Availability of Critical Success Factors Contributing to Digital Transformation from Academic Staff Perspective at the Faculty of Nursing, Alexandria University.

Aya Mohamed Abdulmawgood.
Demonstrator of Nursing Administration, Faculty of Nursing, Alexandria University, Egypt

Prof. Fatma Mostafa Baddar
 Professor of Nursing Administration, Faculty of Nursing, Alexandria University, Egypt

Nadia Hassan Ali Awad
Assistant Professor of Nursing Administration, Faculty of Nursing, Alexandria University, Egypt

Heba Mohamed Al Anwar Ashour
Assistant Professor of Nursing Administration, Faculty of Nursing, Alexandria University, Egypt

*Abstract: The global higher education institution is significantly impacted by the growing importance of digital transformation. To raise educational quality and make learning environments more effective, educational institution is being forced to identify the critical success factors of utilizing digital transformation. Identifying the critical success factors of utilizing digital transformation is critical because it helps ensure that the institution can maximize the potential of digital transformation. **Aim:** to identify the availability of critical success factors contributing to digital transformation from an academic staff perspective at the Faculty of Nursing, Alexandria University. **Study design:** A Descriptive research design was used to conduct this study. **Setting:** The study was conducted in the Faculty of Nursing, Alexandria University. It includes nine departments namely; Nursing Administration, Psychiatric Nursing and Mental Health, Pediatric Nursing, Medical and Surgical Nursing, Community Health Nursing, Obstetrics and gynecology nursing, Nursing Education, Critical Care Nursing, and Gerontology Nursing Department. **Subjects:** all academic staff members (N=320) who were available during the period of data collection and agreed to participate in this study. **Tool:** Digital transformation critical success factors questionnaire. **Methods:** the first one was by the researcher through self-administered questionnaires, and the second one was delivered through social media (formal faculty WhatsApp group) Using the Microsoft team platform. **Results:** The study subjects perceived moderate availability of overall digital transformation and critical success factors contributing to digital transformation. **Conclusion:** the present study showed that the study subjects reported a modest availability of the critical success factors that contribute to digital transformation. **Recommendation:** higher education institutions wishing to pursue digital transformation projects must maximize the availability of critical success factors contributing to digital transformation.*

Keywords: critical success factors, academic staff perspective, digital transformation.

Introduction

Academic administration and management rely extensively on technology in commercial offices, virtual laboratories, digital libraries, and so on. Technology also has an impact on education, liberating classes from time and space constraints. Digital transformation is a nationwide trend for any country and all of its institutions, particularly universities, and it serves as the foundation for any change. As a result, managers of all institutions must take an active role in executing digital transformation by researching and understanding all variables that will significantly contribute to digital transformation implementation (Bentahar & O'BRİEN, 2019; Nagimzhanova, Baimanova, Magavin, Adzhibaeva, & Betkenova, 2019; Tsvetkova, Arutyunyan, Saenko, Shramko, & Kalimullin, 2019). In addition to the unique challenges posed by the COVID-19 pandemic's impact on global supply chains and

markets, particularly working conditions. The pandemic is having an impact on all organizations around the world in a variety of ways, forcing businesses to undergo digital transformation and accelerate existing measures. The term digital transformation refers to the shift to the widespread use of digital technologies in a variety of economic and social sectors that enhance or replace conventional services (Kaminskyi, Yereshko, & Kyrychenko, 2018).

The higher education system, particularly the system of university education, is one of the areas that have a significant amount of potential for digital transformation. A digital transformation strategy must be created, and new information and communication skills must be developed, as part of university education.

In the digital age, success is determined by defining critical success factors of a digital transformation. To be able to aim for a strategic transformation, organizations must first understand what is critical for the successful implementation of DT (Morakanyane, O'Reilly, McAvoy, & Grace, 2020). These critical factors are defined as "those few things that must go well to ensure success for a manager or an organization" (Boynton & Zmud, 1984). According to research on critical success factors, it is critical to be aware of potential dimensions of success and their interconnections. For example, from the standpoint of management, it is also critical to consider individual workplace improvements (Grover, Jeong, & Segars, 1996). Stemming from Egypt Vision: 2030 in line with Egypt's commitment towards Sustainable Development Goals (SDGs) 2035, the Government of Egypt (GoE) has formulated a comprehensive vision that includes the fundamentals related to transforming Egypt into a digital society where all technologies in almost all fields of life can be integrated (Kamel, 2021). Specifically, the Faculty of Nursing as a higher educational institution affiliated with Alexandria University, had implemented E-learning, used innovative technologies in teaching, learning, and research, incorporated technology into the curriculum, and offered many online courses through using the Microsoft team platform.

