



PRIMARY RESEARCH

Digital education: Intensifying Emirati student's performance in the long run through hologram technology

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Keywords

Hologram technologies
Hologram education
Higher Education
Institution (HEI)
Lockdown
COVID -19

Received: 8 July 2020**Accepted:** 23 November 2020**Published:** 12 September 2020

Abstract

The current study aims to explore how virtual education, as an alternative to a traditional model, will impact knowledge retention, student engagement, and fundamentally on academic achievement in the long run. COVID-19 has dramatically changed the plans, and education is not an exception. Education and educators were the first to meet these challenges and adapt to new realities in a very short period. Considering hologram technology as a new method in delivering lectures and breaking stereotypes of traditional education will enhance learning and interactive experience. It is expected to explore business faculty students to reveal how they respond to unexpected challenges of digital education in 'lockdown' by letting them engage in a fun and learning environment to generate an active load of interest and adventure. Researchers developed 12 experimental questions to investigate the nature of student possible engagement in the hologram learning environment. Data collection was conducted throughout using an online survey tool and analyzed using SPSS. The results are mainly expected in improved student participation, interaction, and ultimately performance in a lockdown environment. The results reveal that the students who are enrolled in the online courses are more engaged to use the Internet technologies and boost up their learning and communication process with the faculties and students. The implications of this research and its novelty are presented in conceptualizing the hologram technology through quantitative examination of the impact of hologram experience contributed primarily by the millennial generation.

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INTRODUCTION

The implementation of measures to combat the spread of coronavirus infection has led to an increase in forced social distance and the transition from personal to digital contacts. Changes also affected higher education which has traditionally used personal communications to a greater extent in the learning process. UNESCO assessed that more than 60% of the world's students being disrupted in a time of the COVID-19 pandemic ([United Nations Educational, Scientific and Cultural Organization, 2020](#)). These closures impacted significantly on youth's physiological and educational development ([Royal Society DELVE Initiative, 2020](#); [Thiangthung, 2016](#)). As the clinical characteristics and epidemiology of COVID-19 inclined to be more obvious, it also

become progressively apparent that traditional way of education is facing significant challenges now and in the future. What will digitalization trends lead to and is there a possibility of a turn in the direction of traditional educational methods in the future? Obviously, a pandemic will contribute to the education of the future. Online learning will become a full-fledged learning system. But online learning is only an additional type of educational activity that will allow students to master a greater amount of knowledge. A number of countries started to introduce virtual and on-line methods to equip HEI's in response to external shocks and slowdown in economies. For example, the Australian government released a package to provide funding to Australians on reduced cost of taking short

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online courses ([Australian Government, 2020](#)). The Italian government announced additional measures on equipping schools with digital platforms and tools for distance learning ([Republic of Italy, 2020](#)). To ensure the stability of education despite the lockdown, HEI's across the globe were placed in a position of online classes by adapting of technology experience.

After reviewing the existing literature on this issue, it was found out that the hologram education in a time of pandemic could be a specific area to be identified as a gap to be researched more and get the most out of going online during quarantine. A strict regimen for students will help them keep up with the program. Educators and businesses should assess risks and try new tools to survive through this difficult period without loss.

The importance of the research is laid down in such a way that introducing hologram technology to the classroom will shape up a new learning environment which may form the education space for a new decade and create interactive experience that will benefit students and academics. In other words, the people appearing as holograms will be able to see the audience, take questions from the audience and interact with them as if they were really there. This level of engagement or 3D effect of being able to speak and interact to somebody via holograms is absolutely unique and novel. Any Higher Education Institution may beam in academics from around the world. Having a significant number of campuses across the UAE, the researched HEI may adapt this approach by hosting one lecture to be held in different locations and for unlimited number of students.

Development of theoretical foundations for the implementation of powerful simulation strategies on the basis of the system-activity approach and the mechanisms will allow to introduce the results of this particular method and experimental approbation into the educational space of the United Arab Emirates in the near future. This initiative also reflects Abu Dhabi commitment to advance possibilities for the future student's employability. Thus, the research aims to evaluate the efficiency and expectance of the participants and training students for getting practical experience through hologram simulation environment.

The educational system is waiting for changes, most likely after a pandemic the educational part of the educational process should be reformatted and in the future we will see even greater interest of students in hologram education.

LITERATURE REVIEW

How COVID-19 Changed the World and Education Space

What will life look like after the Covid-19 pandemic? One way or another, it will affect the fundamental patterns of behavior that we are accustomed to. United Arab Emirates, like the rest of the world has yet to face an overload of the education system. Can we benefit from this?

