



Academic Restructuring Towards Flexible Learning in Philippine Pharmacy Education

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ABSTRACT

Background: Due to COVID-19, schools physically shut down in 2020, which led to the implementation of flexible learning in pharmacy education. **Objective:** The first phase of this study sought to determine the stage where pharmacy schools are from the continuum of pre-emerging to empowering, forming the basis of the creation of the ACTS (Assess, Cope, Transition, Synergize) framework. The second phase determined the stage two years after action plan implementation. **Methods:** Survey research using an adapted tool was employed. Eighty-seven (87) and fifty-three (53) schools represented by the deans or heads, participated in the first and second phases, respectively, out of 124 schools. Qualitative inputs were used to supplement the discussion of findings. Data were analyzed using descriptive statistics and thematic analysis. **Results:** The results in 2020 showed that respondent schools were mostly on the pre-emerging (42.35%) to emerging phase (34.12%), which means that they are initially recognizing the need for deliberate action plans to implement flexible learning options or still beginning to raise awareness to plan for such. In 2022, respondent schools have migrated to engaging (37.74%), extending (35.8%) and empowering (18.9%) stages, which means that schools are already establishing action plans across all stakeholders in the academic community, beginning trial initiatives. Captured also in the re-survey are a) students' migration from category 2- limited connectivity to category 3- full connectivity (6.9% to 43.4%); b) faculty members on status quo, more on category 2 than category 3 (71.7% and 28.3%) c) faculty development needs are about curriculum enhancement and hybrid modality (25% and 22%) d) schools now use a variety of platforms and Learning Management System (LMS). **Conclusion:** Moving forward, there is still a need for recovery interventions, revision of the recommending guidelines in 2020, measures of sustainability and embedment of continuous quality improvement (CQI) in the processes, and official guidelines in the implementation of the EPP in the context of the new curriculum.

INTRODUCTION

The disruption in the delivery of instruction in Philippine Higher Education Institutions (HEIs) brought about by the COVID-19 necessitated the shift from traditional face-to-face

class instruction towards the flexible learning modality [1][2]. On September 2, 2020, the Commission on Higher Education (CHED) issued the CHED Memorandum Order (CMO) 4 series of 2020, "Guidelines on the Implementation of Flexible Learning" to guide public and private HEIs to ensure learning

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continuity despite the restrictions brought about by the pandemic [3].

Flexible learning, as defined by Cassidy et al., 2016 as cited in “Guidelines on the Implementation of Flexible Learning”, is a pedagogical approach allowing flexibility of time, place, and audience, including but not solely focused on the use of technology [3]. This modality is a “learner-centered approach that is deeply rooted in the needs of the students.” The primary aim in the implementation of flexible learning in the Philippines is that the learners should be given the “most flexibility on the learning content, schedules, access and innovative assessment, making use of digital and non-digital tools.” [3].

Thus, in line with its thrust to lead all Pharmacy schools in the Philippines, the Philippine Association of Colleges of Pharmacy (PACOP), Inc., an affiliate organization of the Philippine Pharmacists Association (PPhA) representing the stakeholders from the academic stance, acknowledges the CHED mandate to adopt the flexible learning modality as the most rational alternative to full residential learning, adapt to its very challenging requisites and become adept in its possible long-term implementation [4]. PACOP utilized the ACTS-Resilience Capacities Framework in creating its action plans to effectively aid Pharmacy schools in their transition as shown in Figure I.

Before undertaking any strategy, PACOP assessed the strengths and needs of Pharmacy schools through an initial environmental scanning in May 2020 and subsequent followup study in September 2022 to determine their capacities in implementing flexible learning and returning to face-to-face classes. PACOP, in collaboration with key academic leaders in Philippine Pharmacy education, created the PACOP Guidelines for Academic Restructuring towards Flexible Learning Based on the Best Practices of Pharmacy Schools in the Philippines to aid all Pharmacy schools in its transition towards the flexible learning modality for the Academic Year 2020-2021. In 2022,

the PACOP 2020 guidelines were modified and re-issued per the CHED Memorandum Order (CMO) 9 series of 2022, “Updated Guidelines on the Implementation of Face-to-face Classes to prevent and mitigate COVID-19 infections in Higher Education”. CMO 9 series of 2022 was developed considering the high COVID-19 vaccination coverage in the country, the classification of the country as low-risk, the lower fatality rates and severity of the prevailing Omicron variant and benchmarking of practices from other countries, prompting the gradual return to face-to-face classes in the higher education sector [5].