Significance of the study

this study will benefit decision-makers by directing them to the importance of digital transformation and knowing its requirements for restructuring educational institutions and developing strategic frameworks, being capable of setting strategies to support and develop its components and adapting leadership methods to the environment of continuous change and reformulate a clear corporate vision consistent with the era of digital transformation which contributes to the effectiveness and efficiency of the education process, and academic staff development.

Aims of the Study

This study aims to:
Identify the availability of critical success factors contributing to digital transformation from an academic staff perspective at the Faculty of Nursing, Alexandria University.

Research Question:

-To what extent critical success factors contributing to digital transformation are available from an academic staff perspective at the Faculty of Nursing, Alexandria University?

Materials and Method

Materials
Design: descriptive research design was followed in this study.

Settings:

The study was conducted in the Faculty of Nursing, Alexandria University. It is an educational, research, and community-based governmental organization and this great edifice strives with all strength, with its scientific and administrative staff and the elite of its students, towards achieving distinction and international accreditation through a strategic plan and a scientific system that keeps pace with the prevailing global and regional changes. It includes nine departments namely; Nursing Administration, Psychiatric

Nursing and Mental Health, Pediatric Nursing, Medical and Surgical Nursing, Community Health Nursing, Obstetrics and gynecology nursing, Nursing Education, Critical Care Nursing, and Gerontology Nursing Department.

Subjects:

The study subjects included all academic staff members (N=320) who were available during the period of data collection and agreed to participate in this study. Their distributions were as follows: Faculty managers, Faculty members, and supporting staff with at least one year of experience. They are classified as follows; professor emeritus (N=49), professor (N=26), assistant professor (N=50), lecturer (N=81), assistant lecturer (N=58), and demonstrators (N=56).

Tool:

A digital transformation critical success factors questionnaire was used:

It was developed by the researcher based on the review of the current related literature of Al-Najjar (2004), Elliot, et al. (2016), and Mahmoud, (2018), to identify to what extent critical success factors contributing to digital transformation are available from an academic staff perspective at the Faculty of Nursing, Alexandria University?. It consisted of 51 items divided into five main dimensions namely; Top management strategies for utilizing digital transformation (13 items), Academic scientific communication (10 items), Faculty teaching (9 items), Evaluation (10 items), and Scientific research (9 items). In addition, a socio-demographic and professional data tool developed by the researcher includes socio-demographic data such as; age, sex, and professional data such as; academic position, years of experience, and department.

Method:

- Approval from the Research Ethics Committee, Faculty of Nursing, Alexandria University was obtained.

- An official permission was obtained from the management of the Faculty of Nursing, Alexandria University to collect the data from the study subjects.
- The tool was present in the English language and tested for content validity by five experts in the field of Nursing Administration. There were: one Professor, two Assistant professors, and two lecturers. Modifications were done based on their comments.
- The reliability of the tools was tested to measure the internal consistency of the items composing each of them employing Cronbach's alpha coefficient. The Cronbach's alpha reliability test for the availability from an academic staff perspective in the faculty was 0.943.
- A pilot study was conducted on 10% (N=35) of the study subjects to check and ensure clarity and feasibility of the tools and identify obstacles and problems that may be encountered during data collection and determine the average time of data collection. They were excluded from the sample because some modifications had been done to the study tool.

- Ethical considerations:

-A written informed consent from the study subjects was obtained after explaining the aim of the study.
-Regarding the distribution of the questionnaire online, the return of the questionnaire was considered as acceptance for participation.
-Confidentiality of the collected data was maintained and anonymity was assured.

Data collection:

Data were collected by two methods according to the study subject's interest, the first one was by the researcher through self-administered questionnaires, it was hand-delivered to the study subjects at their working settings, the subject was asked to return it back to the researcher after a definite period of time at the study setting, the second one delivered through social media as (formal faculty WhatsApp group) Using Microsoft team platform. The

time needed to fill out the questionnaire was 15-20 minutes. Data collection and tabulation took a period of six months from 28 June to 30 December 2022.

