Flexible Learning in Nursing in the Philippines as a Response to the Restrictions of the COVID-19 Pandemic: An Educational Case Report

Arnold B. Peralta, MHPEd, MAN, RN, Aprille C. Banayat, MAN, RN,
Maria Angela A. Mabale, MAN, RN and Kenny-lynn B. Baccay, MAN, RN

College of Nursing, University of the Philippines Manila

ABSTRACT

The COVID-19 pandemic, coupled with societal and technological changes around the globe, demanded adaptations to nursing education. This educational case report is an idiographic narrative of an institution's experience of shifting to flexible learning in nursing education in the Philippines during the COVID-19 pandemic.

Various subjects, involving foundation, intervention, and intensive nursing courses, were implemented in flexible learning modes during the Academic Year 2020 to 2021. This case report identified how curricular integration and curricular redesign were carried out to ensure the achievement of BSN Program Outcomes. Faculty development on flexible learning was implemented with training outcomes to include the application of key concepts and instructional design principles toward flexible learning. Training outcomes were evaluated through embedded activities on course package development by the faculty participants. This case report also identified various teaching-learning strategies, and how they addressed emerging issues, including differences in technological competence and accessibility.

The report highlighted how the college transitioned to flexible learning through curriculum integration and course redesign which has been effective and efficient in the achievement of educational outcomes. Appropriate training and guidance of the faculty to enable them to integrate and redesign courses, and address emerging issues and challenges, could help in the transition to flexible learning.

Flexible learning is an effective pedagogical approach to implementing nursing education. Timely implementation of measures must be taken to ensure relevant and appropriate curricular integration and redesign of courses, and consequently, the nursing program.

Keywords: flexible learning, nursing education, nursing curriculum, educational case report

INTRODUCTION

Higher education systems continue to evolve in response to societal and technological changes. An example of this evolution in nursing education is the merging of traditional face-to-face learning systems with educational and communication technology, creating new blended methods to deliver nursing education curricula.[1,2] Flexible learning eliminates the problem of geographical proximity, leveraging technology to provide an alternative enrollment and content delivery option for students who do not live close to a parent institution. Benefits to institutions with strong flexible learning courses and programs include the ability to meet workforce demands, increased student engagement, enhanced competitiveness with other programs, and greater diversity in the student population.[3,4] Active learning, technological

barriers, support, and communication were identified as key themes in flexible learning in nursing education.[5]

In addition, educational institutions needed to adapt to the restrictions and changes brought about by the COVID-19 pandemic. Notably, the pandemic changed the way higher education curricula, including nursing education, are delivered and consequently, how students learn. Processes and learnings from these distinctive phenomena are vital to be reported as a reference to future similar events. Hence, this educational case report is an idiographic narrative of the experience of shifting to flexible learning in nursing education in the Philippines. It aims to describe the educational intervention and initiatives of the UP College of Nursing (UPCN) in the Academic Year (AY) 2020-2021, in transitioning to flexible learning during the COVID-19 pandemic.

The rapidly evolving world of technology and communication drives the restructuring in delivering a nursing curriculum, and what comes with this is the diversification of both learning and practice approaches.[6] Flexible learning, when delivered purposefully, can positively influence, and impact student achievement. Several studies determined that student satisfaction is highly associated with students' dropout rates, motivation, and determination to completion and success rates.[7-9] A meta-analysis also determined that health sciences students' satisfaction is higher in distance education environments than in face-to-face classrooms.[10]

Despite these positive effects, some studies also identified some challenges with flexible learning. Faculty and students alike might have difficulties in technological navigation, academic relationship changes, role stress and strain, and resilience.[11] Some students also thought that online learning is ineffective in acquiring clinical and technical skills.[12] In a global survey of higher education students during the pandemic, an increased workload was also reported as materials were being uploaded to be consumed in the students' own time, apart from having synchronous classes to mimic traditional learning.[13] The pedagogical transition to distance education also reduced the possibility of students' social interactions in their learning process.[14] These experiences could reduce students' motivation to learn. Notably, a separate review suggested measures to address the challenges in flexible learning, which include providing adequate resources, monitoring of plagiarism, offering technical support, and revising the curriculum.[15]

Flexible learning in this paper is defined as a pedagogical approach allowing flexibility of time, place, and audience, including the use of technology, based on the availability of devices, internet connectivity, and digital literacy/approaches.[16] It is a learner-centered approach to education and training that expands choices on what, when, where, and how people learn; and covers a range of delivery modes, including distance education, mixed-mode delivery, e-learning, online learning, self-paced, and self-directed learning.[17,18] Moreover, flexible learning allows institutions to reduce course delivery costs and build program capacity by enhancing student engagement regionally, nationally, and internationally. Even before the pandemic, the UPCN had been exploring means to deliver classes despite work suspensions, pushing for a more student-centered approach by expediting the paradigm shift to lifelong learning.