Both PACOP guidelines were carefully conceptualized, developed and established by key academic leaders in the Pharmacy program by relevant Philippine Government regulations, public health standards released by the World Health Organization (2020) [6], Philippine Department of Health (DOH) and Joint Memoranda from CHED, DOH [2] and Inter-agency Task Force (IATF) for the Management of Emerging Infectious Diseases (2020) [7]. In the creation of the PACOP guidelines, the scientific method was followed in support of data-driven decision-making. Thus, the level of readiness, best practices and areas for improvement of Philippine Pharmacy schools in academic restructuring towards flexible learning were investigated during the initial stages of transitioning to flexible learning in 2020 and during the transition to the implementation of face-to-face classes in September 2022. This research provides important evidence of how respondent schools in the Philippines were able to successfully thrive amidst the disruption in the delivery of pharmacy education in 2020.

METHODS

To determine the readiness of HEIs in academic restructuring, a general survey on the students’ and faculty members’ internet connectivity was determined in May 2020. The timing of the survey administration was critical since the purpose of this study is to help Pharmacy schools in developing their strategies towards flexible learning. Thus, in addition to ascertaining HEI readiness, faculty training needs were also considered [8]. HEIs were also surveyed on learning management systems (LMS) utilized. In addition, a researcher-made survey instrument was designed based on the e-Learning planning framework proposed by Te Toi Tupu Consortium, on behalf of the New Zealand Ministry of Education, 2014 [9]. The said instrument was validated by academic experts and tested for reliability with Cronbach alpha = 0.9688. The instrument explored HEI best practices and identified their phase in the following domains:

1. Course Plan Modifications to Flexible Learning Option (FLO)
2. Delivery of Lecture classes
3. Delivery of Laboratory classes

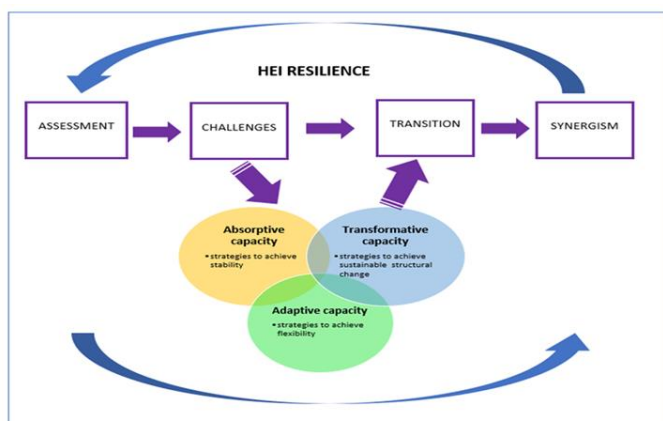


Figure I. PACOP ACTS-Resilience Capacities Framework.

4. Conduct of Research courses
5. Experiential Pharmacy Practice (EPP) or student internships
6. Health and Wellness

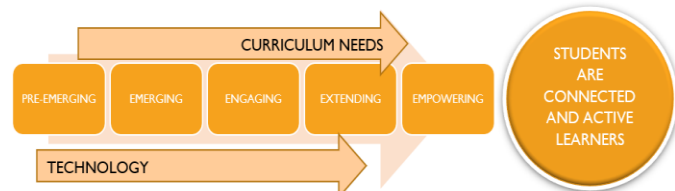


Figure II. Five Phases in Academic Restructuring of Philippine Pharmacy schools in transitioning to the Flexible Learning Modality.

The five (5) phases in academic restructuring adopted in this survey are as follows: Phase 1 – pre-emerging, Phase 2 – emerging, Phase 3 – engaging, Phase 4 – extending, and Phase 5 – empowering. This is further illustrated and described in Figure II.

The phases of academic restructuring were defined by this study as follows: in Phase 1 – Pre-emerging phase, the institution recognizes the need to put in place deliberate action plans to implement flexible learning options. For Phase 2 – the emerging phase, the institution begins to raise awareness and plans to implement flexible learning options. Phase 3 – The engaging phase means that the institution establishes action plans across all stakeholders in the academic community along with the implementation of FLOs and begins trial initiatives. Phase 4 – extending phase means that the institution effectively aligns plans across all stakeholders in the academic community and wider networks. FLOs and ICT are used appropriately to collaborate with students to support authentic, higher-order, co-constructed learning. Finally, Phase 5 – empowering means that the institution, community and its networks work in partnership towards implementing the plans for transitioning to flexible learning options (FLO). ICT use is ubiquitous, virtual, accessible and equitable, enhancing authentic, co-constructed learning within and beyond the school community.

The instrument was deployed online through Google Forms to all 111 Pharmacy schools through communication sent to deans and program heads as official representatives. Eighty-seven and fifty-three schools represented by the deans or heads, participated in the first (May 2020) and second phase (September 2022), respectively, out of 124 schools. To compare the progress in academic restructuring in transitioning towards flexible learning, a follow-up study was conducted in September 2022 when conditions for the new normal were established and the return to face-to-face classes was gradually implemented. Qualitative inputs were used to supplement the discussion of findings. Data were encoded using Microsoft Excel and analyzed using descriptive statistics through Stata version 11.