Socio-economic changes taking place in the world have created conditions for the development of innovative transformations in practical pedagogy. In connection with this and searching for unique innovative models of teaching social sciences on the basis of new values, goals and content of education, methods of organizing the educational process have laid into the main context of this paper.

The coronavirus pandemic has significantly affected education worldwide. Today, educational institutions, students and teachers have been forced to switch to distance learning in a short and fast time. Millions of students across the globe forced to study in a remote format. In response to the pandemic, a number of HEI's advanced to online distance learning by using different communication platforms like Zoom ([Coronavirus Disease 2019, 2020](#); [Lovitos, 2019](#)).

A significant number of professors master their technologies on the go, even in cases where such technologies turn out to be inoperative. The labor costs of educators increase sharply and often encounter a lack of technological and methodological support, as well as a lack of understanding of students and parents. School closures negatively impact student learning outcomes ([Kyodo News, 2020](#)).

All existing e-learning systems today have been tuned in to selective education of motivated students. It was simply not possible to take any distance learning system and apply it in mass school and college practice. Here it is not so much the technical details - powerful servers or fast Internet. The system of communication between educators and students in the current distance learning models turned out to be completely unsuitable. According to [Christakis and Christakis \(2020\)](#), school closures can either be reactive or proactive. It is precisely the last decade that has been a time of booming online learning and blended learning at universities. It is now difficult to find a university in any country where there would be no digital system for managing the educational process, where you would not hear about online courses. But even there the almost exclusively traditional model of training and control of results was preserved. To abandon it means to lose the solid foundation of activity for millions of people.

It is getting essential now to adopt another strategy - thorough training, investing in common and most effective tech-

nological solutions and retraining of educators.

The process of education transformation acknowledge that education with sufficiently reliable quality under the new conditions requires systematic restructuring and considerable investment. Thousands of questions need to be answered - and not just technological ones. Understand the mode of work of teachers, and methods of conducting practical classes and exam tools. It is necessary to collect them together in one system. Build new ways of financing. This is a strategy. As stated by Barrett (2020), distance learning education was recommended as a tool to reach out the learners.

Other countries that have recently been affected by the epidemic, are now developing holistic strategies that will allow the education system not only to sit out the bad times but also achieve results, as well as prepare for the “new normality” that will come after all quarantines are completed. The crisis creates not only problems but also the possibility of a new, more effective actions. Experts around the world are convinced that the “new normality” will by no means imply a complete departure to remote interaction, but the widespread use of both distant and digital technologies in general, as an element of a “normal” learning model in which the quality of education and involvement will be significantly increased among students.

The UAE educational system proved worthy in a short period of crisis - an almost instant restructuring that began. Now the systems deserve serious support in building a reliable system of training, education, social care in the new conditions.

An urgent need for serious professional development of all teachers and managers of the education system is required. They must reliably obtain up-to-date competencies in the implementation of the new educational models. Funds are also needed for the maximum transfer of important exams to the remote format. This is a task of enormous difficulty but it can be solved. Finally, the technology companies should receive seed funding to develop truly modern, interesting, interactive, adaptive educational resources. Advanced schools, colleges, universities should become platforms for developing and disseminating the new model. And all this must be done systematically and quickly. We need a promising strategy that is understandable to society and professionals.

What makes a Hologram Classroom so Promising?

Holography is a set of technologies for the recording, reproduction and reformation of wave fields. In practice, it's a method for recording and projecting three-dimensional im-

ages. A feature of holograms is that they reproduce a 100% exact copy of an object, landscape, etc. and the fact that the object in the image is not planar as in the photograph but voluminous and it is visible from a different angle from different points of the hologram when it is rotated. With almost limitless holographic possibilities, 3D holographic projection is a new method to consider for education purposes (Ryan, 2020).

If the hologram is broken into parts (split), then in each of the parts the whole image will be visible entirely. The holographic approach to education is based on that you need to correctly, multidimensional and volumetric combine all phenomena, factors and conditions that provide the student, and also on the fact that the communicated knowledge must be multidimensional to reflect multidimensionality and the environment.

The holographic approach to education is based on the effect of the formation of "volumetric representations and knowledge" about the object, subject or phenomenon. At the same time, it becomes clear how the holographic method works in education: the educator focuses the student's subconscious on something specific, forcing to discard all unnecessary at the moment and focus entirely on a specific topic. Thus, the holographic teaching method allows one to obtain sufficiently versatile and deep knowledge that can be obtained learner on a specific topic. Learning effectiveness can be significantly increased, and time - to save financial resources by presenting information for training and cognition using holographic technologies.