The pandemic has fast-tracked the transition to flexible learning. Restrictions from the Department of Health and the Philippine Commission on Higher Education (CHED) hastened this shift. CHED is an independent agency that has the power to formulate and recommend development plans, policies, and programs on higher education; and set minimum standards for programs and institutions of higher learning.[19] During the COVID-19 pandemic, CHED released advisories to higher education institutions to utilize flexible learning and alternative modes of delivery. Given these premises, the need to redesign courses and equip the faculty with competencies in such curricular shift arose.

Curricular integration is one of the activities highlighted in the shift to flexible learning. Integration focuses on making connections between theories and real-life situations. The BSN curriculum follows a curricular integration framework wherein major nursing concepts serve as the basis for integration. The framework describes how the following is integrated into the curriculum as the student progresses from one course to another: (1) Roles of the nurse, (2) Concepts of health and illness, (3) Types of clients, (4) Goals of care, (5) Levels of prevention, and (6) Nursing process. The integration framework helped in redesigning courses in consideration of restrictions due to the COVID-19 pandemic.

In redesigning, the use of technology played a significant role on how the courses will be delivered. During this transition, the use of the technological, pedagogical, and content knowledge (TPACK) framework helped the faculty understand and apply this to their courses. This framework demonstrates the dynamic interaction of the three forms of knowledge: content, pedagogy, and technology.[20] The use of the framework made the faculty recognize the relationship among these dynamic components to facilitate the integration of technology in the pedagogy given any topic in the program.

CASE PRESENTATION

This case report describes the educational intervention and initiatives of the UP College of Nursing in transitioning to flexible learning during the COVID-19 pandemic (AY 2020-2021) through an idiographic narrative. It aims to examine and understand the different approaches used in the transition to flexible learning. This educational case report is not to be confused with clinical case reports that discuss the medical condition/management of individuals or groups.

Flexible learning is an important teaching-learning approach in response to the needs during the COVID-19 pandemic since it is not bound by time and distance, and it makes use of mixed-mode delivery with self-paced and self-directed learning. Hence, a training course was designed to equip the faculty in designing flexible learning in nursing.

The training aimed for the participants to develop and share their output that they could use for their own classes. The primary output was a nursing course package showcasing a course guide, study guide, activity guide, and assessment guide. Training objectives for participants were the following: to be able to discuss the key concepts and principles in designing courses for flexible learning in nursing; apply instructional design principles for course development and implementation in flexible learning in nursing; and develop a course package to enable students to learn effectively in flexible learning context.

To achieve the objectives of the training course, it consisted of three parts: (1) modules on concepts and principles of flexible learning in nursing, (2) steps in designing courses in flexible learning in nursing, and (3) sharing of exemplars and evaluation. Participants were required to answer discussion forums and submit samples of their redesigned course horizontal syllabus, study guide, activity guide, assignment guide, and course guide. The training was implemented in a way that exemplified how the faculty can implement their nursing courses using flexible learning approaches with both synchronous and asynchronous activities.

THE UP COLLEGE OF NURSING EXPERIENCE

The UP College of Nursing BSN program design ensures that students will be prepared to perform the expected roles and responsibilities of a beginning professional nurse capable of working in various settings including but not limited to the hospital and community settings. The outcomes-based design of the program integrates scaffolding strategies moving students progressively toward phases up to successful completion of the program.

The transition to flexible learning of the UPCN BSN program necessitates the use of the Integrative Model.[21] The Integrative Model is a goal-oriented instructional approach that supports the learners as they develop the ability to learn independently and become self-directed. In this model, the faculty facilitates students' analysis of information about the concept presented in an organized collection of materials. Successful implementation of the model results in students progressing information and ideas from the annotated learning materials into new ideas and understandings. In doing this, learners develop their ability to think, analyze, and draw conclusions independently.