Table I. Students' internet connectivity.

Students' internet connectivity	May 2020		September 2022	
	Frequency	Percentage	Frequency	Percentage
Level 2 (limited internet connectivity)	81	93.10%	29	54.70%
Level 3 (full internet connectivity)	6	6.90%	23	43.4%
	87	100%	52	100%

RESULTS AND DISCUSSION

In the initial survey conducted in May 2020, a total of 87 schools from regions 1, 2, 3, 4A, 6, 7, 8, 9, 10, 11, 12, National Capital Region (NCR) and Cordillera Autonomous Region (CAR) participated in the survey. In the follow-up survey conducted on September 2022, a total of 53 schools from Regions 1, 2, CAR, 3, 4A, Mindoro, Marinduque, Romblon, Palawan (MIMAROPA), 5, 6, 7, 8, 9, 10, 11, 12, 13, Bangsamoro Autonomous Region for Muslim Mindanao (BARMM), and NCR participated.

Students' internet connectivity

Respondents conducted their own institutional survey to determine their students' and faculty members' capability to conduct flexible learning using education technology tools linked through the internet. The results of this institutional survey were shared by the respondents.

From the initial survey in May 2020, the majority of the students had Level 2 limited internet connectivity (81 institutions, 93.1%) while only a few had Level 3 full internet connectivity (6 institutions, 6.9%) as shown in Table I. During the follow-up survey, it was reported that the majority still had Level 2 limited internet connectivity (29 institutions, 54.7%) whereas others had Level 3 full internet connectivity (23 institutions, 43.4%). It is positive to note that there were no institutions whose students reported no internet connectivity.

The limitations in the students' internet connectivity are consistent with the findings of other studies conducted on students in Philippine Universities [10, 11, 12]. It is estimated that 45% of Filipino citizens (46 million) and 74% (34,500) of public schools still do not have access to the Internet [10, 13]. Moreover, the Philippines also experiences extremely slow internet connection. The country ranks 46th out of 182 countries for fixed broadband and 84th out of 140 countries for mobile data [14]. One of the reasons for the limited internet in the Philippines is due to the limited Internet Service Providers (ISPs) in the country. With very few ISPs, internet service costs in the Philippines are expected to be some of the highest in the world [10, 11, 12].

Faculty Members' Internet connectivity

Through the imposition of IATF Resolution no. 30 series of 2020, "Recommendations for the Management of the Coronavirus Disease 2019 (COVID-19) Situation" that suspended classes at all levels in the country, HEIs needed to ensure learning continuity through distance education [7]. This meant that faculty members needed to have their internet connection in their own homes as well. As shown in Table II, respondents of this survey reported that the majority of faculty members have Level 2 limited internet connectivity (61 institutions, 70.11%), while only a few had Level 3 full internet connectivity (26 institutions, 29.9%). During the follow-up survey, it was reported that the majority still had Level 2 limited internet connectivity (38 institutions, 71.7%) whereas others had Level 3 full internet connectivity (15 institutions, 28.3%).

The Broadband Report of 2020 mirrors the realities faced due to a global pandemic, which has disrupted both global and local economies, healthcare systems, and education. Most notably, it has underscored the vital role of broadband in connecting societies and maintaining their strength and health [15].

Internet connectivity and access to technology resources remain a challenge among faculty members in Philippine HEIs. The integration of computer technology into teacher education has become a national concern, leading to the establishment of standards for schools, colleges, and education departments. These standards focus on using computer technology as a tool to improve student learning. Consequently, faculty members are challenged to develop computer technology skills and integration capabilities in pre-service teachers [16]. Further, a research study revealed that most faculty members had moderate computer proficiency and lacked formal training in online teaching [17]. Only a small number had consistent access to a reliable internet connection. Further, according to a study conducted by Sarmiento (2021), a member of the National Research Council of the Philippines (NRCP), the majority of teachers are from rural areas where the common internet connection used is mobile data [18]. Due to daily caps on mobile data usage, teachers may face difficulties in delivering remote classes. Consequently, internet access, connectivity, and speed were identified as challenges for these teachers compared to those with fiber connections.

Table II. Faculty members' internet connectivity.

Faculty members' internet connectivity	May 2020		September 2022	
	Frequency	Percentage	Frequency	Percentage
Level 2 (limited internet connectivity)	61	70.11%	38	71.70%
Level 3 (full internet connectivity)	26	29.90%	15	28.30%
	87	100%	53	100%

Faculty Members' technology usage training needs

With the sudden transition to flexible learning, faculty members may not necessarily be prepared and have the training required to use technological tools. The training needs of the faculty members were determined to help HEIs develop necessary seminars or workshops to improve technological capabilities.

In the initial survey in May 2020, respondents reported that the development of alternative teaching-learning activities and assessment tasks (31%) and development of new instructional materials (29.13%) and new course plans (23.74%) are to be prioritized. The same training needs remain to be the priorities as reported in the follow-up survey on September 20 (Table III).

