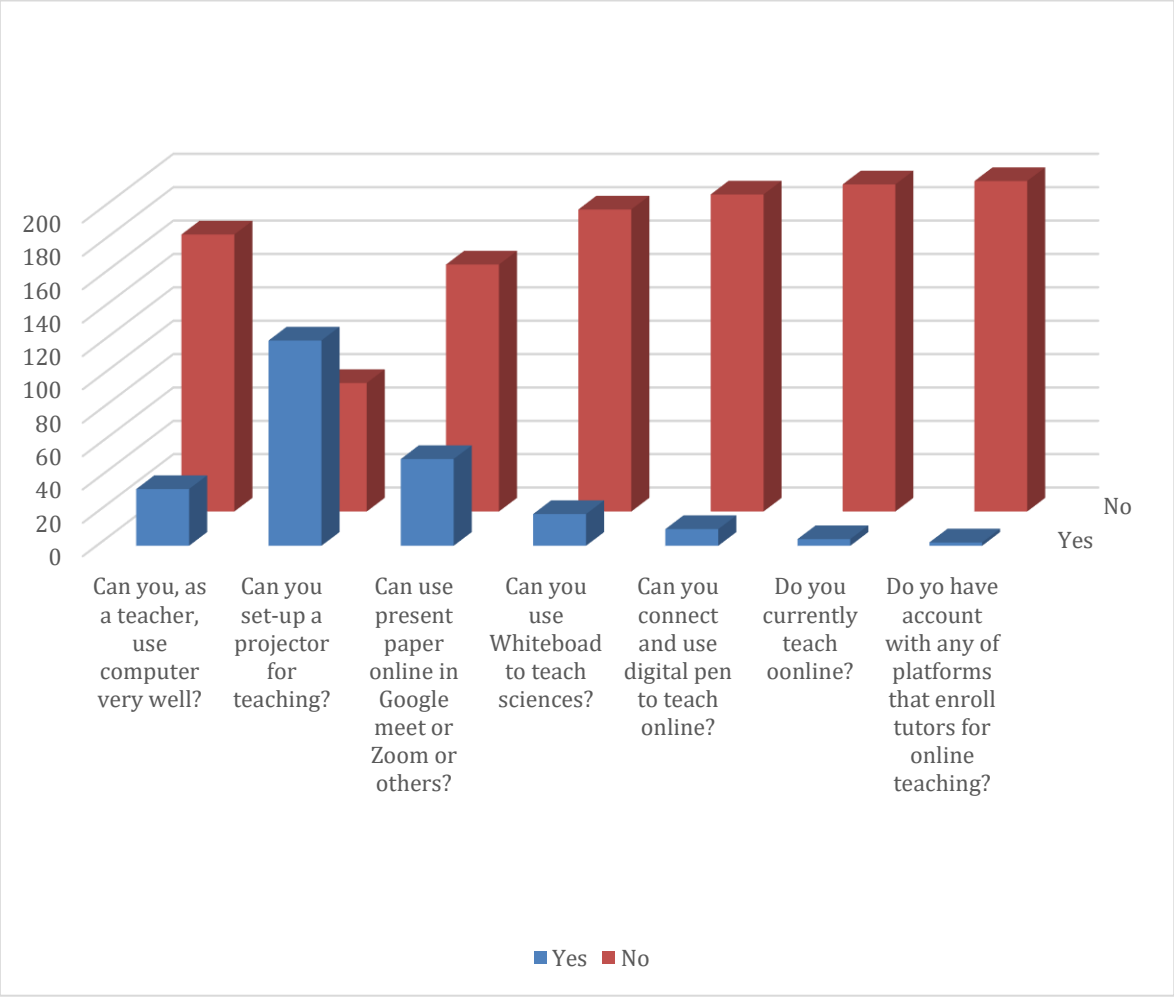

Fig. 2: The significant rate of teachers that can use Online-teaching-enabled-Tools

According to Fig. 2, 17.42857 instructors (or 17% of all teachers) can use tools for online education effectively, while 82.57143 teachers (or 83% of all teachers) cannot handle the aforementioned tools. As a result, the percentage of instructors who can use tools for online education is much lower than the percentage of teachers who are unable to use the tools.

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RQ3: Is there any significant possibility that conventional teaching might be tumbling by 2030?