The Integrative Model promotes flexible learning and allows students to customize their pace, place, and mode of learning. This is an important concept in the context of the COVID-19 pandemic, where: (1) learning face-to-face puts students and faculty at some risk of getting COVID-19, (2) there are restrictions on the movements of people to stop the community transmission of the COVID-19 outbreak, and (3) there are socio-economic difficulties because of the quarantine protocols and community lockdown policies.

Various subjects implemented flexible learning modes after going through the faculty training course. The following sections narrate how the faculty implemented various courses (i.e., foundation, intervention, and intensive nursing) using flexible learning during AY 2020 to 2021. The authors of this case report were also involved in these subjects. The UPCN faculty experience, including teaching-learning strategies used, challenges encountered, pedagogical issues, and other pertinent details of the course redesign and implementation are shared in the narrative.

Nursing Foundation Courses

The foundation courses focus on building up bio-behavioral foundations, knowledge from the physical, social, natural, and health sciences, and the humanities in the practice of nursing. The courses are primarily composed of theory, laboratory, and clinicals.

The College adapted flexible learning by developing faculty and student guides. Study guides were written to mimic as closely as how faculty were communicating with the students during in-person implementation. Pre-pandemic study guides were mainly used to help students use other resources, specifically textbooks, to focus on essential topics. The course and study guides also helped the faculty to steer students towards the achievement of learning outcomes by specifying what activities are needed to demonstrate these outcomes. Study guides were also produced in electronic copies posted in the learning management system (LMS), and hard copies sent via snail mail to students. Since learning beginning nursing skills is one of the major goals of the foundation courses, teaching in a flexible mode entailed a careful and creative strategy for students to engage in the study guides. The learning materials specified in the study guide, particularly open educational resources, were reviewed for authenticity and curated substantially for the students to learn evidence-based information and be thoroughly guided.

In addition, the use of technology is maximized in the flexible learning mode. For those students who have internet access, the faculty designed their courses in the UP Manila Virtual Learning Environment and Canvas as the college LMSs. In these LMSs, faculty can upload the learning materials and students can go through them. Gadgets for video recording and presenting are commonly used for skills demonstration. Videos produced by both faculty and students are used in teaching and evaluating performance. These methods were initially difficult because the faculty and students were not used to video recording and were adjusting to online modes of teaching and learning. The faculty needed a paradigm shift in the traditional teaching-learning process as the educational system became more student-centered and refocused on independent learning.

Nursing Intervention Courses

The Intervention courses aim to equip nursing students with skills to provide holistic nursing care, including palliative and end-of-life care, to different clients with physiologic alterations and psychosocial needs using the nursing process.

In these courses, students are developing more competencies similar to a beginning nurse. Pre-pandemic, an integral part of these courses are the clinical rotations in different areas of the Philippine General Hospital, Manila Health Department, and other partner institutions, which allow students to apply their knowledge and master their skills through caring for patients and their families in the hospital and the community.

Expectedly, the subjects under the intervention courses were also affected by the onslaught of the pandemic, as clinical duty rotations were postponed. Faculty under these courses had to innovate and find creative ways to continue teaching, assist students in improving their clinical skills, and achieve the identified outcomes. Similar to the nursing foundation courses, video recording for return demonstration of nursing skills was used. Instead of actual patients, family members were invited as mock patients. In addition, paper-based case studies were used to demonstrate student understanding of concepts, select appropriate nursing care, decision-making, and critical thinking.

Simulation-based education was also maximized in the intervention courses. An extensive virtual clinical simulation integrating the phases pre-brief, briefing, case progression (simulation activity), debrief/reflection, and evaluation was implemented in place of hospital rotation. The LMS was used as the platform for the virtual hospital with different "wards," and students were assigned to different patient cases. Case scenarios were progressive. Video recording, audio recording, and photos were curated to simulate interactions with patients, caregivers, and other healthcare team members. Additionally, a mock electronic medical record was designed on a Google site, simulating documents seen in a usual hospital rotation, such as health management records, nurses' notes, and laboratory/diagnostic tests. Since the faculty designed the case progressions, they created scenarios specifically targeting the course outcomes.