Phases of Pharmacy Schools in Transitioning Towards Flexible Learning

It is the role of PACOP as the official affiliate organization of the Philippine Pharmacists Association (PPhA) in the education sector to develop programs that would help HEIs in common areas of concern. Thus, PACOP needs to determine the phase of readiness of Pharmacy schools in transitioning to flexible learning before any interventions can be established (Table IV).

During the initial stage of transitioning, respondents perceived that they are in the Emerging phase where the institution is beginning to raise awareness to plan for implementing flexible learning options (36 institutions, 42.35%) while others are in the Engaging phase (29 institutions, 34.12%) which means that the institution is establishing action plans across all

Table III. Faculty training needs.

Faculty Training Needs	May 2020		September 2022	
	Frequency	Percentage	Frequency	Percentage
Course plans development	66	23.74%	31	18%
Instructional materials development	81	29.13%	40	23%
Alternative Teaching-Learning activities and assessment tasks	86	31%	43	25%
Health and wellness	40	14.40%	20	11%
Others (curricular modification, skills enhancement strategies, module preparation, etc.)	5	1.80%	38	22%
TOTAL RESPONSES	278	100%	173	100%

Table IV. The phase of Pharmacy Schools in Transitioning towards Flexible Learning.

Phase of Pharmacy Schools in Transitioning towards Flexible learning	May 2020	September 2022
Pre-emerging. The department/ college/ school/ faculty of Pharmacy recognizes the need to put in place deliberate action plans to implement flexible learning options.	7.06% (6)	5.7% (3)
Emerging. The department/ college/ school/ faculty of Pharmacy begins to raise awareness to plan for implementing flexible learning options.	42.35% (36)	7.5% (4)
Engaging. The department/ college/ school/ faculty of Pharmacy establishes action plans across all stakeholders in the academic community. The department/ college/ school/ faculty of Pharmacy begins trial initiatives.	34.12% (29)	37.74% (20)
Extending. The department/ college/ school/ faculty of Pharmacy effectively aligns plans across all stakeholders in the academic community and wider networks. ICT is used appropriately to collaborate with students to support authentic, higher-order, co-constructed learning.	9.41% (8)	35.8% (19)
Empowering. The department/ college/ school/ faculty of Pharmacy, community and its networks work in partnership towards implementing the plan for transitioning to flexible learning options (FLO). ICT use is ubiquitous, virtual, accessible and equitable, enhancing authentic, co-constructed learning within and beyond the school community.	7.06 % (6)	18.9 % (10)

stakeholders in the academic community and begins trial initiatives. During the follow-up study, it is important to note that the majority of the respondents reported that their institutions are now in the Engaging phase (20 institutions, 37.74%) while there are already a good number of HEIs in the Extending Phase (19 institutions, 35.8%). This meant that the institutions were already effectively aligning plans across all stakeholders in the academic community and wider networks. ICT has been used appropriately to collaborate with students to support authentic, higher-order, co-constructed learning.

Phases of Pharmacy Schools in the Six Domains

Domain 1: Course Plan Modification

The first domain Course Plan Modification refers to the constructive alignment of the learning outcomes such as Program Learning Outcomes, Year-level Learning Outcomes and Intended Learning Outcomes) with the Teaching-Learning Activities (TLAs) and Task Assessments (ATs).

The modifications in the course plan for flexible learning should also consider alignment with the Table of Specifications for the Philippine Pharmacy Licensure Examination) (Table V).

During the initial stages of transition, respondents reported that their institution is in the Emerging phase where they begin to plan for modifying course plans to implement flexible learning options (40.23%). Two years after the survey, respondents reported that they have progressed to the

Table V. Phase of Pharmacy Schools in Transitioning towards Flexible Learning- Course plan modification.

May 2020	September 2022
Emerging Phase (40.23%) The department/college/school/faculty of Pharmacy begins to plan for modifying course plans to implement flexible learning options.	Extending phase (49.10%) The department/ college/ school/ faculty of Pharmacy communicates the modified course plan to implement flexible learning options to its stakeholders.

Extending phase where the institution communicates the modified course plan to implement flexible learning options for its stakeholders (49.1%).

Domain 2: Lecture classes

This domain refers to alternative modes of teaching and learning (including ICT) for lecture courses in the flexible learning context. Measuring the phase of readiness of HEIs along this domain is of utmost importance because, for the majority of schools, this is the first-time distance learning for lecture classes will be conducted for the undergraduate programs. This domain as well as the domain of laboratory classes, were divided into three subdomains: mode of delivery, gradable assessments and grading system (Table VI).

