# Incorporating Business Students' Preferences For E-Learning Into University Knowledge Management Following The COVID-19 Pandemic

RHEA N. ACEVEDO

Cba Sg Adviser
Iso Internal Auditor
Jrmsu-Katipunan Campus
Daanglungsod, Katipunan, Zamboanga Del Norte, Philippines
Email: rheaacevedo@jrmsu.edu.ph

*Abstract*

University campuses across the United States were compelled to shut down for the duration of the COVID-19 outbreak, which presented new obstacles and insights that must be incorporated into academic knowledge management techniques and procedures. Learners' study habits must be given extra consideration. Students' learning patterns and preferences were studied in a semi-systematic literature review as well as a poll of management students. In the context of knowledge management techniques for electronic learning in colleges, the findings of the research can be relevant for transitioning to distant virtual education. For any approach to ensure an effective and smooth transition from classroom instruction to virtual learning and teaching, the core quantitative study was completed before the lockdown began. The findings provide important information. With an emphasis on gender and education level, learners' pre-epidemic studying patterns, their usage of communication resources, and preferences for remote education solutions have been examined. As a part of a method with practical and academic ramifications, the study correlates the results with possible knowledge management techniques in colleges.

Keywords: business students; Internet; electronic learning; COVID-19; knowledge management

## Introduction

Distance learners and part-time scholars all across the world have benefited from the first moves toward online learning that were taken nearly three decades ago. The COVID-19 pandemic and the subsequent need for physical distance necessitated the use of online schooling. While some of these issues had been discussed in scholarly literature previous to the virus, academic institutions found themselves in varying degrees of readiness for such a task, starting with the lecturers' mindsets towards matters related to teaching and the use of technology (Anton & Shikov, 2018). When universities and colleges made the abrupt switch to online learning begin in February and March 2020, organizational flexibility and prior e-learning experience were critical factors.

When the traditional school paradigm is under strain (Garca-Pealvo et al., 2018; Lau et al., 2018), web-based alternatives to traditional schooling were already a potential reality before the COVID-19 epidemic. "Employers require talents, not simply knowledge or credentials, students want employment, not knowledge or awards (...), while many top institutions stress study, often at the price of instructing." Digital natives' attributes have led to "significantly lagged behind other enterprises" shifting from an analog to an electronic business model "with fewer than 5 percent of college budgets" devoted to industrial technology purchases "even after technological innovations and socioeconomic reconfiguration particular to digital natives' features" (Rajhans et al., 2020). The COVID-19 outbreak sparked a trend that soon spread to nearly every academic institution in the country. When it came to implementing broad distant learning, college faculties of Humanities and Economics appeared to be in a stronger position than those of vocational and technical institutions. As a result, business schools must expect a controlled IT revolution relying on the antecedents of "the college, business world, and student" changes (Krishnamurthy, 2020).

As a result of the COVID-19 outbreak, business schools must pay attention to e-learning, student change, and knowledge management lessons. As a result of the epidemic, learners' preferences for studying in a digital environment are linked to other lessons acquired for future practical KM techniques in higher education institutions.

For these reasons, this research has three main objectives: (1) examining e-learning-related solutions for knowledge management; (2) looking into how business learners' study habits change as they progress through school; (3) developing ideas for how to integrate learner transformation in business schools' teaching of knowledge management within the

setting of COVID-19, as seen from the standpoint of their educational life. Specifically, we need to address the following issues:

1. What is the current state of e-learning-related knowledge management in academic schools, especially colleges and business schools?
2. How are students taught in the electronic medium compared to the traditional classroom in higher education systems?

First, a semi-systematic evaluation of existing literature was carried out. A series of expert focus groups indicated two research gaps: gender-based e-learning preferences and possible disparities by educational level. These statistical significances focused on the next step, a quantitative survey. Students' learning styles and preferences were examined in quantitative and semi-systematic literature reviews done by the writers, who then applied those findings to a discussion of university knowledge management.

Both theoretical and practical conclusions can be drawn from this article with the COVID-19 pandemic in mind. The results can help instructional management understand how to transition from a conventional to an online educational framework while taking into account student learning preferences.

**Literature Review**

E-learning

The word "e-learning" does not have a universally agreed-upon definition. A wide variety of educational material distribution techniques, computer-based educational platforms, and instructional products, including multimedia, simulations, and games, fall under the umbrella of e-learning in a generic sense. E-learning systems must be evaluated based on their benefits and drawbacks for their users. According to the research, e-learning offers numerous advantages in higher education: flexibility in location and time, cost-effectiveness by decreasing expenditures connected with transportation and physical facilities, and chances for learners to proceed at their speed (Aini et al., 2020, Alqudah et al., 2020). E-smaller learning's learning units may help students better comprehend the material and have a longer-lasting influence on their learning while the use of digital tools promotes learners' engagement and cooperation. As with any technology, e-learning has its own set of drawbacks, such as a decrease in learners' sociability capabilities, an enhancement in the likelihood of test cheating, and the need for pricey

new technical abilities that may widen the digital gap between the learners and lecturers.

According to this study, confidence and satisfaction in e-learning systems may be impacted by factors like the e-learning administration and support service quality, instructors' quality and teaching materials, and e-learning security/privacy measures (Mashaqi et al., 2020). Learners' and instructors' impressions of the e-learning process are essential for evaluating satisfaction levels. According to Yawson and Yamoah (2020) and Alhabeeb & Rowley (2018), and Al Mulhem (2020), the flexibility and design of the course, the communication with the instructor and with other schoolchildren, and web-based evaluation approach are important indicators of student happiness in online learning. Still, the technology itself seems to have little effect (Al Mulhem, 2020). Learners' perceptions of the quality of e-learning are heavily influenced by their teachers' knowledge of e-learning and their ability to adapt lessons to the digital context (Alhabeeb & Rowley, 2018). Generating satisfactory satisfaction from students depends on both the teacher's ability to educate and their attitude (Al Mulhem, 2020). Therefore when choosing instructors for e-learning, it is vital to evaluate their knowledge of the topic they instrct and their attitude toward technology and instructional platforms, both of which are critical (Al Mulhem, 2020). Similar to technology investments, new instructional tools and content and interaction adaptations for instructors' e-learning training is equally significant aspects of the process. Online education utilizing electronic tools has a higher degree of confidence because of these features.

After 25 years of discussion and practice, the COVID-19 epidemic showed that e-learning is still impacted by the digital gap, even if it has been updated with new types of technology. In 2020, the limitation of Internet connection for some segments of the population in certain regions of the globe was identified as a problem with online learning. Accessibility and availability of information are critical for today's youth (Iivari et al., 2020), and they can’t exist without inexpensive and dependable Internet access. Investment in school connections throughout the globe might be a source of money for a variety of stakeholders, from telecom retail and wholesale carriers to the local communities. Bridging the digital divide is essential for every development plan, as shown by the COVID-19 epidemic (Azubuike et al., 2021). Learners who are not connected to the Internet and instructors who are not educated in virtual learning are two of the biggest obstacles to spreading e-learning. Pre-pandemic discussions also touched on this topic (Zhao et al., 2022). Schools can help bridge a portion of the digital divide by encouraging e-learning for both adults and

students interested in continuing schooling (Zhao et al., 2022). It's important for teachers to experiment with numerous methods to address technology injustice and more innovative approaches when the problem is more complicated, like addressing digital illiteracy or socioeconomic disparity. (Ben et al., 2022). According to Iivari et al. (2020), students from different socioeconomic backgrounds may benefit from e-feature learnings by forming online forums since learners who actively participate in web-based communities prefer to exchange more knowledge, which improves class engagement. Students who do not feel as though they alone choose to remain in school rather than drop out. However, to achieve these results, unique talents and school policy and methods are required; otherwise, the whole process is unpredictable and relies on instructors' particular abilities and engagement.