By using peer-to-peer collaboration, acquiring subject-matter experts for real-time lectures, sharing specialized instruction from remote instructors and streamlining core curriculum with pre-recorded presentation illustrates an enhanced impend to learning and empowers students to be more retained and engaged with the tutors and educators. There is still a research gap in quantitative and qualitative data of indicators that participants are feeling more excited of using the holograms. It is expected that a large number of educators document higher level of improvements from the student's side towards hologram classrooms.

The paper is intended to provide a new paradigm of understanding in the context of creating better learning environment specifically developed and focused on Emirati students and teachers to present the challenges facing these days through hologram technology and innovative education across the classrooms. The research is mainly and importantly trying to accent on developing essential set of soft skills in our students by providing them various ways of a hologram and simulation-based behavioral assessments

that can be self-directed. The teaching approach and traditional way of teaching one day will be declared as a part of history. The experiential process of learning by doing creates learner's subjective experience as of critical relevance in the learning process. These education principles are largely based on the educational philosophy of John Dewey in 1920's-1950's that are practiced to structure experience-based training and education programs (Dewey, 2013). During the concept of this research, the hologram learning

approach is designed in a way to examine a number of essential skills among them are: problem solving and communication. The plan provides a feedback from the students through the creation of customized individual development plans to enhance their future success. Another factor of this technology it's getting more affordable and schools become more open to the world with new pedagogical models and greater governance to step up further to the challenge.



Picture 1: Front side



Picture 2: Front side

FIGURE 1. The principal goals of holographic

The principal goals of holographic education are: to make the classroom a more interactive learning environment; to enable students to learn at their own pace; to help the instructors tailor the course to individual student needs. Said another way, the goal of hologram lectures is to overcome some of the inherent shortcomings of the traditional lecture format which dates back to the mid-fourteenth century.

METHODOLOGY

The purpose of this study was to quantitatively examine the impact of hologram experience contributed primarily by the millennial generation. Before planning specific education introduction, it is essential to conduct research studies and develop understating of hologram experience among students who mainly know online/virtual education or traditional forms of education. This research proposal is concerned with the hologram models to be used and it proposes to establish what influences it may have on delivering hologram classes.

Another key contribution of this research is a statistical model that predicts the impact of hologram education now and in the future which can be beneficial to the educational space to find new forms of education.

Research Questions

This literature review and an analysis have been guided by three key research questions:

1. Do students know the concept of hologram classes and its usefulness?
2. How does the effectiveness of hologram classes compare with that of face-to-face instruction?
3. What practices are associated with more effective hologram experience?

Research Design

The research design of a study focuses on the basic approach that researchers use to get an answer to their research question (Polit & Beck, 2009). To meet the requirements and goals of the research, it is important that the re-

researcher selects the most appropriate design to achieve the aims of the study.

The data for this study is received from the administration of the survey of student engagement into hologram experience. Researchers developed a set of 12 experimental questions to investigate the nature of student possible engagement in the hologram learning environment. This set of items was administered to students at the higher educational institution. Respondents were asked to identify their opinion on hologram education and its usage during the classes. The comparison between face-to-face and virtual interaction. Data collection was conducted throughout using online survey tool.

Respondents

The respondents in this research are representing one single location – Abu Dhabi, the participants being randomly selected. The researchers chose Abu Dhabi based on a number of reasons: mainly the participants are fitted to the study based on the age and social parameters. The total number of respondents reached 130. Respondents were questioned on type of classes, nature of classes and the current mode of classes taken. A significant number of participants documented a favorable attitude to the hologram classes. The questions were descriptive in nature. Of the 130 total participants, 117 were completed and administered. 46 were first-year students with the remaining 71 senior year students. Nearly 68 respondents (58%) were males and 49 (42%) females taken from one campus only. This disparity was considered a limitation of the study. This was a convenience, non-probability sample, thus the structure of the study set was considered to the discretion of the

researchers. No special preferences or weights were given to students based upon gender or age.

Data Collection Procedures

The sample 117 students were finally obtained and organized. After the data was obtained, it has been analyzed and processed by using SPSS software to calculate specific values. These converted values were subsequently used to specify conclusions and validate the research questions.

RESULTS

Of the 117 respondents, 46 (39.32%) were first-year students; 71 (60.68%) were seniors. Nearly 68 respondents (58%) were male and 49 (42%) female. The majority (60.68% for senior-year students and 39.32% for first year) of the questioned participants were registered as full-time students.