In the initial survey in May 2020, results showed that HEIs perceived their readiness on subdomain 1. Mode of Delivery of lecture classes as Engaging (45.98%) which meant that Information and Communications Technology (ICT) tools are usually used in lecture classes and there are clear links between teachers’ planning and practice. A similar perception (Engaging, 41.5%) was observed during the follow-up survey in September 2020.

In subdomain 2. Gradable Assessments, respondents perceived their readiness in the Engaging phase (39.53%) where ICT tools are usually used in lecture classes and there are clear links between teachers’ planning and practice. The same results (Engaging, 41.5%) are also evident during the follow-up study in September 2022. Respondents also report that they perceive their institutions to be in the Engaging phase (41.18%) in subdomain 3. Grading systems where grading of students’ academic performance in lecture classes frequently makes use of basic information and communication technologies such as MS Excel. The same results (Engaging, 41.5%) are also observed in the follow-up study in September 2022.

Table VI. Phase of Pharmacy Schools in Transitioning towards Flexible learning in Lecture classes.

Domain	May 2020	September 2022
1. Mode of delivery	Emerging (41.86%) In our department/ college/ school /faculty of Pharmacy, ICT tools <i>are sometimes used in laboratory classes</i> . It is evident in teachers 'planning, but not always in practice.	Engaging (39.6%) In our department/ college/ school/faculty of Pharmacy, ICT tools <i>are usually used in laboratory classes</i> and there are <i>clear links between teachers' planning and practice</i> .
2. Gradable assessments	Emerging (41.86%) Summative and formative assessments for laboratory classes <i>occasionally</i> make use of information and communication technologies.	Extending (35.4%) Assessment practices that include the use of information and communication technologies for laboratory classes are <i>used to collect, collate, and analyze data</i> . Some learners use ICT to archive and share progress of their learning.
3. Grading system	Emerging (47.13%) Grading of students' academic performance in laboratory classes <i>occasionally</i> makes use of basic information and communication technologies such as MS Excel.	Engaging (49.1%) Grading of students' academic performance in laboratory classes <i>frequently</i> makes use of basic information and communication technologies such as but not limited to MS Excel.

Domain 3: Laboratory classes

This domain refers to alternative modes of teaching and learning (including ICT) for laboratory courses in the flexible learning context (Table VII). The continuity in conducting laboratory classes is of utmost importance as literature has shown that “students who engage in well-designed laboratory experiences develop problem-solving and critical-thinking skills, as well as gain exposure to reactions, materials, and equipment in a lab setting.” [19]. Furthermore, hands-on experiences through laboratory classes inspire students to further their education and help prepare them for future careers by fostering skills required by the industry. However, the conduct of laboratory classes in flexible learning has proved to be one of the many challenges HEIs encounter. Students, in particular, are concerned about how learning outcomes can be fully achieved from a flexible learning modality where laboratory extensive classes are not offered during the pandemic [20].

The majority of the respondents perceived their institution to be in the Emerging phase (41.86%) in subdomain 1. Mode of Delivery during the initial stage in May 2020 where ICT tools are sometimes used in laboratory classes. The use of ICT tools is evident in teachers 'planning, but not always in practice. During the follow-up study in September 2022, it was

positively noted that the majority of the respondents have progressed to the Engaging phase (39.6%) where ICT tools are usually used in laboratory classes and there are clear links between teachers' planning and practice.

In subdomain 2. Gradable assessments, the majority of the respondents report that they are in the Emerging phase (41.86%) during the initial stage in May 2020 where summative and formative assessments for laboratory classes occasionally make use of information and communication technologies. During the follow-up study in September 2022, the majority of the respondents progressed to the Extending phase (35.4%) where assessment practices that include the use of information and communication technologies for laboratory classes are used to collect, collate and analyze data. Some learners use ICT to archive and share the progress of their learning.

In subdomain 3 Grading System, most respondents perceive to be in the Emerging phase (47.13%) in the initial stage of transition. This meant that at that time, grading students' academic performance in laboratory classes occasionally made use of basic information and communication technologies such as MS Excel. On the other hand, a follow-up study on September 2022 showed that respondents have progressed to the Engaging phase (49.1%) where grading of students' academic performance in laboratory classes frequently makes

Table VII. Phase of Pharmacy Schools in Transitioning towards Flexible learning in Laboratory classes.

Domain	May 2020	September 2022
1. Mode of delivery	Engaging (45.98%) In our department/college/school/faculty of Pharmacy, ICT tools are usually used in lecture classes and there are clear links between teachers' planning and practice.	Engaging (41.5%) In our department/college/school/faculty of Pharmacy, ICT tools are usually used in lecture classes and there are clear links between teachers' planning and practice.
2. Gradable assessments	Engaging (39.53%) In our department/college/school/faculty of Pharmacy, ICT tools are usually used in lecture classes and there are clear links between teachers' planning and practice.	Engaging (41.5%) In our department/college/school/faculty of Pharmacy, ICT tools are usually used in lecture classes and there are clear links between teachers' planning and practice.
3. Grading system	Engaging (41.18%) Grading of students' academic performance in lecture classes <i>frequently</i> makes use of basic information and communication technologies such as MS Excel.	Engaging (41.5%) Grading of students' academic performance in lecture classes <i>frequently</i> makes use of basic information and communication technologies such as MS Excel.