The Internet of Things, artificial intelligence, and Mobile technologies all have the potential to revolutionize education in the near future (Duan et al., 2019; v Leal Filho et al., 2018). It has been documented in the research (Leal Filho et al., 2018) and the reality of the COVID-19 epidemic that digital natives (young people who grew up with internet connections) utilize tablets or smartphones for online courses and searching for information. Adapted material (e-books, e-courses) must be standard, as should mobile-friendly online classes, mobile games, and mobile collaboration tools for any e-learning system. This might be the norm (Leal Filho et al., 2018). Aside from the obvious need for mobile system adaptability, AI-based education is still in its infancy and has yet to influence teaching significantly. However, it is anticipated to do so when big data begins to be used more widely in the near future. AI applications in schooling currently include intelligent adaptive learning (e.g., virtual lectures that enable students to customize their own learning experiences), intellectual language processing application, voice assessment, and intelligent searches (facial recognition and computer vision). In the future, it is envisaged that AI-based education would allow for personalized education, placing the requirements of each learner at the forefront and building a framework for superior learning results. New kinds of knowledge management may be predicted to be required for both learner data models and the integration of artificial intelligence into educational initiatives.

A Review of Higher Education's Experience with Knowledge Management

Organizations of all kinds and especially educational providers like colleges, think that knowledge management (KM) is a critical component. An organization's capacity to collect, transform, and implement

specialized information (Antunes & Pinheiro, 2020) as part of any method geared toward performance and innovation may be shown via the deployment of a knowledge management system (Santoro et al., 2018; Yuming Xu et al., 2022). The discussions about whether institutions are ready for organized KM in higher education date back more than two decades (Mardani et al., 2018, Saif, 2020). Students in colleges and universities are used to having access to a wide range of information resources at their fingertips because of the nature of higher education schools (Mardani et al., 2018). The finest examples of KM strategies and practices for prospective translations might be found in enterprises; however, being an academic institution does not indicate that a company is an efficient model (Saif, 2020). For Velásquez and Lara (2021), the four elements of leadership, culture, technology, and measurement are crucial to transferring knowledge management from theory to practice in higher education. Velásquez and Lara (2021) emphasize the need for instructional leaders to consider how schools might acquire resources and build appropriate systems for creating, sharing, and transferring knowledge. With regard to making choices, good leaders use appropriate information, while good cultures foster a spirit of empowerment and knowledge sharing among the school's employees. According to the same authors (Velásquez & 2021), Knowledge Management (KM) may be used to build and enhance assessment procedures and to evaluate educational institutions' efficiency and effectiveness.

Many people feel that Knowledge Management (KM) is helpful, and although conceptual models have been offered (Velásquez & Lara, 2021; Ode & Ayavoo, 2020), KM is hard to operationalize. Higher education was one of the first industries to adopt knowledge management practices (Ode & Ayavoo, 2020). According to this study, the use of Knowledge Management (KM) has been increasing in recent years, particularly in institutions trying to gain competitive benefits in research rankings or the educational market (Abubakar et al., 2019). One of the most effective KM enablers in these organizations is a culture that values and encourages knowledge exchange (Mahdi et al., 2019). When it comes to the impact of KM on an organization's performance, there are a variety of viewpoints and findings (OP). Even while Israilidis et al. (2021) estimate that KM and OP might be linked via the lens of innovation produced by the procedures of knowledge management, Nisar et al. (2019) believe that KM methods have no direct impact on organizational performance (OP). The presence of incentives (for example, the ability to take time off to study or pay for conference fees) and a suitable technological infrastructure are also important facilitators of KM in higher education (Nisar et al., 2019).

Instead of just disseminating information to learners, academic institutions must serve as centers for learning. Even while actual studies on specific KM techniques are still rare, study on the issue emphasizes the necessity of knowledge sharing (KS), primarily to combine every person information that exists currently in schools but has not been confirmed for optimal efficiency (Al-Kurdi et al., 2020; Yanrong Gao 2022). According to Elrehail et al. (2018), KS at universities is an important process in knowledge management strategies. Still, it mostly depends on the school's organizational culture and requires senior management's direct support and engagement. The correct incentives for KS-positive behavior may be identified and promoted. The refueling of the KS process and creating a conducive climate for cooperation are all possible results of good KM. Researchers have shown that colleges no longer facilitate implicit knowledge transmission, at least not overtly, for a variety of technological and cultural reasons. This supports the prior results of Jiang and Xu (2020). At some colleges, administrators tend to be a barrier to the transmission of tacit knowledge even though their importance is mentioned in almost every study on the subject (Jiang & Xu, 2020). As a general principle, several pieces of research on Knowledge Management (KM) at academic institutions have shown that it is essential, should be publicly endorsed by management, and should focus on formal and informal factors linked to collaboration, openness, communication, and trust.

E-Learning Systems' Knowledge Management Practices

One may look at the link between e-learning and knowledge management through two different viewpoints: e-learning can offer a framework for KM development, and KM can help construct solid e-learning systems (ideally, sustainable and performant).

In Jeong and González-Gómez (2020), an e-learning system may be characterized as "an educational solution to convey information, assist learning, and enhance performance via building, employing, and managing relevant technology processes and resources." Products, data, and quality in use all play a part in a sustainable e-learning system's quality. (Jeong & González-Gómez, 2020). Taking advantage of the many new possibilities that online education offers, educational institutions can better understand how and where to focus their energies and enhance educational attainment in light of their mission and objectives. Learners and institutions benefit from e-learning-based KM. Interactive web technologies have had an enormous impact in the knowledge-based educational setting. Digital learning stresses the importance of learners'

self-management and the scheduled topic study. Individualized learning may be achieved with e-learning, but only if instructors redesign their teaching methods (Dinh et al., 2022). Better results in a technological framework may be accomplished via the early personal socialization of learners, which is align with previous findings by Journell (Dinh et al., 2022; Ben et al., 2022).

As previously said, trust and open communication are essential components of any successful knowledge-sharing effort. An effective internal environment for applying KM theories and methods and resources to turn implicit knowledge into explicit knowledge makes comprehension usage an important component in attaining organizational success in certain remote learning colleges, according to Akram et al. (2020). In contrast to past studies on KM performance at colleges generally, the success of online educational, academic institutions doesn't elicit exclusively from the technology quality implemented in e-learning systems; rather, it is primarily due to the existence of high intellectual capital (Akram et al., 2020; Zhao et al., 2022).

E-learning systems and Knowledge management systems seem to be incompatible. For instance, the lack of engagement, the absence of dynamic adaptability, and the material not being cognitively appropriate are examples of hurdles cited by Abumalloh et al. (2021). It is feasible to overcome KM and E-learning integration limitations through competency management or process integration (Abumalloh et al., 2021; Imanuddin Hasbi et al., 2022).

In the COVID-19 outbreak, when e-learning became required, many learners, instructors, and institutional management were unready for such a change, and these ideas are much more pertinent. Education providers might increase information retention in this case by using e-learning best practices for knowledge management (KM) methods. According to Cheng and Liu (2020), some of these best practices include the utilization of simple and clear online sessions, the use of different multimedia devices like gamification and online simulations, the use of portals that are useful for both learners and instructors, the collection of lessons learned, and encouraging students' cooperation and participation through stimulating teamwork and communication.