Statistical analysis

After data were collected it was revised, coded, and fed to statistical software IBM SPSS version 25. Quantitative data were summarized by the arithmetic mean and standard deviation. All statistical analysis was done using two-tailed tests. A P-value less than or equal to 0.05 was considered to be statistically significant.

A. Descriptive statistical analysis: included the weighted mean with standard deviation, for the numeric data while percent to describe the frequency of each category for categorical data.

B. Inferential statistical analysis:

Pearson correlation test: a test that measures the statistical relationship, or association, between two continuous variables. It is known as the best method of measuring the association between variables of interest because it is based on the method of covariance. It gives information about the magnitude of the association, or correlation, as well as the direction of the relationship.

One Way ANOVA: It is used to compare averages or reach a decision regarding the presence or absence of differences between performance averages in groups that have been subjected to different treatments with the aim of arriving at factors that make an average of averages different from other averages.

Independent Samples Test: This test is used to measure the significant difference between the averages of two independent samples.

RESULTS:

Table (1) Socio-demographic and work-related characteristics of study subjects.

Table (1) shows that the vast majority of academic staff (93.4%) were female. Regarding their age, (42.2%) of academic staff have from 30 - 40 years old. (23.1%) of academic staff were working in the medical-surgical department. Regarding their Job title,

(25.3%) were Lecturers, (18.1%) were assistant lecturers, (17.5%) were demonstrators, and (15.6%) were Assist. Professors, (15.3%) were professors' emeritus, and (8.2%) were professors. Concerning the years of experience, more than one-third of them (36.8%) have less than 10 years of experience.

Table (2) Mean score and standard deviation for academic staff perspective of availability of critical success factors contributing to digital transformation at the Faculty of Nursing, Alexandria University (N=320).

Table (2), shows the study subjects perceived moderate availability of overall digital transformation and its critical success factors contributing to digital transformation, by mean score (3.13±34.81).

Table (3): The relationship between academic staff age, and their perception of the availability of critical success factors contributing to digital transformation at the Faculty of Nursing, Alexandria University (N=320).

Table (3) demonstrates that; Regarding the overall availability of perceived digital transformation and its critical success factors, the findings show no statistically significant differences between academic staff age and their perception of availability related to critical success factors of utilizing digital transformation (P= 0.409). Top management strategies for utilizing digital transformation, Faculty teaching, and Evaluation, while there is a statistical significance difference between academic staff age and their perception of availability related to critical success factors in terms of scientific research where (p = 0.005). Regarding the perception of the availability of Scientific research at the Faculty of Nursing, Alexandria University; the academic staff who have less than 30 years have the highest mean score, where the mean (27.75±7.58).

Table 4: Correlation Matrix between academic staff perspective of overall availability to digital transformation and its critical success factors of utilizing digital transformation (N=320).

Table 4 illustrates that there were high positive strong **significant** correlations between academic staff perspective of overall availability for digital transformation and its critical success factors in terms of top management strategies for utilizing digital transformation, academic scientific communication, faculty teaching, evaluation, and scientific research where (p=0.000 r= 0.832, p= 0.000 r= 0.839, p= 0.000 r=0.818, p=0.000 r= 0.882, p=0.000 r= 0.798) respectively.

Discussion

The global higher education institution is significantly impacted by the growing importance of digital transformation (Nachit & Belhcen, 2020). Digital transformation is assisting in creating more engaging learning experiences, improving student outcomes, and the efficiency of university operations. It also contributes to the development of more personalized learning experiences tailored to each student's specific needs (Haleem, Javaid, Qadri, & Suman, 2022). Identifying the critical success factors of applying digital transformation is critical because it helps to ensure that the institution can maximize the potential of digital transformation, it also assists in identifying areas for improvement and provides a roadmap for implementing digital transformation initiatives (Holotiuk & Beimborn, 2017).