Meanwhile, the use of standard patients (SP) was implemented in the mental health and psychiatric nursing course. This was done as an online simulation. This activity helped the students develop skills in psychiatric assessment, particularly in the mental status examination and psychiatric interview. The online encounter with standardized patients prepared them for the clinical portion of the course wherein actual individual clients were invited to participate in an online mental health promotion program and psychiatric rehabilitation sessions with the students under faculty supervision.

Intensive Nursing Courses

The Intensive Nursing Courses provide opportunities for students to assume the role of client-care provider, researcher, and leader-manager, applied in a beginning generalist nurse in the hospital and community. These terminal courses integrate what they have learned from the previous courses to include clients with psychosocial needs requiring critical, emergency, and specialized care. In the program design, the increasing complexity of interventions requires additional skill development and opportunities for real-life application. During the pandemic, these were the courses that were greatly affected by cancellation of face-to-face classes and hospital/community rotations.

The faculty needed to reconceptualize how the major components of the intensive nursing courses could be delivered. Learning outcomes were revisited as the initial curricular activity, consistent with the outcomes-based framework. The revisiting resulted in the identification of outcomes that can be achieved through an online platform. Course outcomes concerning the application of critical thinking for critically ill clients, demonstration of quick and accurate prioritized identification of problems, application of appropriate interventions in a safe, holistic, and compassionate manner, integration of evidence-based practice, and application of bioethical principles were retained.

The content was also reviewed to support the achievement of learning outcomes. The re-selection and re-organization of topics were done to focus on what is essential for the achievement of student learning outcomes and which strategies will be appropriate to deliver these. Since these courses required higher levels of complexity, it became more difficult for the faculty to identify teaching strategies where online strategies will be the primary approach. Teaching strategies were redesigned to include careful curation of learning activities, maximizing the features of the LMS. Open education resources in the form of videos, selected journal articles, readings, and checklists were also maximized. Online discussion fora in the LMS facilitated both individual and group learning. Recorded lectures along with slide decks from the faculty can be viewed independently and at the students' own pace. Case studies were also used to help achieve high level of competence. Laboratory sessions were also designed to teach skills in caring for clients with chest tube thoracotomy, intravenous therapy, and providing advanced cardiac life support (ACLS), and pediatric advanced life support (PALS). Though activities are mostly self-directed, the faculty made sure that student learning was well-guided by publishing activity and assignment guides throughout the course implementation, in addition to the general course guide. Synchronous activities through small group discussions were also implemented to answer queries, assist in integrating concepts, and bolster students' achievement of outcomes. The features of the LMS augmented the learning experience since the faculty designed the activities and ensured that students achieved important outcomes before proceeding to the next phases of the course. The LMS also aided the faculty in monitoring the progress of each student and tailoring the guidance needed.

For the intensive community health nursing experience, close coordination with the clients through the help of the community organizers from the UP Manila Community Health and Development Program made it possible to meet clients and various stakeholders online. They assisted

in setting up several meetings and oriented the partners on how to use the technology. Planning, consultations, and interventions were done using an online video conferencing platform. There were some limitations encountered because of connectivity issues, technological knowledge and skills in using online platforms, added to the fast-changing COVID-19 restrictions. Despite these challenges, interaction with actual clients helped maximize the teaching-learning experience.

Translation of evaluation activities to online mode was also imperative. Though the redesigned intensive nursing courses were successful, the faculty recognized in their review that some outcomes such as provision of care, collaboration, and demonstration of effective nurse-client relationship can be best demonstrated with actual client care in the actual setting.

Throughout all subjects, courses deliberately included additional measures to ensure student welfare. Recognizing that faculty and student home settings and situations are part of the learning experience, the faculty included asynchronous and synchronous wellness checks at certain periods throughout course implementation. These have been important to further tailor student guidance, ensure holistic student support, and motivate the students to continue learning.

DISCUSSION

This case report described the educational intervention and initiatives of the UPCN in transitioning to flexible learning during the COVID-19 pandemic. Specific teaching-learning strategies and approaches used by UPCN in the transition to flexible learning were identified and discussed.