Inquiries on the Effects of Digitally Driven Student Development

The term "digitally-driven student transformation" refers to a broad range of changes in higher education students' attitudes, values, and

practices as a result of social and technological pressures. It represents the most significant changes in students' expectations and preferences about learning and teaching, either as a future problem (Krishnamurthy, 2020; Liu Hongwei, Supinda 2022) or at present, as a result of e-learning and Massive Open Online Courses (MOOCs)and the broader digitalization of education.

Students are considered school stakeholders, and knowing how they interact with educational processes is essential to any management approach. Student stakeholders in higher education have been studied by academics across many different aspects, including student beneficiaries of educational services, student partners, and students performing simulated stakeholders' roles, which is a method of involving learners. These techniques are significant for management tactics in higher education schools, notably for changing curriculum and instruction and involving learners in colleges communities. It's no surprise that today's college students prefer to learn using technology, and neither is the fact that they expect teachers to use more electronic tools in the classroom because they find these tools "very or incredibly useful" in their educational life, especially when conducting class studies and completing homework. According to their preferred learning method, learners are labeled as either visual or auditory. In general, adapting teaching to students' learning styles is a good idea, although others argue it is inefficient. Digital learning technology (DLT), like computers and multimedia, tends to be preferred by digital natives (those born after 2000). The usage of smartphones in the educational process is not view as a teaching material.

When analyzing students' learning preferences based on sex and educational level, very little data can be used to develop general management methods. Many prior studies on learners' learning preferences are outdated. Do not take into account modern digital preferences or are tailored to a single sector of activity, like health or medicine and mathematics. According to Matthews, learning styles fluctuate depending on the field of study, whereas Park et al. (2019) found that a student's gender influences their learning preferences.

There is a dearth of current research on how to best cater to the learning preferences of business students—using "the gender differences in learning style exposed by the attitudinal response to involvement in serious business games." According to Pasina et al. (2019), when assessing the particular four aspects proposed by Bajaj and Sharma (2018): global/sequential, verbal/visual, intuitive/sensing, and

reflective/active, students in statistics don't show any significant differences in their preferred methods of learning based on their gender. Garber et al. conclude that "female participants demonstrate themselves to be concrete experiencers (CE), visualizing themselves as students who are acknowledging, feeling, and receptive graspers of experience. Whereas male participants are abstract conceptualizers (AC), visualizing themselves as students who are logical, analytical, and present-oriented graspers of experience" (Shahriar, 2018).

A Qualitative Investigation of Research Gaps

E-learning, knowledge management at schools, the interaction between e-learning systems and knowledge management, and digitally driven learner transformation were all examined in our semi-systematic literature study. Findings of the research point to the need to examine e-learning systems' knowledge management methods and practices from the viewpoints of diverse stakeholders. Learners are an important stakeholder group that should consider their learning preferences and habits when developing a long-term knowledge management strategy for university-based e-learning systems. Studies such as the ones stated above show a need for further study into how business students like to educate in today's digitalized environment, especially from the viewpoints of gender and education level. A KM framework that might be utilized to assist the higher education schools’ strategies in the business studies sector may benefit from looking at these kinds of issues.

Three focus group discussions (FGDs) expert were held with 15 economics and business professors at a university, between February 25 and 27, 2020, in the context of the possible spread of the COVID-19 outbreak. Learners' e-learning preferences were studied using the FGD qualitative approach, which was utilized to verify some of the findings from the literature review. The following were the key points of discussion:

1. There has been a growing acceptance of e-advantages learning in the conventional educational system, or "hybridization."
2. Learners' e-learning preferences and the effectiveness of knowledge transmission are taken into consideration.
3. Experiential learning about the differences between various types of e-learning.

The findings of the FGDs were utilized to generate a study hypothesis based on the findings of the interviews. There is a definite movement toward more complex communication technology in business higher

education, even though literary precedents are a little more diverse than in other fields. Another major point was that, as was the case in earlier research, gender-related learning attitudes also impact preferences for e-learning. According to business educators, education degrees (bachelor's, Master's, postgraduate, and doctorate) seem to impact students' learning preferences considerably. However, varied learner profiles by training level (area of expertise, age, business practice, etc.) make the diversity of e-learning preferences possible, despite the lack of a relevant source.

**Hypothesis Development**

Findings from literature analysis and FGDs on business learners' learning patterns and their preferences for distance education solutions were used to develop these hypotheses.

H1: Learners' usage of the Internet for learning resources differs significantly by sexual identity.

- H1a: Internet-based educational resources are less popular among men.
- H1b: More women than males utilize online learning resources.

H2: Studying online was more common among bachelor's degree candidates than master's degree candidates.

H3: Regardless, of course, women value tangible resources more highly than men.

H4: Master's students appreciate concrete resources more than bachelor's learners.

Preliminary experiments carried out by the study team have yielded these theories, which do not appear in any prior literature. As a result of academic experience not previously documented in the literature but proved important for implementing suitable knowledge techniques in the current pandemic setting, the FGDs were created.

**Quantitative Study of E-learning Knowledge Management (KM) Strategies for Business Students and Internet Utilization:**

Understanding how students learn and utilize the Internet is essential to a successful transition from classroom instruction to social media platforms. As previously said, creating and sustaining an e-learning system may be expensive and pose several obstacles. Before the COVID-19 epidemic, many institutions were hesitant to employ electronic

learning on a big scale, and they were pushed to make a hasty shift to virtual distance education without preparation.

The scholars in Business and Economics at the institution were surveyed, and their preferences for virtual learning solutions were examined. The following queries were posed:

RQ1: In a conventional educational setting, what kinds of learning habits and practices do learners have?

RQ2: How frequently do learners utilize the Internet's resources over the course of their education?

RQ3: How do learners like to get their educational resources, in terms of paper or electronic?

RQ4: When it comes to the research mentioned above, are there any distinctions in gender or training levels?

**Methodology**

First, it's critical to understand how kids access and use the Internet in the classroom. In addition, it's critical to learn about their preferred methods of instruction and the instruments they use. As part of this effort, we carried out a survey of learners in economics and business to find out their preferences for online learning tools. While the hypotheses were being developed, a theoretical model of quantitative research (Figure 1) was produced that includes two segmentation criteria: (1) learning support materials and sexual identity are examined in this study, and (2) Training level disparities. A preliminary investigation was then conducted. The next phase was to conduct primary research to understand the preferences and views of learners regarding various teaching methods. A practical goal of this study was to utilize the study's findings to tailor distant education.

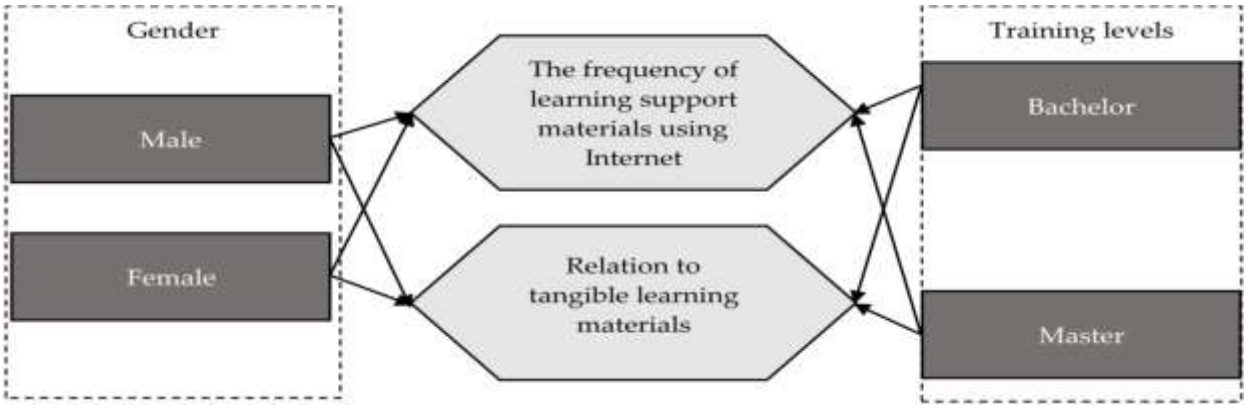


Figure 1. Quantitative research theoretical model.