In this context, the result of this study revealed that the study subjects reported a modest availability of the critical success factors that contribute to digital transformation, the availability of these factors in the faculty is slightly extremely crucial for bringing a lens on the weak and strong areas for ensuring improvement. This is possible because the faculty is doing its best to meet the requirements of digital transformation, but still there are obstacles beyond its control because most of these requirements are expensive. These results, in accordance with Peimani and Kamalipour (2021), also found that there was a lack of appropriate technological infrastructure, including a shortage of digital devices, a consistent internet connection, and learning spaces. Universities in Palestine have always had a shortage of funding; they are largely supported by student fees and get little government assistance. Universities came under tremendous pressure as the pandemic crisis and demand for digital transformation grew, and the technical gap became increasingly apparent and difficult.

In contrary Castillo, Villarreal, Mora, and Alaín (2021) claimed that the University of Uruguay worked on an emergency plan for online teaching and learning. The plan has four dimensions: (1) emergency online teaching and learning; (2) redesign of online teaching and learning; (3) adaptation of digital systems to increasing demand; and (4) communication strategy. They recognize the importance of critical and contextual educational innovation.

In terms of age as study subjects' sociodemographic characteristics, there were significant differences in critical success factors for utilizing digital transformation regarding academic scientific research, study subjects who have less than 30 years of experience have the highest mean score in the perception of the availability of digital transformation and critical success factors contributing to digital transformation. This could be because elder study subjects have more academic experience and are more aware of the necessity of digital transformation.

This study's results are congruent with Alhubaishy and Aljuhani (2021) who claimed that teachers' reluctance to adopt new services and technologies is significantly influenced by their age. By regularly adjusting to new technologies and services, instructors can solve this problem and get past the obstacle. Also, Baudin, Gustafsson, and Frennert (2020) showed that the majority of older respondents (65–74 years old) believed that the digital transformation in the workplace was occurring at the "right pace," while the younger respondents (18–24 years old) thought it was

happening at a "too slow" pace. While De la Boutetiere, Montagner, and Reich (2018) found that younger generations were more likely to view digital transformation as a way to improve customer experience, while older generations were more likely to view it as a way to reduce costs.

As regards the Correlation Matrix between dimensions of digital transformation as perceived by the study subjects for the availability of crucial factors contributing to digital transformation, the study findings revealed that there were high positive strong significant correlations between academic staff perspective of the overall availability of digital transformation and the availability of its critical success factors in terms of, top management strategies for utilizing digital transformation, academic scientific communication, faculty teaching, evaluation, and scientific research. This could be because academic staff believes in the importance of digital transformation in improving the higher education system, and the availability of digital tools and resources can have a significant impact on academic staff's perception of digital transformation and its critical success factors. Academic staff may be more ready to adopt digital tools and resources into their teaching, research, and communication practices if they are widely available and accessible.

In agreement with the current study results, Castro Benavides, Tamayo Arias, Arango Serna, Branch Bedoya, and Burgos (2020) discovered that the dimensions within an HEI that have been permeated by DT processes found in the literature are as follows: teaching, infrastructure, curriculum, administration, research, business processes, human resources, extension, digital transformation governance, information, and marketing, as they have a positive correlation to each other. In contrast to the study's findings, Volery and Lord (2000) showed that technology, the teacher, and the student's past technological experience are the three most important success factors for online delivery. Moreover, it was asserted that the lecturer would still be crucial to online education, although as an information navigator and catalyst for learning.

Despite the benefits of digital transformation, some gaps may negatively impact higher education institutions. As a result, to maintain the acceptable quality of higher education institutions, policymakers should use these important success elements to maximize digital transformation success.

Conclusion

Based on the findings of the present study, it could be concluded that the study subjects reported a modest availability of the critical success factors that contribute to digital transformation and the availability of these critical success factors is crucial to ensure that the digital transformation efforts are aligned with the organization's goals and objectives.

Recommendations
Executive level:

The top management should:
-Create a vision for digital transformation.
-Develop digital transformation usage by reviewing policies and digital transformation standards.
-Adoption of a digital transformation culture and supporting the culture of continuing education.
-Adopt effective decision-making based on data analysis.
-Motivate and inspire co-workers to utilize their maximum potential.
-Willing to invest major resources in digital transformation projects with a high probability of success.
-Shift management and supervision processes from the traditional form to the management information system.

Alexandria pedagogical innovation and e-learning unit:

-Train faculty members on controlling communication with students through social media outside the faculty.

-Provide opportunities for scientific communication between Faculty members through conferences and seminars published on the faculty's website periodically.

-Train faculty members on time management in a digital learning environment.