Anchored on the University's aim to promote excellence, the College provided a series of continuing education sessions to enhance faculty competence in transitioning to flexible learning aided by learning management systems. This is one of the pivotal learning from this experience, noting that the faculty should be adept with educational principles to make flexible learning successful. A study of 133 blended learning courses across various disciplines showed that particular attention should be given to adequate course structure and guidance for students, activating learning tasks, stimulating interaction and social presence of teachers, and timely feedback on the learning process and outcomes.[22] These aspects from this study were comparable and were appropriately highlighted by UPCN's redesign and implementation of courses in AY 2020-2021. Course structure and guidance for students were addressed by providing course guides, study guides, and assignment guides in all courses implemented by UPCN in the transition to flexible learning.

The curriculum has adapted a format where distance and time are greatly considered. Study guides significantly transformed learning from the traditional classroom to self-directed learning. These helped students navigate the concepts through various media, allowing students to comprehend the content more easily and perform activities that are related to the concept being learned. In terms of activation of learning tasks, UPCN was able to ensure this by maximizing LMS features (e.g,. progressive online course activities upon completion of tasks), identifying appropriate communication channels with faculty and students, and continuous monitoring of student progress. Stimulating interaction and social presence of teachers were addressed by using both synchronous and asynchronous sessions. Faculty selected various resources used in their courses in different media forms from static readings, photos, journal articles, videos, to interactive virtual games. All of which were carefully curated to ensure their appropriateness in achieving the course outcomes. In addition, wellness checks were done with students in a one-on-one and/or group setting, whichever is more appropriate. During the wellness checks, feedback, additional clarification on academic matters, and open forum on other possible concerns including psychosocial concerns are raised. Timely feedback was ensured by maximizing the automation feedback features of LMS, and additional faculty feedback was given.

The nature of learning in the clinical setting is complex given the varied learning sources such as the faculty, peers, clients, and professional nurses in the work area. The opportunity to reconceptualize teaching and learning, particularly in skill-intensive laboratory and clinical settings has emerged. The pandemic brought limitations with valuable workplace experience, and this paved the way for creative and innovative strategies to be used by the faculty. Some traditional strategies were translated into a digital-friendly implementation, such as recording and synchronous lectures. Group learning was maximized through discussion forum, structured group activity, and facilitated case studies. Recognizing that internet and gadget access may be an issue, UPCN ensured that the redesigned courses using flexible learning can be consumed by the different levels of available technology. Course packages were uploaded in LMS for use by students with gadget and internet access, and at the same time sent through paper-based printed material with supplementary digital copies of learning activities to students with limited internet connectivity. Novel approaches also emerged during the transition to flexible learning. These strategies used to implement the redesigned courses have similar effects on students as seen in other studies. For instance, Vandsburger and Duncan-Daston[22] found that college students mostly reacted positively to study guides and perceived them as contributors in academic success. This was comparable to UPCN's students as the study guides were useful for both faculty and students for structure and direction. Meanwhile, case-based learning strategies were shown to promote active engagement, self-assessment, and decision making. It allows students to realize how they will react in real-life situations.[23] Similar to this, students enrolled in the intervention courses were able to actively engage in case studies done individually and by group. They were able

to develop decision making given a case scenario. Through rubrics, students were able to readily assess if they were able to achieve or were still lacking important components of the case studies. Virtual clinical simulation is an innovative teaching-learning technological strategy providing immersive self-regulated training, reproducing real-life experiences, and feedback in an environment that is safe, interactive, and dynamic.[24] The virtual clinical simulation done by UPCN was able to successfully replicate real-life experiences in a safe environment. Another study in undergraduate medical students showed that the simulated patient (SP) approach has been useful in teaching clinical skills in psychiatry with limited previous clinical experience and knowledge. Interactions with SPs can improve communication skills, help develop professionalism, and above all, inspire self-reflection.[25] The simulation using SP in the psychiatric rotation has comparable effects to this study.

Technological knowledge and skill are one of the challenges in transitioning to flexible learning. Even with the availability of helpful applications (i.e., online videoconferencing, collaborative applications, computer tools) and learning management systems, the use of these platforms presented challenges for both students and faculty. This was adequately addressed by training, appropriate onboarding, and continuous technical support. Faculty champions for LMS were identified to provide peer-to-peer support as needed.