We used Lime Survey's questionnaire editing software to create a web-based survey to collect information more quickly. Students' interactions with information technology, remote education and e-learning, and demographics were included in the four categories of inquiries. After that, it was put through its paces by a team of quality assurance professionals. They were able to contribute ideas and rectify grammatical and formal errors in the questionnaire's final form. Students mostly enrolled in business and economics bachelor's, and Master's programs received the survey through email.

The hypotheses were tested using both univariate and multivariate statistical approaches. The major features of the sample were gathered using descriptive statistics. Cross-tabulation correlation analysis using nominal scales used the coefficient. The Levene test was used to make sure that the population variances were unique. For heteroskedasticity, the Welch test was employed instead of the two-sample t-test. This approach investigates the identical null hypothesis and does not need a match of standard deviations for the null hypothesis to be tested.

Sample

The study comprised all of the college's 800 business and economics students who were currently enrolled. An email with the survey link was sent to all 800 learners, and 600 responded. A total of 485 replies were analyzed, of which 640 were finished and 120 were only partially finished, resulting in a total of 485 responses. Exactly as expected, the average response time came in at nine minutes. 2-8 March 2020 was the time frame for the survey Microsoft Excel 2013 and SPSS Statistics 21.0 were used to conduct the quantitative analysis.

The demographics relevant to the research are shown in Table 1. Analyzers might use this information to create segmentation criteria.

Given the findings of the frequency distributions analyzed, it can be said that the sample as a whole is fairly representative across sexes, educational attainment levels, and educational programs.

Internet usage for educational purposes was categorized into six tiers based on the frequency of use. The lower education degree was represented by bachelor's programs, while Master's programs represented the higher educational level. Participants had the option of selecting one of the following: (1) daily for at least three hours; (2) every day for at least one or two hours (3) three or more times each week (4) once or twice a month (5) once or twice a semester (6) not at all.

**Table 1.** The sample's attributes.

| **Segmentation Criterion** | **Subset** | **N** | **Subset** | **N** |
|---|---|---|---|---|
| Education Level (N = 640) | | | | |
| Doctoral program | 6 | 25 | 1 | 2 |
| Master's program | 115 | 218 | 12 | 15 |
| Bachelor's program | 528 | 635 | 62 | 60 |
| Postgraduate training | 18 | 45 | 2 | 3 |
| Higher education vocational training programs | 150 | 320 | 17 | 20 |
| Sex (N = 640) | | | | |
| Female | 483 | 800 | 73 | 65 |
| Male | 227 | 575 | 30 | 31 |
| Education Form (N = 485) | | | | |
| Part-time | 329 | 695 | 33 | 39 |
| Full-time | 625 | 785 | 63 | 58 |

Note: N=Total Population

**Results**

Assumptions were made based on the amount of schooling; hence the findings pertain to a subset of the total database. 625 undergraduates and 625 graduate students were included in this study's subgroup, which was chosen because the researchers wanted to study the differences between the two groups. The Crosstabs test was used to determine if the first and second hypotheses were valid. Likert scale variables were treated as interval variables for computing averages. Table 2 summarizes the findings of the investigation's testing. The frequency of learning support resources through the Internet was evaluated by sexual identity and educational attainment on an interval scale of reading of learning resources, performing computational activities, preparation of

submission/report, voice recording/taking notes and browsing for information.

This requirement for homogeneity of variance can only be satisfied when gender is used as a group variable during training; reading, taking notes, and voice recording do not meet this requirement. The Welch d-test t-values were used in these circumstances. According to the paired-sample t-test, the two groups average varies considerably in terms of completing computational problems ($t(645) = 2.645$, $p = 0.007$; $t(645) = 1.921$, $p = 0,049$) based on gender and educational level. Female students had a mean frequency of 3.47, whereas male students had a mean frequency of 3.21 (standard deviation = 1.073). There was an average frequency of 3.36 for bachelor's students and 3.60 for Master's students, respectively, based on their educational levels. According to Chi-square statistics, the correlation of the findings obtained was supported since the significance threshold was less than 0.05 percent. The use of a gray backdrop denotes importance.

**Table 2.** Analyzing the connections between different factors.

| | | **Reading of Learning Resources** | **Solving Computational Tasks** | **Preparation of Submissions/ Reports** | **Voice Recording/ Note Taking** | **Browsing Information** |
|---|---|---|---|---|---|---|
| Normal Parameters | Average | 2.90 | 3.39 | 3.06 | 4.15 | 2.70 |
| a,b | Deviation | 1.003 | 1.170 | 1.029 | 1.562 | 0.901 |
| Kolmogorov-Smirnov test | | 6.594 | 6.130 | 6,280 | 5.2776 | 7.289 |
| two-sided significance | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Levene's F-test (gender) | F value | 10.675 | 2.059 | 1.570 | 2.081 | 1.220 |
| | significance | 0.001 | 0.150 | 0.213 | 0.149 | 0.269 |
| t-test | t-value | −1.719 | −2.647 | −1.065 | −1.142 | −0.360 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | significance | 0.085 | 0.007 | 0.285 | 0.288 | 0.720 |
| Chi-squared test (gender) | | 0.078 | 4.560 | 0.454 | 1.395 | 0.374 |
| significance | | 0.780 | 0.032 | 0.501 | 0.235 | 0.541 |
| Levene's F-test (Education level) | F value | 0.00 | 0.115 | 3.216 | 3.899 | 1.219 |
| | significance | 0.826 | 0.735 | 0.073 | 0.049 | 0.270 |
| t-test | t-value | −0.939 | −1.923 | 0.669 | 0.543 | −0.719 |
| | significance | 0.350 | 0.049 | 0.501 | 0.584 | 0.472 |
| Chi-squared test (training level) | | 1.332 | 5.906 | 0.020 | 0.002 | 0.185 |
| significance | | 0.250 | 0.016 | 0.884 | 0.963 | 0.664 |

As a matter of simplicity, learning assistance activities were rescaled from interval to nominal scales. There were two sections, as shown in Table 3, based on the time factor:

- Weekly: at least three hours or more every day, at least one-two hour every day, at least twice a week;
- Less frequently: at least two-three every month, at least two three every six months, not at all.