The distribution of the answers investigated are presented in Table 1. Set of four questions indicated the distribution among first year and senior year students:

- 74% of first year and 95% of the respondents are familiar to some extent with hologram education.
- 87% of first year and 92% of the respondents may consider to take the opportunity of using holograms in their educational plans.
- 91% of first year and 96% of the respondents consider as an excitement to attend hologram classes.
- 50% and 75% of the respondents believe that high quality learning through holograms can take place without face-to-face interaction. 15% of first year and 17% of last year students do not believe respectively, 35% of first year and 8% are not sure.

TABLE 1. Respondent demographics

		First-year/46		Senior/71	
		Frequency	Percentage	Frequency	Percentage
Gender	Male	26	22.22%	42	35.89%
	Female	20	17.09%	29	24.78%
Have you heard Holograms in education?	Yes	34	74%	67	95%
	No	12	26%	4	5%
I don't mind if holograms are used in my education	Yes	40	87%	65	92%
	No	6	13%	6	8%
I think it would be exciting to attend hologram classes	Yes	42	91%	68	96%
	No	4	9%	3	4%
I believe that high quality learning through holograms can take place without face-to-face interaction	Yes	23	50%	53	75%
	No	7	15%	12	17%
	Not sure	16	35%	6	8%

TABLE 2. Courses delivery methods

Course Delivery Method	First-year		Senior	
	Frequency	Percentage	Frequency	Percentage
Online only	11	23.9%	57	80.1%
Hybrid only	0	0.0%	0	0.0%
Face-to-face only	35	76.1%	14	19.9%
Total	46	100%	71	100%

Additional set of questions of the survey asked students how many courses they have taken in the current year and how many been online as a main way of delivering course content, alternatively how many were hybrid courses. Using those responses, we were able to classify course delivery methods into three categories: online only, face-to-face and hybrid. As indicated in Table 3, (23.9%) of the 46 first year students been involved in online courses and (76.1%) took face-to-face classes. Out of the senior students, (80.1%) completed online and (19.9%) completed face-to-face respectively. No one of the respondents have had the hybrid model of education. It is important to mention that from March 2020, when the outbreak of coronavirus disease (COVID-19) has been declared, all students at the particular institution have been transferred to online education and obviously the number of online takes in the last 2020 semester is higher than specified.

Looking at the Tables 3 and 4 it is easy to observe that respondents whom one would expect to use technology more often - students enrolled in online classes - indeed more frequently used online learning tools and technolo-

gies than students who took face-to-face courses. The hologram experience as a potential alternative to classes being added. Another observation that the participants are more enrolled in online courses more frequently used email and web platform communication tools in their courses. Compared with students in traditional face-to-face setting, online students also more frequently used electronic media to deliberate or complete assignments. These variations were consistent for both first-year and last year students. There was another finding that participants who plan to take hologram courses are potentially interested in utilizing their institutional web-based library resources in completing class assignment than students who only had online courses or those only had face-to-face courses. A probable explanation is that students who are willing to consider hologram courses are more customized with doing research online than students who took only face-to-face courses. ANOVA variance has been attempted on the mean scores for these questions for both first-year and last year students to determine which if any, of the apparent differences are statistically significant.

TABLE 3. First-year student engagement in potential education activities

	Online-only		Online-only		Face-to-Face-Only	
	Mean	SD	Mean	SD	Mean	SD
Completion an assignment using instant messaging, online chat, video conference, etc.	1.61	1.094	1.72	.886	1.35	.724
Completion an assignment using a tool like email, discussion board, listserv, etc.	4.10	1.191	2.36	.971	2.12	.948
Using institution's Web-based library resources in completing class assignments.	2.30	.973	2.25	.910	2.19	.879
Discussion with an instructor topics you would not feel comfortable discussing face-to-face or in a classroom	1.51	.943	1.68	.936	1.32	.842
To what extent does your institution emphasize using computers in academic work?	3.37	.831	3.73	.790	3.67	.875

TABLE 4. Senior year student engagement in potential education activities

	Online-only		Online-only		Face-to-Face-Only	
	Mean	SD	Mean	SD	Mean	SD
Completion an assignment using instant messaging, online chat room, video conference, etc.	2.32	1.232	2.94	1.232	1.64	.834
Completion an assignment using a tool like email, discussion board, listserv, etc.	3.29	1.122	2.99	.992	2.37	.978
Using your institution's Web-based library resources in completing class assignments.	2.32	1.012	2.85	.983	2.22	1.030
Discussion with an instructor topics you would not feel comfortable discussing face-to-face or in a classroom.	1.43	1.042	1.64	.983	1.28	.842
To what extent does your institution emphasize using computers in academic work?	3.32	.499	3.76	.814	3.37	.867