Faculty transitioning to flexible learning should be mindful of the alignment of all activities towards the achievement of educational outcomes; while designing appropriate evaluation to identify if educational outcomes are met. In choosing from the wide array of possible teaching-learning strategies, the faculty ensured that each learning activity contributes to the achievement of identified learning, course, and program outcomes of the BSN curriculum. Realizing how important that nursing faculty be competent in designing their courses, and with the appreciation that the training was effective for UPCN faculty, the same training was disseminated to other colleges of nursing in the Philippines, sharing best practices with other schools, and equipping more faculty towards designing flexible learning in nursing.

This educational case report highlighted how curricular integration and curricular redesign should be guided by frameworks proven to be effective and efficient in the successful achievement of educational outcomes. Specific teaching-learning strategies were identified in the implementation of flexible learning in nursing which can be adapted by institutions transitioning to flexible learning in nursing. This experience highlighted the importance of appropriate training and guidance of faculty to enable them to integrate and redesign courses efficiently and effectively. In addition, addressing emerging issues and challenges of both faculty and students should be done promptly. This includes addressing various concerns such as technological competence and accessibility by various interventions such as continued education and training for faculty, peer-to-

peer technological assistance, and technological financial assistance, among others. Though this case report is limited to the nursing faculty and students of UPCN, learnings from their experiences can be valuable resources to those who are continuing their shift towards flexible learning in nursing.

CONCLUSION

Flexible learning as a response to the changes brought about by the times and the COVID-19 pandemic is an effective pedagogical approach to implementing nursing education. Specific teaching-learning strategies, such as the use of study guides, curated learning activities and materials, maximizing use of technology, case-based learning, and various forms of simulation, were also identified through this case report. Timely intervention for emerging issues should also be implemented to support the successful achievement of educational outcomes. Measures must be taken to ensure appropriate curricular integration and curricular redesign of nursing courses, and consequently, the nursing program. Parallel to these is highlighting the importance of faculty preparation in designing courses in flexible learning founded on educational concepts and instructional design principles. Continuous faculty support in these aspects is essential to ensure the sustainability of effective flexible learning in nursing education.

Statement of Authorship

Author Disclosure

Funding Source

REFERENCES

1. Graham CR. Blended learning systems: definition, current trends, and future directions. In: Bonk CJ, Graham CR, eds. Handbook of blended learning: global perspectives, local designs. San Francisco: Pfeiffer Publishing; 2006. pp. 3-21.
2. Pragholapati A, Putri ST. Blended learning in nursing education: literature review [Internet]. 2021 [cited 2023 Sep]. Available from: https://ssrn.com/abstract=3792832.
3. Maddison T. Learn where you live: delivering information literacy instruction in a distributed learning environment. J Libr Inf Serv Distance Learn. 2013;7(3):264-77. doi: 10.1080/1533290X.2013.806276.
4. Martin B, Haennel R, Daniels J. Academic and clinical performance of entry-level students who attended a satellite campus using a distributed learning model. Physiother. 2015 May;101:e955-e956. doi:10.1016/j.physio.2015.03.1808.
5. Jowsey T, Foster G, Cooper-Ioelu P, Jacobs S. Blended learning via distance in pre-registration nursing education: a scoping review. Nurse Educ Pract. 2020 Mar;44:102775. doi: 10.1016/j.nepr.2020.102775. PMID: 32247200; PMCID: PMC7195119.
6. Gause G, Mokgaola IO, Rakhudu MA. Technology usage for teaching and learning in nursing education: an integrative review. Curationis.

2022 Jun 15;45(1): e1-e9. doi: 10.4102/curationis. v45i1.2261. PMID: 35792609; PMCID: PMC9257720.

7. Ali A, Ahmad I. Key factors for determining student satisfaction in distance learning courses: a study of Allama Iqbal Open University. Contemp Educ Technol. 2011;2(2):118-34. doi: 10.30935/cedtech/6047.

8. Lo CC. Student learning and student satisfaction in an interactive classroom. J Gen Educ. 2010;59(4):238-63. doi: 10.5325/jgeneeduc.59.4.0238.

9. Yukselturk E, Yildirim Z. Investigation of interaction, online support, course structure and flexibility as the contributing factors to students' satisfaction in an online certificate program. Educ Technol Soc. 2008 May;11(4):51-65.