T**able 3.** Calculation of task frequency distribution by sexual identity and education attainment.

| **Description** | **Computational Tasks** | | **Total** |
|---|---|---|---|
| | **Weekly** | **Less Frequently** | |
| | by sexual identity | | |
| Female | 249 | 186 | 435 |
| Male | 120 | 70 | 190 |
| SUM | 385 | 240 | 625 |
| Distribution | | | |
| Female (%) | 57 | 43 | 100 |
| Male (%) | 63 | 37 | 100 |
| SUM | 58 | 42 | 100 |
| % Within computational tasks | | | |

| | | | |
|---|---|---|---|
| Female (%) | 64 | 70 | 67 |
| Male (%) | 36 | 30 | 33 |
| sum | 100 | 100 | 100 |
| Φ ratio | | 0,083 (0,032) | |
| | by education degree | | |
| Master | 53 | 43 | 96 |
| Bachelor | 345 | 184 | 529 |
| SUM | 398 | 227 | 625 |
| Distribution | | | |
| Master (%) | 50 | 50 | 100 |
| Bachelor (%) | 62 | 38 | 100 |
| SUM | 60 | 40 | 100 |
| % Within computational tasks | | | |
| Master (%) | 13 | 21 | 17 |
| Bachelor (%) | 87 | 79 | 83 |
| sum | 100 | 100 | 100 |
| Φ ratio | | 0.083 (0.032) | |

Gender and education level seems to have a weakly significant link while doing computational tasks through the Internet, according to Table 3's indication. Comparing males and females, men were found to use the Internet more often (65 percent of the time) to complete computations than did women (57 percent). At every level of schooling, this disparity may be examined. 62 percent of bachelor's learners used the Internet at least once a week to do computational activities, whereas just 50 percent of Master's students did so. The significance level of the Chi-square indicated a correlation between the two parameters. Both examples had a p smaller than 0,005; hence, a correlation existed.

We seek to learn about learners' preferences for practical courses (seminars) and lessons in general among t

hose students. We mapped learners' reading and learning habits prior to implementing pandemic limitations. On a scale of one to six, the participants were asked to rate four statements:

- I love photocopies and textbooks since I can carry them around with me whenever I need to study.
- Although I can study from my notes, they are insufficient for each test.
- However, it is difficult for me to study from electronic learning resources.
- Multimedia resources are especially useful; I learn more effectively when the resources include illustrations and are taken through in practice.

To summarize the findings in relation to the hypotheses, see Table 4. (Hypotheses 3 and 4). To begin, the statements' frequencies were analyzed. The most prevalent answer categories per sentence were highlighted with a gray backdrop to emphasize the differences between the six-point scale and the three-unit format.

For multimedia resources, photocopies, and textbooks (Rmultimedia resources=0.830; Rbooks, photocopies=0.668), we detect a statistically (frequently) substantial association (Spearman's rank correlation) among the lectures and seminars (Rmultimedia resources=0.830).

For students interested in practical education, both activities are more relevant. Segmentation criteria included gender and education level. A two-sided t-test was utilized to investigate differences statistically.

The results of the t-test are shown in the table below. We used Welch's d-test t-values when the standard deviation homogeneity was not met. When the t-test revealed a significant difference between the classifications of the group variable, the average deviation was shown. According to a recent study, these claims may be made if the findings are categorized as segmentation factors: Photocopies and textbooks are favored by ladies for lectures and seminars. In both circumstances, the average gap between women and men is almost identical in value (0.6). Learning from one's notes yields outcomes that are quite similar to the one stated above. Women are more likely than males to take and memorize their notes in this situation, although the average variance is lower when photocopies and books are used. The results in this region are consistent with those in the preceding section. Most men (averageseminar=2.66; averagelecture=2.53) can easily use electronic learning resources. As a result, women have a harder time learning (average seminar = 3.43; average lecture = 3.27), as they prefer learning via the use of physical things. Master's and bachelor's degree students had different preferences for reading books and making copies (average deviation = 0.572). It is only in seminars (practical classes) that this finding is statistically valid (average bachelor value = 4.44; average master value = 3.90). While master's learners (mean value seminar = 2.85; mean value lecture = 2.60) had an easier time navigating electronic learning resources, bachelor's students (average value seminar = 3.27; average value lecture = 3.13) have greater difficulty regardless of course type.

**Table 4.** The outcomes of learning habits are segmented.

| | | | **Seminar** | | | | **Lecture** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **Statement** | | | | | |

| | **Average Deviation** | **t-Test** | **1** | **2** | **3** | | **1** | **2** | **3** | **t-Test** | **Average Deviation** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gender | -0.732 | -5.422 | | | | I love photocopies and textbooks since I can carry them around with me whenever I need to study. | | | | -5.541 | |
| | | 0.000 | 105 | 185 | 335 | | 151 | 195 | 279 | 0.000 | −0782 |
| Education degree | 0.573 | 3.469 | 17% | 30% | 53% | | 24 % | 31 % | 45 % | 1.590 | |
| | | 0.001 | | | | | | | | 0.113 | − |
| Gender | -0.434 | -3.775 | | | | Although I can study from my notes, they are insufficient for each test. | | | | -3.137 | |
| | | 0.000 | 75 | 220 | 330 | | 78 | 241 | 306 | 0.002 | −0.359 |
| Education degree | − | -1.330 | 12% | 35% | 53% | | 12 % | 39 % | 49 % | -0.433 | |
| | | 0.192 | | | | | | | | 0.666 | − |
| Gender | -0.769 | -5.607 | | | | However, it is difficult for me to study from electronic | | | | -5.384 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | learning resources. | | | | | |
| | | 0.000 | 250 | 190 | 185 | | 285 | 182 | 158 | 0.000 | −0.717 |
| Education degree | 0.450 | 2.762 | 40% | 30% | 30% | | 46 % | 29 % | 25 % | 3.203 | |
| | | 0.005 | | | | | | | | 0.002 | 0.502 |
| Gender | − | 1.210 | | | | Multimedia resources are especially useful; I learn more effectively when the resources include illustrations and are taken through in practice. | | | | 1.670 | |
| | | 0.229 | 35 | 145 | 445 | | 45 | 190 | 390 | 0.098 | − |
| Education degree | − | -0.325 | 6% | 23% | 71% | | 7% | 30 % | 63 % | -1.023 | |
| | | 0.744 | | | | | | | | 0.306 | − |

Empirical Findings

The first hypothesis that males use online learning assistance resources more often than women was shown to be incorrect or only partly true. The only variation that might be considered substantial was in the computing tasks. As predicted, undergraduates deal with computational activities every week, but master's learners are less likely to utilize the Internet to do this work. In the end, we can corroborate our third hypothesis, which was that women suggest taking notes from books and

photocopies rather than digital versions. Only in the case of photocopies and textbooks did there seem to be a disparity in the students' levels of education. The course type's autonomy was not upheld in this instance. The fourth hypothesis was somewhat verified in light of the data mentioned above. Figure 2 summarizes the findings.

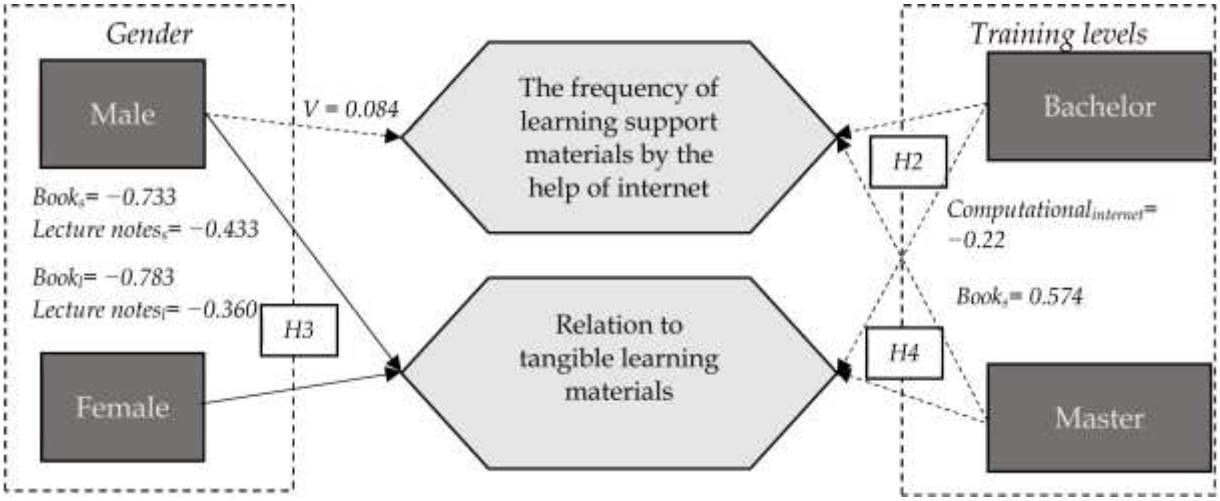


Figure 2. The findings of the quantitative investigation.