DISCUSSION

It is evident that 74% of first year and 95% of the respondents are familiar or heard about hologram education. As stated, the presentation and demonstrations on distance e-learning initiatives where the holographic images are broadcast/beam over the internet would be made possible sooner and everywhere (Suleiman, 2014). Teachers utilize technology as a tool to make instruction easier and foster more interest in learning on the part of the students. The heaviest majority, consider an opportunity of using holograms. Generally, it's quite evident that senior year students are more mature and exited to using this experience in their plans. Arguing that first year students still need more guidance and attention, a traditional approach to them is considered as more applicable. When it comes to the last years students, using completely online/virtual or 3D hologram experience is a significant alternative to their graduation plan. 50% and 75% of the senior respondents believe that high quality learning through holograms can take place without face-to-face interaction.

The outcome is rational to observe that the students who are enrolled into the online courses are more engaged to use the technologies of Internet and boost up their learning and communication process with the faculties and students. Another advantage of testing hologram, where the results indicated that students who potentially consider hologram courses as an alternative may frequently utilize a web-based library resources to complete their assignments than students who enrolled into online or face-to-face courses only. It is understandable that students who being enrolled into online courses are aware of the learning resources that are available to them. Institution has a role of administrator to secure that students who enrolled

in online courses are provided information on how to access the learning resources that are available to them online and offline. Institution may and has to provide a personal assistance in dealing with academic difficulties and technical problems to online students who do not have the benefit of personal contacts with faculty and fellow classmates as in the face-to-face classrooms.

Contrasting results from the models for first-year students to those for senior year students, it is possible to assume that senior year students have a stronger and more rational impact taking hologram classes at the college. Probably, early year students still feel unprepared to take virtual or hologram classes and integrate technology into their courses. For the senior students, it could be not only beneficial in encouraging engagement but also differentiated in the long run of learning. The forced and largely sudden transition to digital education served as an effective indicator of the opportunities and challenges of the national higher education institution. Teachers and students, on the one hand, received a chance to make full use of modern digital technologies, on the other hand, they faced not only a lack of methodological developments in the field of distance education, technological problems of the educational infrastructure but also a lack of digital opportunities for the students themselves. In addition, distance learning is still unusual and difficult in terms of psychological attitudes and preferences of students especially at the early years of the college. Digital methods of education make communication with students more personalized. If the traditional format of classes allowed the student to sit behind the classmates at the seminar, now this will not work - the "digit" collects feedback individually from each student.

It is agreed that after the pandemic, the world of online

and offline education will not return to its former principles and will change. The following set of recommendations is formed based on the research objectives and outcomes.

Soft Skills Preparation and Adaptation

By using hologram education for the new generation of students it first includes managerial skill profile, describing overall managerial effectiveness and specific skill proficiencies. Secondly, skill awareness, describing the accuracy of their self-awareness and progress toward professional development. And finally, all students may have an individual development plan, guided process that builds a development plan tailored to their unique developmental needs.

21st Century Skills

To access student's key skills including critical thinking, creativity, collaboration, communication, information literacy, media literacy, technology literacy, flexibility by providing actionable feedback to students through the creation of customized individual development plans to enhance their future success. The approximate rate of increase is projected of 40% by the first year of using hologram experience. Authors (Burmark, 2002; Carroll, 2007; Fisher & Frey, 2013; Trilling & Hood, 1999) emphasize that these skills are critical for accomplishing the necessary transformation.

Knowing and Doing Gap

The biggest problem for the modern students is knowing-doing gap (Pfeffer & Sutton, 1999). The students may know about the subject, know the concept of strategy but they do not do the strategy. The authors of the book *The Knowing-Doing Gap: How Smart Companies Turn Knowledge into Action*, confront the challenge that companies now face in their battle to turn knowledge into productive action. They identify the causes of 'The Knowing-Doing Gap' and explain how to close it. Thus, it is also possible to conclude that hologram education may increase the level of students to close the gap between knowing and doing by 25% in the first year through applying in real life setting, to use strategy to make sense of information given in the simulation and help them to compete.