Table VIII. Phase of Pharmacy Schools in Transitioning towards Flexible learning in Research courses.

Domain	May 2020	September 2022
1. Mode of delivery	Pre-emerging (39.53%) Students <i>hardly ever have</i> internship activities involving ICT technologies. Internship program is <i>heavily reliant</i> on traditional face-to-face methods.	Engaging (39.6%) A <i>variety of</i> internship activities involving <i>varied ICT</i> technologies as part of the tasks given to the students.
2. Gradable assessments	Pre-emerging (40.23%) Assessments for student performance for internship activities <i>exclusively rely on face-to-face observations and evaluations.</i>	Extending (35.8%) Assessment practices that include the use of information and communication technologies for internship activities are <i>used to collect, collate, and analyze data.</i> Interns use ICT to archive and share progress of their learning.
3. Grading system	Pre-emerging (42.53%) Grading of students' academic performance in the internship program is obtained <i>exclusively by manual computations.</i>	Engaging (49.1%) Grading of students' academic performance in the internship program <i>frequently</i> makes use of basic information and communication technologies such as but not limited to MS Excel.

use of basic information and communication technologies such as but not limited to MS Excel.

Domain 4: Conduct of Research courses

In addition to the difficulties encountered by HEIs in ensuring continuity of laboratory classes, research courses or thesis writing at the undergraduate level also proved to be a great challenge. Students and faculty members report difficulty in communication during research mentoring and in getting enough respondents during research data collection (Table VIII).

During the initial stages of transition in May 2020, respondents reported that they were in the pre-emerging phase (36.78%) for subdomain 1. Mode of Delivery where ICT technologies are sometimes used in the conduct of research. In contrast, respondents report their progress to the Engaging phase (39.6%) where ICT technologies are usually used in the conduct of research. There are clear links between research planning and practice during the follow-up study.

The majority of the respondents also reported that they were in the pre-emerging phase (39.08%) on subdomain 2. Gradable assessments were assessments for student performance for research activities that occasionally make use of information

and communication technologies during the initial stages of transition to flexible learning. On the other hand, results showed that the institutions have advanced to the Engaging phase (37.7%) during the follow-up study in September 2022. This meant that assessments for student performance for research activities frequently made use of information and communication technologies.

In subdomain 3. Grading system, respondents showed that they were in the pre-emerging phase (37.93%) during the May 2020 study which meant that grading of students' academic performance in research occasionally made use of basic information and communication technologies such as MS Excel. This has developed to the Engaging phase (43.4%) in September 2022 where grading of students' academic performance in research frequently made use of basic information and communication technologies such as but not limited to MS Excel.

Domain 5: Experiential Pharmacy Practice (EPP)

This domain refers to alternative modes of teaching and learning (including ICT) for EPP courses in the flexible learning context. The Experiential Pharmacy Practice or Internship refers to the supervised practical experience that is

Table IX. Phase of Pharmacy Schools in Transitioning towards Flexible learning in Experiential Pharmacy program.

Domain	May 2020	September 2022
1. Mode of delivery	Pre-emerging (36.78%) In our department/college/school/faculty of Pharmacy, ICT technologies <i>are sometimes used in the conduct of research.</i>	Engaging (39.6%) In our department/college/school/faculty of Pharmacy, ICT technologies <i>are usually</i> used in the conduct of research. There are clear links between research planning and practice.
2. Gradable assessments	Pre-emerging (39.08%) Assessments for student performance for research activities <i>occasionally</i> make use of information and communication technologies.	Engaging (37.7%) Assessments for student performance for research activities frequently make use of information and communication technologies.
3. Grading system	Pre-emerging (37.93%) Grading of students' academic performance in research <i>occasionally</i> makes use of basic information and communication technologies such as MS Excel.	Engaging (43.4%) Grading of students' academic performance in research <i>frequently</i> makes use of basic information and communication technologies such as but not limited to MS Excel.

Table X. Phase of Pharmacy Schools in Transitioning towards Flexible learning and implementation of a Health and Wellness program.