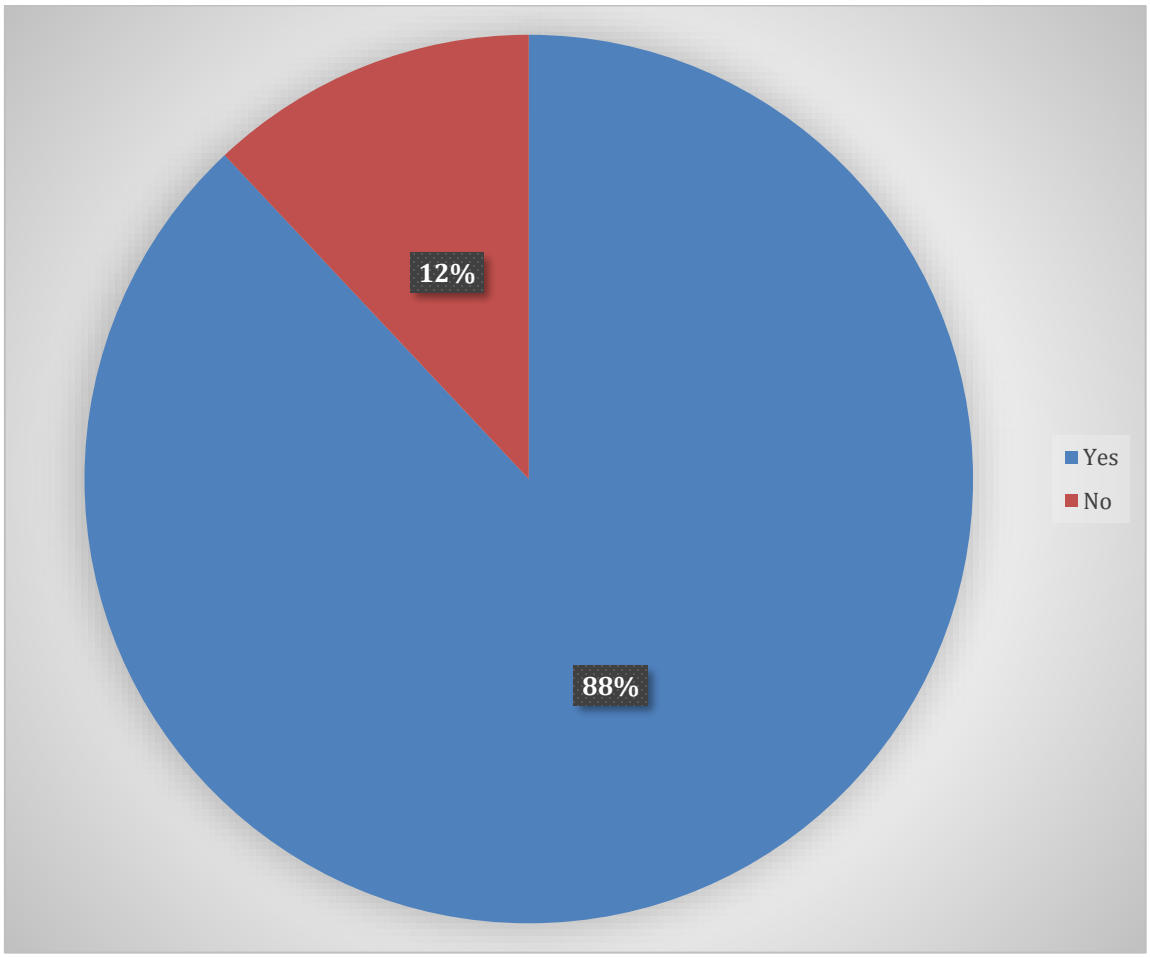

Fig. 3: The significant possibility that conventional teaching might be tumbling by 2030

The majority of participants in Fig. 3 believed that traditional teaching may decline gradually by 2030. Only 12% of respondents disputed (No) that nothing will change in conventional education by 2030, while 88% of respondents agreed (Yes) that there may be a drop in conventional teaching.

Discussion & Conclusion

Statistics from earlier studies and a literature study supported the hypothesis that the educational system may have been replaced by virtual means by 2030. For instance, 71% of students believe

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that online learning gives them greater freedom and flexibility to attend classes. [16] 93% of educators concur that tailored pacing promotes faster learning and helps students' close achievement gaps, The use of educational technologies in the classroom is crucial in the opinion of 86% of teachers, who agree with 94% of education experts that students' academic performance improved once technology was introduced into the classroom, Education technology, according to 96% of teachers, boosts students' motivation to learn. [19] , and 92% of educators said they would be willing to use instructional technology in the classroom even more than they now do. [20] . Therefore, a wise teacher gets ready to teach and train online before the moment comes when only teachers with the necessary abilities to succeed in the teaching profession will be in demand.

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