**Discussion**

The COVID-19 pandemic has accelerated the digital revolution of learning. It is imperative that the lessons acquired from 2020's quick adaptation to the reality of mass e-learning be included in any subsequent programs. Developing KM frameworks in which contemporary e-learning difficulties may be included is an effective response method. According to Velásquez and Lara (2021), campuses' KM maturity is a factor in this endeavor. Different rules and developments implemented on three levels: structural, relational, and human capital. Learner relationships were particularly hard to impact by the COVID-19 epidemic (Velásquez and Lara, 2021). However, it has revolutionized university teaching techniques, so learners' learning habits and preferences must be explored more and included in management plans in the future.

For communication and pleasure, university students these days depend on the Internet a lot; they've lately shifted their focus to social media for data gathering. Research carried out by Purvis et al. (2020) found that online video was by far the most popular type of social media for both classroom instruction and supplemental materials uploaded outside of

class for students' access. According to Moghavvemi et al. (2018), YouTube may be a useful tool for academic learning provided it has appropriate information that promotes critical thinking growth (i.e., ensures that students can critically assess particular resources under the direction of instructors). Epps et al. (2021) found that YouTube use had a beneficial effect on learners' learning satisfaction and outcomes, which they attributed in part to students' preference for watching brief videos rather than focusing on context. We found the same thing in our quantitative study.

Problems are more complicated on YouTube than on other social media since they are extensively utilized as teaching and learning resources. There are some exceptions to this rule, such as students who use Facebook solely for personal communication and entertainment (Instagram, Tik-Tok) and do not feel secure sharing information in Facebook groups (Awidi et al., 2019; Rommel Al Ali & Fathi Abunasser 2022). Students also have mixed feelings about the efficiency of instructor-managed Facebook course pages.

To fill a gap in the literature, the main study reported in this article provides fresh insights. Sharing practical homework with learners weekly, rather than emailing or uploading activities and learning resources many times per week, is recommended based on actual quantitative data. Students will feel overwhelmed if more resources are available more often, whether once a day or many times a week. However, too much information regarding educational resources might be perplexing. For Master's degree students, the Internet is less likely to be used to find educational resources. Due to their more advanced training and past education. When teaching bachelor's students, extra learning aids that can be shared both within and outside the educational platform via direct connections should be utilized.

Our third hypothesis that women favor tactile resources regardless of the course was validated by the results of the second part of the empirical investigation. This is a brand-new angle in the literature since earlier research tended to downplay the importance of subtle variations between men and women. Some researchers have shown that students' grades are directly influenced by their gender in many ways, such as how they approach inventory or how they like to visualize data (Aguilera-Hermida, 2020).

To some extent, Hypothesis 4 may be supported, but only because bachelor's students differed significantly from Master's students' preference for books and photocopies (tangibles). In addition, this

assertion is only true for seminars; therefore, it lacks general validity (practical classes). There's also a correlation between views toward electronic items and acceptance of the concept. However, regardless of the course style, Master's students have less trouble handling such subjects than undergraduates. Tania Briones Linares's prior studies on college students' preferences that may predict and define learning methods, for example, have been enriched by this research (2020). However, these findings are in line with previous research that has shown the need for care when evaluating alterations in students' learning preferences over time (Karagiannopoulou et al., 2020; Zhang Ying & Norhiza Binti Ismail 2022).

**E-Learning and Blended Learning Knowledge Management Strategies should include students' preferences and habits for learning.**

University KM efforts in the post-COVID-19 era must take into account learners' interests and learning patterns. Our quantitative research and insights from earlier research may be incorporated into these elements:

- Teaching must use multimedia elements, mostly video but also audio, in light of learners' preference for YouTube as their primary social media platform for research and learning;
- In light of the differences in preferences, we discovered between male and female learners, as well as between master's and bachelor's degree holders, a combination of physical and digital materials that are both suggested to and requested by students would be ideal;
- Instructional updates for instructors on how to utilize web-based educational platforms, organize courses, evaluate students, and communicate with them;
- There should be a regular publishing and uploading schedule for practical evaluations, preferably every week;
- Teacher education on how to address learners' privacy issues while promoting connection and participation in virtual classrooms.

The COVID-19 epidemic underscored the need for institutions' adoption of knowledge management as a cornerstone for competitive advantage. Colleges might utilize the elements mentioned above as ideas, suggestions, or important stages in creating or adjusting knowledge management processes as part of KM techniques, depending on the cultures of their organizations and the maturity levels of KM. However, using Knowledge Administration (KM) by schools' management might have limited results if only employed to keep up with technological

advances. According to Cosenz and Noto (2018), dynamic management research shows the significance of a flexible managerial attitude while developing strategies and putting procedures in place. It is thus possible that the objective of effective KM at colleges as a source of performance may be ensured by taking into account all factors (investments in technology and investments in human capital).

**Conclusions, Limitations, and Recommendations**

In recent years, the COVID-19 epidemic necessitated a rapid shift from face-to-face to digital learning in higher education. It took a remarkable display of collaboration among students and instructors to overcome this problem by working together to find the best answers. For the first time, colleges had to deal with the practicality of knowledge management. However, effective Knowledge Management (KM) relies on corporate cultures and procedures that enhance employees' talents, capacities, and incentives. This study examines the lessons that colleges must take away from the fast and widespread shift from traditional education to virtual distance learning. Therefore, we examined the entire link between university knowledge management and e-learning to uncover useful insights that may put learners' preferences and habits into a managerial framework. When combined with our findings on business learners' prior learning, our quantitative research provides instructors and educational management with useful information for the future. If the present epidemic continues for a long time, additional higher education duties may need to be changed. In general, it is suggested that the format of the provided resources be selected in line with the educational attainment and the sex identity makeup of the class respondents. For bachelor's learners (the majority of whom are female), it's a good idea to assemble materials that include, at the very least, seminars with a continuous, printed text (practical lessons). Female pupils may also benefit from using audio resources. Because they can take notes independently, these students can better retain information.

It's important to remember that this study has certain limitations, just like any other. As a result, learners' views on classical education were reflected in their responses to quantitative research completed nearly at the beginning of the European shutdown. Blended learning will likely be employed more often after the COVID-19 epidemic; this constraint is also an opportunity. Another problem is that only learners from one institution were included in the sample. Future research should look at possible cultural impacts on their learning practices.

Research in knowledge management studies is bolstered here by focusing on the lessons colleges must take away from the COVID-19 epidemic when implementing e-learning systems across the board. This study examines the interaction between e-learning and knowledge management in the context of colleges, focusing on the top management role and the limitations of knowledge management maturity. The report focuses on three important areas of research. First and foremost, it contributes to previously conducted studies on business students' learning preferences and practices in light of the Internet's effect. Consequently, our conclusions are valuable and applicable, depending on educational level, the gender makeup of learner's cohorts, the courses that students are enrolled in, and their sexual identity. It's also possible to utilize our results to better academic research and to apply tangible KM initiatives in universities after the COVID-19 epidemic in terms of students' views on e-learning and, more broadly, their learning habits. Last but not least, this study paints a comprehensive picture of university knowledge management in relation to electronic learning and incorporates the results into useful managerial insights that take learners' learning preferences into account.