Indicators	May 2020	September 2022
There is a holistic and well-defined health and wellness program in the institution during the transition to the flexible learning option.	Emerging (37.93%) In our department/ college/ school/ faculty of Pharmacy, we have started to plan a health and wellness program.	Extending (35.8%) In our department/ college/ school/ faculty of Pharmacy, we have a well-defined health and wellness program for STUDENTS and EMPLOYEES that covers SOME aspects of mental health, physical wellness, emotional well-being and spiritual nurturing.
Students, parents/ guardians, faculty, administrators and non-academic staff are satisfied with the health and wellness program of the department/ college/ school/ faculty of Pharmacy as a response to its transition to the flexible learning option.	Emerging (40.23%) A Health and Wellness program is implemented but some aspects are yet to be in place.	Engaging (30.2%) Stakeholders are satisfied with the HEI's Health and Wellness program.

required to be completed for licensure as a registered pharmacist. This also pertains to the practice of pharmacy in CHED-accredited pharmacy establishments as supervised by preceptors in the hospital, industry, community, institutional, public health units and health regulatory agencies, as part of the last year of the BSP curriculum. EPP in the BS Pharmacy program is usually undertaken in five (5) practice areas: hospital, community, industrial, institutional, regulatory & public health pharmacies (Table IX).

In subdomain 1, respondents reported that their mode of delivery for EPP is in the pre-emerging phase (39.53%) where students hardly ever have internship activities involving ICT technologies. Internship program is heavily reliant on traditional face-to-face methods. This is true since host training establishments (HTEs) or internship sites have also been restricted from accepting interns as part of the IATF guidelines. Furthermore, the EPP or internship programs are beset with problems with both HEIs and HTEs assuming responsibilities when interns become ill. It should be noted that during the initial stage of this study, EPP programs were suspended temporarily as HTEs and EPP preceptors also prepared themselves to deliver online EPP or internship programs. As both HEIs and HTEs have adjusted, respondents of the September 2022 follow-up study reported that they are now in the Engaging phase (39.6%) where a variety of internship activities involving varied ICT technologies are part of tasks given to the students.

In subdomain 2, respondents also reported that they were in the pre-emerging phase (40.23%) where assessments for student performance for internship activities exclusively relied on face-to-face observations and evaluations. This has evolved to the Extending phase (35.8%) in the September 2022 follow-up study where assessment practices that include the use of information and communication technologies for internship activities were used to collect, collate and analyze data. Interns used ICT to archive and share progress of their learning.

In subdomain 3, respondents reported that their EPP programs in the initial May 2020 study were in the pre-emerging phase

(42.53%) where grading of students' academic performance in the internship program was obtained exclusively by manual computations. During the follow-up study, results showed that the institutions have advanced to the Engaging phase (49.1%) where grading of students' academic performance in the internship program frequently made use of basic information and communication technologies such as but not limited to MS Excel.

Domain 6: Health and Wellness

This particular domain has been widely studied for its impact on teaching and learning during the pandemic. In the context of this study, this domain refers to the overall health and wellness initiatives of Pharmacy schools in the context of the new normal minimum health standards and flexible learning. This domain was studied according to two indicators on the establishment of an institutional health and wellness program and stakeholders' satisfaction with the health and wellness program as presented in Table X.

In the initial study, respondents reported being in the Emerging phase (37.93%), indicating the start of planning for a health and wellness program. Additionally, HEIs have begun developing the program, with some aspects still in progress (Emerging, 40.23%). In the follow-up study, HEIs progressed to the Extending phase (35.8%), with a well-defined program covering mental, physical, emotional, and spiritual aspects for students and employees. They further advanced to the Engaging phase (30.2%), showing stakeholder satisfaction with the program. Thompson and Porto (2014) emphasized the significance of recognizing wellness as a crucial student support service in adult online education [21].

Comparison of Learning Modalities Used during the Initial Study (May 2020) and Follow-up study (September 2022)

During the initial stages of transitioning to the flexible learning modality, most HEIs have conducted lecture classes online (94.3% of the respondents during AY 2020-2021 and 92.5% during AY 2021-2022). As HEIs gradually return to the

implementation of face-to-face classes for AY 2022-2023, lecture classes have resorted to blended learning (66%), full face-to-face (11.3%), limited face-to-face classes (9.4%) and purely virtual mode (7.5%).

For laboratory classes, the mode of delivery is through online classes (92.5% during AY 2020-2021 and 69.8% during AY 2021-2022). For AY 2022-2023, other modes of delivery of laboratory classes used were through blended mode (45.3%), full face-to-face classes (32.1%) and limited face-to-face classes (22.6%).

According to Kim, J (2020), blended learning, combining face-to-face instruction with online elements, will dramatically increase, especially during and after the pandemic [22]. This approach fosters active participation and integrates multimedia resources for personalized, interactive experiences [23]. The blend of traditional and digital tools enables students to learn at their own pace, receive immediate feedback, and develop critical skills effectively, leading to deeper understanding and improved academic performance, which has become increasingly crucial in navigating the challenges posed by the pandemic and adapting to post-pandemic educational needs.