10. He L, Yang N, Xu L, Ping F, Li W, Sun Q, et al. Synchronous distance education vs traditional education for health science students: a systematic review and meta-analysis. Med Educ. 2021 Mar;55(3): 293-308. doi: 10.1111/medu.14364. PMID: 32881047

11. Wallace S, Schuler MS, Kaulback M, Hunt K, Baker M. Nursing student experiences of remote learning during the COVID-19 pandemic. Nurs Forum. 2021 Jul;56(3):612-8. doi: 10.1111/nuf.12568. PMID: 33728660; PMCID: PMC8250930.

12. Abbasi GA, Jagaveeran M, Goh Y, Tariq B. The impact of type of content use on smartphone addiction and academic performance: physical activity as moderator. Technol Soc. 2021 Feb;64:101521. doi:10.1016/j.techsoc.2020.101521.

13. Aristovnik A, Keržič D, Ravšelj D, Tomaževič N, Umek L. Impacts of the COVID-19 pandemic on life of higher education students: global survey dataset from the first wave. Data Brief. 2021 Dec;39:107659. doi: 10.1016/j.dib.2021.107659. PMID: 34869802; PMCID: PMC8634691.

14. Langegård U, Kiani K, Nielsen SJ, Svensson PA. Nursing students' experiences of a pedagogical transition from campus learning to distance learning using digital tools. BMC Nurs. 2021 Jan 19;20(1):23. doi: 10.1186/s12912-021-00542-1. PMID: 33468132; PMCID: PMC7814979.

15. Molato BJ, Sehularo LA. Recommendations for online learning challenges in nursing education during the COVID-19 pandemic. Curationis. 2022 Oct 27;45(1):e1-e6. doi: 10.4102/curationis. v45i1.2360. PMID: 36331216; PMCID: PMC9634659.

16. Commission on Higher Education-Philippines. CHED Memorandum Order No.4 Series of 2020: Guidelines in the implementation of flexible learning [Internet]. 2020 [cited 2022 Aug]. Available from: https://ched.gov.ph/wp-content/uploads/CMO-No.-4-s.-2020-Guidelines-on-the-Implementation-of-Flexible-Learning.pdf

17. Deakin University. Introducing flexible learning [Internet]. 2013 [cited 2022 Aug]. Available from: https://www.deakin.edu.au/study/ways-to-study/flexible-study-options

18. Koehler MJ, Mishra P. What is technological pedagogical content knowledge? Contemp Issues Technol Teach Educ. 2009;9(1):60-70.

19. Commission on Higher Education, appropriating funds therefor and for other purposes [Internet]. 1994 [cited 2022 Aug]. Available from: https://www.officialgazette.gov.ph/1994/05/18/republic-act-no-7722/

20. Mishra P, Koehler MJ. Technological pedagogical content knowledge: a framework for teacher knowledge. Teach Coll Rec. 2006;108(6): 1017–54. doi:10.1111/j.1467-9620.2006.00684.x.

21. Beane J. Curriculum Integration: designing the core of democratic education. New York: Teachers College Press; 1997. pp. 38-46.

22. Vandsburger E, Duncan-Daston R. Evaluating the study guide as a tool for increasing students' accountability for reading the textbook. J Coll Read Learn. 2011 Sept;42(1):6–23. doi:10.1080/10790195.2011.10850345.

23. Burucu R, Arslan S. Nursing students' views and suggestions about case-based learning integrated into the nursing process: a qualitative study. Florence Nightingale J Nurs. 2021 Oct;29(3): 371-8. doi: 10.5152/FNJN.2021.20180. PMID: 35110176; PMCID: PMC9476289.

24. De Sa Tinôco JD, Enders BC, Sonenberg A, de Carvalho Lira ALB. Virtual clinical simulation in nursing education: a concept analysis. Int J Nurs Educ Scholarsh. 2021 Jun 18;18(1). doi: 10.1515/ijnes-2020-0001. PMID: 34139113.

25. Siemerkus J, Petrescu AS, Köchli L, Stephan KE, Schmidt H. Using standardized patients for undergraduate clinical skills training in an introductory course to psychiatry. BMC Med Educ. 2023 Mar 15;23(1):159. doi: 10.1186/s12909-023-04107-5. PMID: 36922802; PMCID: PMC10016160.