**References**

Abubakar, A. M., Elrehail, H., Alatailat, M. A., & Elçi, A. (2019). Knowledge management, decision-making style and organizational performance. Journal of Innovation & Knowledge, 4(2), 104-114. https://doi.org/10.1016/j.jik.2017.07.003

Abumalloh, R. A., Asadi, S., Nilashi, M., Minaei-Bidgoli, B., Nayer, F. K., Samad, S., ... & Ibrahim, O. (2021). The impact of coronavirus pandemic (COVID-19) on education: The role of virtual and remote laboratories in education. Technology in Society, 67, 101728. https://doi.org/10.1016/j.techsoc.2021.101728

Aguilera-Hermida, A. P. (2020). College students' use and acceptance of emergency online learning due to COVID-19. International Journal of Educational Research Open, 1, 100011. https://doi.org/10.1016/j.ijedro.2020.100011

Aini, Q., Budiarto, M., Putra, P. O. H., & Rahardja, U. (2020). Exploring e-learning challenges during the global COVID-19 pandemic: A review. Jurnal Sistem Informasi, 16(2), 57-65. https://doi.org/10.21609/jsi.v16i2.1011

Akram, T., Lei, S., Haider, M. J., & Hussain, S. T. (2020). The impact of organizational justice on employee innovative work behavior:

Mediating role of knowledge sharing. Journal of Innovation & Knowledge, 5(2), 117-129. https://doi.org/10.1016/j.jik.2019.10.001

Al Mulhem, A. (2020). Investigating the effects of quality factors and organizational factors on university students' satisfaction of e-learning system quality. Cogent Education, 7(1), 1787004. https://doi.org/10.1080/2331186X.2020.1787004

Alhabeeb, A., & Rowley, J. (2018). E-learning critical success factors: Comparing perspectives from academic staff and students. Computers & Education, 127, 1-12. https://doi.org/10.1016/j.compedu.2018.08.007

Al-Kurdi, O. F., El-Haddadeh, R., & Eldabi, T. (2020). The role of organisational climate in managing knowledge sharing among academics in higher education. International Journal of Information Management, 50, 217-227. https://doi.org/10.1016/j.ijinfomgt.2019.05.018

Alqudah, N. M., Jammal, H. M., Saleh, O., Khader, Y., Obeidat, N., & Alqudah, J. (2020). Perception and experience of academic Jordanian ophthalmologists with E-Learning for undergraduate course during the COVID-19 pandemic. Annals of Medicine and Surgery, 59, 44-47. https://doi.org/10.1016/j.amsu.2020.09.014

Anton, C., & Shikov, A. (2018). The method of personalized corporate e-learning based on personal traits of employees. Procedia computer science, 136, 511-521. https://doi.org/10.1016/j.procs.2018.08.253

Antunes, H. D. J. G., & Pinheiro, P. G. (2020). Linking knowledge management, organizational learning and memory. Journal of Innovation & Knowledge, 5(2), 140-149. https://doi.org/10.1016/j.jik.2019.04.002

Awidi, I. T., Paynter, M., & Vujosevic, T. (2019). Facebook group in the learning design of a higher education course: An analysis of factors influencing positive learning experience for students. Computers & Education, 129, 106-121. https://doi.org/10.1016/j.compedu.2018.10.018

Azubuike, O. B., Adegboye, O., & Quadri, H. (2021). Who gets to learn in a pandemic? Exploring the digital divide in remote learning during the COVID-19 pandemic in Nigeria. International Journal of Educational Research Open, 2, 100022. https://doi.org/10.1016/j.ijedro.2020.100022

Bajaj, R., & Sharma, V. (2018). Smart Education with artificial intelligence based determination of learning styles. Procedia computer science, 132, 834-842. https://doi.org/10.1016/j.procs.2018.05.095

Ben Youssef, A., Dahmani, M., & Ragni, L. (2022). ICT use, digital skills and students' academic performance: exploring the digital divide. Information, 13(3), 129. https://doi.org/10.3390/info13030129

Brem, A., Viardot, E., & Nylund, P. A. (2021). Implications of the coronavirus (COVID-19) outbreak for innovation: Which technologies will improve our lives?. Technological forecasting and social change, 163, 120451. https://doi.org/10.1016/j.techfore.2020.120451

Cheng, S. O., & Liu, A. (2020). Using online medical education beyond the COVID-19 pandemic–A commentary on "The coronavirus (COVID-19) pandemic: Adaptations in medical education ". International Journal of Surgery (London, England), 84, 159. https://dx.doi.org/10.1016%2Fj.ijsu.2020.11.010

Cosenz, F., & Noto, G. (2018). A dynamic business modelling approach to design and experiment new business venture strategies. Long Range Planning, 51(1), 127-140. https://doi.org/10.1016/j.lrp.2017.07.001

Dinh, T. C., Nguyen, P. B. N., Nguyen, T. T. T., Ngo, X. M. T., & Le Nguyen, A. T. (2022). The Predictors of Students' Satisfaction and Academic Achievements in Online Learning Environment in Higher Education. Vietnam Journal of Education, 6(1), 80-92. https://doi.org/10.52296/vje.2022.132

Duan, Y., Edwards, J. S., & Dwivedi, Y. K. (2019). Artificial intelligence for decision making in the era of Big Data–evolution, challenges and research agenda. International Journal of Information Management, 48, 63-71. https://doi.org/10.1016/j.ijinfomgt.2019.01.021

Elrehail, H., Emeagwali, O. L., Alsaad, A., & Alzghoul, A. (2018). The impact of transformational and authentic leadership on innovation in higher education: The contingent role of knowledge sharing. Telematics and Informatics, 35(1), 55-67.

Epps, B. S., Luo, T., & Muljana, P. S. (2021). Lights, Camera, Activity! A Systematic Review of Research on Learner-Generated Videos. Journal of Information Technology Education: Research, 20. https://doi.org/10.28945/4874

Farhan, W., Razmak, J., Demers, S., & Laflamme, S. (2019). E-learning systems versus instructional communication tools: Developing and testing a new e-learning user interface from the perspectives of teachers and students. Technology in Society, 59, 101192. https://doi.org/10.1016/j.techsoc.2019.101192

García-Peñalvo, F. J., Fidalgo-Blanco, Á., & Sein-Echaluce, M. L. (2018). An adaptive hybrid MOOC model: Disrupting the MOOC concept in higher education. Telematics and Informatics, 35(4), 1018-1030. https://doi.org/10.1016/j.tele.2017.09.012

Iivari, N., Sharma, S., & Ventä-Olkkonen, L. (2020). Digital transformation of everyday life–How COVID-19 pandemic transformed the basic education of the young generation and why information management

research should care?. International Journal of Information Management, 55, 102183. https://doi.org/10.1016/j.ijinfomgt.2020.102183

Imanuddin Hasbi, Mahir Pradana, Dian Gita Utam (2022). Entrepreneurial Educationas Antecedent of Indonesian Private University Students' Entrepreneurial Intention. Educational Administration: Theory and Practice2022, Volume 28, Issue 3, pp:72-82.