-Motivate faculty members to develop, design and use the E-book instead of the paper book.

-Offering ongoing courses to help faculty members improve their skills in online education via the Internet.

-Train faculty members on planning meetings and following students' paths through video Conferences-webinars,
strengthening the skills training for learners in interaction and platform usage.

-Provide incentives to those who excelled in the field of e-learning.

Evaluation and measurement unit:

It could focus on:

-Facilitate collaboration between faculty members and educational technology experts in the preparation of electronic exams.

-Train faculty members on how to create question banks for online Courses using question Bank software.

-Spreading the culture of digital evaluation across the Faculty.

-Providing faculty members, with the necessary capabilities to use modern electronic methods in the evaluation.

Faculty members:

-Creating the potential to hold online meetings and seminars to communicate with students to solve their problems.

-Fostering a digital learning culture.

-A new approach to curriculum development is needed, and the content of the curriculum and teaching now calls for reform, need to secure improvements in every detailed element in order to make sure that the whole instructional system goes well.

Table (1): Socio-demographic and work-related characteristics of academic staff at the Faculty of Nursing, Alexandria University (N=320).

Demographic and work-related characteristics		Frequency	Percent
Sex	**Male**	21	6.6%
	Female	299	93.4%
Age	**less than 30 years**	61	19.1%
	30 - 40 years	135	42.2%
	more than 40 years	124	38.7%
Academic Department	**Medical-Surgical**	74	23.1%
	Critical	29	9.1%
	Pediatrics	45	14.1%
	Obstetrics	37	11.6%
	Psychiatric	28	8.7%
	community	31	9.7%
	Geriatric	27	8.4%
	administration	29	9.1%
	Education	20	6.2%
Job title	**professor emeritus**	49	15.3%
	professor	26	8.2%
	Ass. prof	50	15.6%
	lecturer	81	25.3%
	Ass. lecturer	58	18.1%
	demonstrators	56	17.5%
Years of Experience	**less than 10 years**	118	36.8%
	10 - less than 20 years	87	27.3%
	20 - less than 30 years	49	15.3%
	30 or more years	66	20.6%

Table (2): Mean score and standard deviation for academic staff perspective of availability of critical success factors contributing to digital transformation at the Faculty of Nursing, Alexandria University (N=320).

Dimensions	Availability responses in the faculty
	Mean ± SD
Top management strategies for utilizing digital transformation	**3.07±10.33**
Academic scientific communication	**3.34±7.67**
Faculty teaching	**3.34±7.22**
Evaluation	**3.10±8.11**
Scientific research	**2.82±8.43**
Overall	**3.13±34.81**

Availability responses mean
1.00 to 2.59 minimal availability of perceived critical factors
2.60 to 3.39 moderate availability of perceived critical factors
3.40 to 5.00 maximum availability of perceived critical factors

Table (3): The relationship between academic staff age and their perception of critical success factors of utilizing digital transformation and their availability at the Faculty of Nursing, Alexandria University (N=320).

Dimensions	Availability Responses			F	P. Value*
	Age				
	less than 30 years (n=61)	30 ≥ 40 years (n=135)	more than 40 years (n=124)		
Top management strategies for utilizing digital transformation	Mean±SD	Mean±SD	Mean±SD	0.999	0.370
	41.48±9.43	39.89±10.24	39.19±10.84		
Academic scientific communication	33.26±7.88	33.75±7.94	33.13±7.29	0.225	0.799
Faculty teaching	29.08±6.03	30.33±7.95	30.16±6.93	0.659	0.518
Evaluation	30.57±7.14	31.78±8.56	30.31±8.06	1.147	0.319
Scientific research	27.75±7.58	25.87±8.75	23.65±8.16	5.417	0.005*
Overall	162.15±31.00	161.61±37.04	156.44±34.08	0.896	0.409

Table (4): Correlation Matrix between academic staff perspective of overall availability to digital transformation and its critical success factors of utilizing digital transformation (N=320).