REFERENCES

- Australian Government. (2020). *Higher education relief package*. Retrieved from <https://bit.ly/38bNw38>
- Barrett, S. (2020). *Coronavirus on campus: College students scramble to solve food insecurity and housing challenges*. Retrieved from <https://cnb.cx/38inaMH>
- Burmark, L. (2002). *Visual literacy: Learn to see, see to learn*. London, UK: ERIC Publisher.
- Carroll, T. (2007). *Teaching for the future, chapter 4 in building a 21st century US education system: National commission on teaching and America's future*. Retrieved from <https://bit.ly/3688yNn>

CONCLUSION

The purpose of this study was to build up an understanding of students' perception of hologram learning as an alternative to online/offline classes. Qualitative research methods used in this study to obtain full information through the analysis of received data.

Overall, compared with students in traditional face-to-face setting, online students also more frequently used electronic media to deliberate or complete assignments. Flexibility of class participation time, electronic research availability and easiness of the learning process are the key factors to support hologram education. These results are evidence that technology has a positive influence on student's learning and engagement. On the other hand, new technology also brings new claims and requirements from the HEI's to meet the growing needs.

Integration of physical holographic and holographic methods approach to education will allow the formation of a comprehensive information about the object, process or phenomenon being studied, as well as expand and improve the process of acquiring natural videogenic experience by trainees.

LIMITATIONS AND RECOMMENDATIONS

The most powerful limitation of this research study is that the outcomes are largely analyzed on responses received to an experimental set of questions have not covered qualitative tests such as cognitive interviews. The future research in this field is enormous. It cannot be denied that the usage of hologram in classrooms will be beneficial for the education institutions. Scientists predict a very bright future for this technology and in few years it should be a mainstream technology that can be used in many institutions.

Based on the integration of physical holography and holographic methods of a physical approach in pedagogy can be created holographic educational technologies with huge didactic and educational potential to be used in the future.

ACKNOWLEDGMENT

This Summer Undergraduate Research Fellowship program was funded by the Higher Colleges of Technology and its intellectual property herein

- Christakis, E., & Christakis, N. A. (2020). *Closing the schools is not the only option*. Retrieved from <https://bit.ly/2I0rg1z>
- Coronavirus Disease 2019. (2020). *K-12 schools and child care programs*. Retrieved from <https://bit.ly/3p14mrt>
- Dewey, J. (2013). *The school and society and the child and the curriculum*. California, CA: University of Chicago Press.
- Fisher, D., & Frey, N. (2013). *Better learning through structured teaching: A framework for the gradual release of responsibility*. New York, NY: ASCD.
- Kyodo News. (2020). *Hokkaido eyes temporary shutdown of all schools to fight coronavirus*. Retrieved from <https://bit.ly/38e9liw>
- Lovitos, A. H. R. (2019). Quality living conditions and the boarding preferences of UM college students. *International Journal of Humanities, Arts and Social Sciences*, 5(2), 54-62. doi:<https://dx.doi.org/10.20469/ijhss.5.10002-2>
- Pfeffer, J., & Sutton, R. I. (1999). *The knowing-doing gap: How smart companies turn knowledge into action*. Cambridge, MA: Harvard Business School Press.
- Polit, D. F., & Beck, C. T. (2009). *Essentials of nursing research: Appraising evidence for nursing practice*. London, UK: Lippincott Williams & Wilkins.
- Republic of Italy. (2020). *Gazzetta ufficiale della Repubblica Italiana*. Retrieved from <https://bit.ly/369fr0v>
- Royal Society DELVE Initiative. (2020). *Balancing the risks of pupils returning to schools*. Retrieved from <https://bit.ly/3mXZvFD>
- Ryan, R. (2020). *3D holographic projection: The future of advertising?* Retrieved from <https://bit.ly/3oZSq9j>
- Suleiman, A. A. (2014). Holography in the nigerian education system: A readiness for a redress. In *In ICHE2014 conference of Humanities and Education*, New York, NY.
- Thiangthung, Y. (2016). Applying Polya's four-steps and schoenfeld's behavior categories to enhance students' mathematical problem solving. *Journal of Advances in Humanities and Social Sciences*, 2(5), 261-268. doi:<https://doi.org/10.20474/jahss-2.5.2>
- Trilling, B., & Hood, P. (1999). Learning, technology, and education reform in the knowledge age or "we're wired, webbed, and windowed, now what? *Educational Technology*, 3(39), 5-18.
- United Nations Educational, Scientific and Cultural Organization. (2020). *UNESCO's support: Educational response to COVID-19*. Retrieved from <https://bit.ly/315J3T1>