EPP in the community setting in AY 2020-2021 was conducted in purely online mode (58.5%), online with catch-up plans at the school (22.6%) and online with catch-up plans at the host training establishment (HTE) (11.3%). This was in contrast with the EPP in AY 2022-2023 where the primary modes of delivery were a mixture of online with longer onsite deployment with HTEs (37.7%), purely onsite deployment with HTE (32.1%) and online with catch-up plans at HTE (13.2%).

EPP in the hospital setting in AY 2020-2021 was conducted in purely online mode (49.1%), online with catch-up plan at HTE (18.9%), online with catch-up plans in school (15.1%) and purely onsite deployment at HTE (9.4%). On the other hand, the modes of EPP during AY 2022-2023 were primarily purely onsite deployment with HTE (47.2%), online with longer onsite deployment at HTE (30.2%) and online with catch-up plan at HTE (11.3%).

EPP in the industrial setting in AY 2020-2021 was conducted in purely online mode (66%) and online with catch-up plans in school (11.3%). During AY 2022-2023, this has shifted to online with longer onsite deployment with HTE (34%), purely onsite deployment with HTE (30.2%), online with a catch-up plan at HTE (18.9%) and purely online (13.2%).

EPP in the public health and regulatory setting in AY 2020-2021 was conducted in purely online mode (58.5%) and online with catch-up plans in school (17%). With restrictions still being observed by public health and regulatory HTEs which

include the Philippine Food and Drug Authority (FDA) and DOH, it was observed that the majority of the EPP programs were still conducted online (30.2%), purely onsite deployment with HTE (20.8%), online with longer onsite deployment with HTE (18.9%), and online with catch-up plan in school (9.4%).

EPP in the institutional setting in AY 2020-2021 was conducted in purely online mode (66%) and online with a catch-up plan in school (11.3%). During AY 2022-2023, modes of delivery were purely online mode (33%), online with a catch-up plan in school (16.7%), online with a catch-up plan at onsite HTE (14.8%) and purely onsite with HTE (14.8%)

As the restrictions during the pandemic were lessened, respondent schools took every opportunity to conduct in-person classes or onsite experiential pharmacy practice exposure or catch-up plans. When students attend in-person classes, they have a better opportunity to participate in hands-on lessons. The best way for them to learn is by performing it in front of their instructors, who can immediately provide the necessary corrections to their work. This allows the students to learn more since learning by doing is among the best ways to learn. Students' academic development will also improve as they receive the support they need to attend in-person classes [24].

Best Practices among Philippine Pharmacy Schools

Some respondents believed that the flexible learning modality offered opportunities for the borderless integration of industry experts and practitioners. Local and international pharmacy professionals were able to deliver lectures to students through the virtual mode. In addition, the flexible learning mode facilitated adaptability and creativity among industry and organization partners, institutions and their administrators, teachers, staff, and learners. Communication and collaboration among stakeholders were also strengthened using educational technology tools. According to Mohamed, MHN et al. (2020), the sudden transition brought about by the pandemic pushed many institutions to use strategies that had never been tried before to meet the required development of necessary skills and competencies among pharmacy undergraduate and graduate students [25]. The Commission on Higher Education (CHED) seems confident in its prescribed flexible learning mode. Stressing the "Spirit of Bayanihan," or the unique Filipino value of communal unity, De Vera (2020) emphasized that ways must be found to cope with the pandemic and ensure continuous learning as one [4].

Challenges and difficulties encountered in the Flexible Learning Modality

A huge problem among both students and faculty members alike is particularly the availability of technological resources

and access to internet connectivity. Not all students can attend their classes due to problems with Internet connectivity. In addition, both students and faculty members report that hard skills and soft skills development are difficult to establish due to a lack of hands-on supervision and social interaction.

The flexible learning mode for EPPs is also considered a challenge due to the lack of concrete guidelines on certain areas such as the grading system and internship fees. In addition, learning issues and concerns of students during FLO must also be explored through a separate study. Rahim & Choo (2021) mentioned in their research study that first year Pharmacy students in a school in Malaysia felt overwhelmed and experienced stress, so interventions must be made to support and guide the students [26].

CONCLUSION

Using the PACOP ACTS-Resilience Framework, the study suggests that Philippine Pharmacy schools demonstrated absorptive capacities (strategies to achieve stability), adaptive capacities (strategies to achieve flexibility) and transformative capacities (strategies to achieve sustainable structural change). By working collaboratively with their respective stakeholders and other academic institutions, Pharmacy HEIs can effectively transition initially to the flexible learning modality and subsequently, return to the gradual implementation of face-to-face classes. By providing opportunities for inter-institutional collaboration and conducting research to make data-driven decisions in establishing guidelines, PACOP becomes instrumental in synergizing the efforts of the academic community and pharmacy practitioners in general. Moving forward, there is still a need for recovery interventions, revision of the PACOP recommending guidelines, establishing measures of sustainability and embedment of CQI in the processes, and development of official guidelines in the implementation of the EPP in the context of the new curriculum.

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