Israilidis, J., Odusanya, K., & Mazhar, M. U. (2021). Exploring knowledge management perspectives in smart city research: A review and future research agenda. International Journal of Information Management, 56, 101989. https://doi.org/10.1016/j.ijinfomgt.2019.07.015

Jeong, J. S., & González-Gómez, D. (2020). Assessment of sustainability science education criteria in online-learning through fuzzy-operational and multi-decision analysis and professional survey. Heliyon, 6(8), e04706. https://doi.org/10.1016/j.heliyon.2020.e04706

Jiang, G., & Xu, Y. (2020). Tacit knowledge sharing in IT R&D teams: nonlinear evolutionary theoretical perspective. Information & Management, 57(4), 103211. https://doi.org/10.1016/j.im.2019.103211

Karagiannopoulou, E., Milienos, F. S., Kamtsios, S., & Rentzios, C. (2020). Do defence styles and approaches to learning 'fit together'in students' profiles? Differences between years of study. Educational Psychology, 40(5), 570-591. https://doi.org/10.1080/01443410.2019.1600661

Krishnamurthy, S. (2020). The future of business education: A commentary in the shadow of the Covid-19 pandemic. Journal of business research, 117, 1-5. https://doi.org/10.1016/j.jbusres.2020.05.034

Lau, K. H., Lam, T., Kam, B. H., Nkhoma, M., Richardson, J., & Thomas, S. (2018). The role of textbook learning resources in e-learning: A taxonomic study. Computers & Education, 118, 10-24. https://doi.org/10.1016/j.compedu.2017.11.005

Leal Filho, W., Raath, S., Lazzarini, B., Vargas, V. R., de Souza, L., Anholon, R., ... & Orlovic, V. L. (2018). The role of transformation in learning and education for sustainability. Journal of cleaner production, 199, 286-295. https://doi.org/10.1016/j.jclepro.2018.07.017

Liu Hongwei, Supinda (2022). Effect of Meta-cognitive Listening Teaching Instruction and Awareness on Chinese High School Students. Educational Administration: Theory and Practice 2022, Volume28, Issue, pp:51-59.

Mahdi, O. R., Nassar, I. A., & Almsafir, M. K. (2019). Knowledge management processes and sustainable competitive advantage: An empirical

examination in private universities. Journal of Business Research, 94, 320-334. https://doi.org/10.1016/j.jbusres.2018.02.013

Mardani, A., Nikoosokhan, S., Moradi, M., & Doustar, M. (2018). The relationship between knowledge management and innovation performance. The Journal of High Technology Management Research, 29(1), 12-26. https://doi.org/10.1016/j.hitech.2018.04.002

Mashaqi, E., Al-Hajri, S., Alshurideh, M., & Al Kurdi, B. (2020). The impact of E-Service quality, E-Recovery services on E-Loyalty in online shopping: theoretical foundation And qualitative proof. PalArch's journal of archaeology of Egypt/Egyptology, 17(10), 2291-2316. https://archives.palarch.nl/index.php/jae/article/view/5005

Moghavvemi, S., Sulaiman, A., Jaafar, N. I., & Kasem, N. (2018). Social media as a complementary learning tool for teaching and learning: The case of youtube. The International Journal of Management Education, 16(1), 37-42. https://doi.org/10.1016/j.ijme.2017.12.001

Nisar, T. M., Prabhakar, G., & Strakova, L. (2019). Social media information benefits, knowledge management and smart organizations. Journal of Business Research, 94, 264-272. https://doi.org/10.1016/j.jbusres.2018.05.005

Ode, E., & Ayavoo, R. (2020). The mediating role of knowledge application in the relationship between knowledge management practices and firm innovation. Journal of Innovation & Knowledge, 5(3), 210-218. https://doi.org/10.1016/j.jik.2019.08.002

Park, C., Kim, D. G., Cho, S., & Han, H. J. (2019). Adoption of multimedia technology for learning and gender difference. Computers in Human Behavior, 92, 288-296. https://doi.org/10.1016/j.chb.2018.11.029

Pasina, I., Bayram, G., Labib, W., Abdelhadi, A., & Nurunnabi, M. (2019). Clustering students into groups according to their learning style. MethodsX, 6, 2189-2197. https://doi.org/10.1016/j.mex.2019.09.026

Purvis, A. J., Rodger, H. M., & Beckingham, S. (2020). Experiences and perspectives of social media in learning and teaching in higher education. International Journal of Educational Research Open, 1, 100018. https://doi.org/10.1016/j.ijedro.2020.100018

Rajhans, V., Memon, U., Patil, V., & Goyal, A. (2020). Impact of COVID-19 on academic activities and way forward in Indian Optometry. Journal of optometry, 13(4), 216-226. https://doi.org/10.1016/j.optom.2020.06.002

Rommel Al Ali, Fathi Abunasser (2022). Can the Leadership Capabilities of Gifted Students be Measured? Constructing a Scale According to Rasch

Model. Educational Administration: Theory and Practice 2022, Volume 28, Issue 3, pp:109-126.

Saif, M. R. (2020). Measuring the Organizational Performance in the Government Departments of Dubai Using the Knowledge Management Process. European Journal of Social Science Education and Research, 7(1), 33-40. https://doi.org/10.26417/ejser.v7i1.p33-40

Santoro, G., Vrontis, D., Thrassou, A., & Dezi, L. (2018). The Internet of Things: Building a knowledge management system for open innovation and knowledge management capacity. Technological forecasting and social change, 136, 347-354. https://doi.org/10.1016/j.jik.2017.07.003

Shahriar, A. Z. M. (2018). Gender differences in entrepreneurial propensity: Evidence from matrilineal and patriarchal societies. Journal of Business Venturing, 33(6), 762-779. https://doi.org/10.1016/j.compedu.2018.07.014

Tania Briones Linares, T. (2020). ESTILOS DE APRENDIZAJE Y LOS NIVELES DEL RENDIMIENTO ACADÉMICO EN LA CAPACIDAD DEL ESTUDIANTE UNIVERSITARIO, EN UNA UNIVERSIDAD PERUANA EN LIMA–2019. http://repositorio.uwiener.edu.pe/handle/123456789/3990

Velásquez, R. M. A., & Lara, J. V. M. (2021). Knowledge management in two universities before and during the COVID-19 effect in Peru. Technology in Society, 64, 101479. https://doi.org/10.1016/j.techsoc.2020.101479

Velásquez, R. M. A., & Lara, J. V. M. (2021). Knowledge management in two universities before and during the COVID-19 effect in Peru. Technology in Society, 64, 101479. https://doi.org/10.1016/j.techsoc.2020.101479

Yanrong Gao (2022). The Role of Russian Spatial Preposition Structure in Russian Language Teaching. Educational Administration: Theory and Practice 2022, Volume 28, Issue3, pp:60-71.

Yawson, D. E., & Yamoah, F. A. (2020). Understanding satisfaction essentials of E-learning in higher education: A multi-generational cohort perspective. Heliyon, 6(11), e05519. https://doi.org/10.1016/j.heliyon.2020.e05519

Yuming Xu, Jianhua Sun, Kanakarn Phanniphong (2022). Research on Teaching Resource Reform of Innovation and Entrepreneurship Education for Business Administration Specialty. Educational Administration: Theory and Practice 2022, Volume28, Issue3, pp:83-96.

Zhang Ying, Norhiza Binti Ismail (2022). The Effectiveness of Digital Game Playing on Vocabulary Learning for Chinese EFL Students Educational Administration: Theory and Practice 2022, Volume 28, Issue 3, pp:127-141.

Zhao, L., Cao, C., Li, Y., & Li, Y. (2022). Determinants of the digital outcome divide in E-learning between rural and urban students: Empirical

evidence from the COVID-19 pandemic based on capital theory. Computers in Human Behavior, 130, 107177. https://doi.org/10.1016/j.chb.2021.107177