			critical success factors of availability of utilizing digital transformation from an academic staff perspective					
			Top management strategies for utilizing digital transformation	Academic scientific communication	Faculty teaching	Evaluation	Scientific research	overall
critical success factors of availability of utilizing digital transformation from an academic staff perspective	Top management strategies for utilizing digital transformation	r						
		p						
	Academic scientific communication	r	0.600**					
		p	(0.000)					
	Faculty teaching	r	0.574**	0.649**				
		p	(0.000)	(0.000)				
	Evaluation	r	0.613**	0.701**	0.758**			
		p	(0.000)	(0.000)	(0.000)			
	Scientific research	r	0.584**	0.590**	0.497**	0.640**		
		p	(0.000)	(0.000)	(0.000)	(0.000)		
	overall	r	0.832**	0.839**	0.818**	0.882**	0.798**	
		p	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	

* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed)

References:

- Alhubaishy, A., & Aljuhani, A. (2021). The challenges of instructors' and students' attitudes in digital transformation: A case study of Saudi Universities. Educ Inf Technol (Dordr), 26(4), 4647-4662. doi:10.1007/s10639-021-10491-6

- Al-Najjar., F. R. (2004). The role of information technology in the transformation towards digital organizations, The Fifth Annual Arab Conference in Management. Arab Administrative Development Organization League of Arab States, Sharm el Sheikh.

- Baudin, K., Gustafsson, C., & Frennert, S. (2020). Views of Swedish elder care personnel on ongoing digital transformation: Cross-sectional study. Journal of medical Internet research, 22(6), e15450.

- Bentahar, A., & O'BRİEN, J. (2019). Raising students' awareness of social justice through civic literacy. Journal of social studies education research, 10(1), 193-218.

- Boynton, A. C., & Zmud, R. W. (1984). An assessment of critical success factors. Sloan management review, 25(4), 17-27.

- Castillo, A., Villarreal, V., Mora, D., & Alaín, L. (2021). State of Digital Transformation in the Universities of Central America (pp. 109-128).

- Castro Benavides, L. M., Tamayo Arias, J. A., Arango Serna, M. D., Branch Bedoya, J. W., & Burgos, D. (2020). Digital Transformation in Higher Education Institutions: A Systematic Literature Review. Sensors (Basel), 20(11). doi:10.3390/s20113291

- De la Boutetiere, H., Montagner, A., & Reich, A. (2018). The keys to a successful digital transformation. McKinsey & Company.

- Elliot, T., Kay, M., & Laplante, M. (2016). Digital Transformation in Higher Education. How Content Management Technologies and Practices Are Evolving in the Era of Experience Management, Digital Clarity Group.

- Grover, V., Jeong, S. R., & Segars, A. H. (1996). Information systems effectiveness: The construct space and patters of application. Information & Management, 31(4), 177-191.

- Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. Sustainable Operations and Computers, 3, 275-285. doi:https://doi.org/10.1016/j.susoc.2022.05.004.

- Holotiuk, F., & Beimborn, D. (2017). Critical success factors of digital business strategy.

- Kamel, S. (2021). The Potential Impact of Digital Transformation on Egypt.

- Kaminskyi, O. Y., Yereshko, Y. O., & Kyrychenko, S. O. (2018). Digital Transformation of University Education in Ukraine: Trajectories of Development in the conditions of new technological and economic order. Информационные технологии и средства обучения, 64(2), 128-137.

- Mahmoud, W. (2018). Factors of academic human resource development in digital age. (Publication No:9), Published Master thesis. Faculty of Education. Benha University.

- Morakanyane, R., O'Reilly, P., McAvoy, J., & Grace, A. (2020). Determining Digital Transformation Success Factors.

- Nachit, H., & Belhcen, L. (2020). Digital transformation in times of COVID-19 Pandemic: the case of Morocco. Available at SSRN 3645084.

- Nagimzhanova, KM, Baimanova, L, Magavin, SS, Adzhibaeva, BZ & Betkenova, MS (2019)."Basis of psychological and professional personality development of future educational psychologists." Periodico Tche Quimica, 16(33), pp.351-368.

- Peimani, N., & Kamalipour, H. (2021). Online education and the COVID-19 outbreak: A case study of online teaching during lockdown. Education Sciences, 11(2), 72.

- Tsvetkova, M., Arutyunyan, M., Saenko, N., Shramko, L., & Kalimullin, D. (2019). Incorporation of philosophical ideas in science fiction literature. Opcion, 35(Special Issue 23), 598-612.

- Volery, T., & Lord, D. (2000). Critical success factors in online education. International Journal of Educational Management, 14, 216-223. doi:10.1108/09513540010344731