A Thematic Analysis of UPOU's Virtual Roundtable Discussions (VRTDs) on the University of the Future

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Abstract

The impact of the Industrial Revolution 4.0 (IR 4.0) on education has been widely discussed in recent literature. Referred to as Education 4.0, teaching and learning in the future is seen to be largely influenced by advances in technology brought about by IR 4.0. This has prompted the education sector to evaluate the educational system and envision its future.

Like most other educational institutions, Philippine higher education institutions (HEIs) are challenged to rethink and retool themselves for the "new normal" and future scenarios. University of the Philippines Open University (UPOU) embarked on a participative, reflective, and forward-thinking discussion series through virtual roundtable discussions (VRTD) on the University of the Future (UoF).

This study presented the collective thinking of UPOU's constituencies as captured in the VRTDs conducted from November 2020 to January 2021. A thematic analysis was conducted to surface themes arising from the transcript of five (5) VRTDs on the UoF conducted by UPOU with its faculty, students, staff, and alumni as participants. To contextualize the emerging themes, these were superimposed on the Open and Distance e-Learning (ODeL) subsystems.

The two arising themes were radical transformation and peripheral adjustments. Both refer to the different ways in which the UPOU can transform into a UoF, emanating from the VRTD discussions. An overarching theme of seamlessness was further abstracted. In becoming a UoF, a seamless UPOU is envisioned to be permeable and porous enough to be equal in prestige and purpose with its surroundings.

Keywords: *university of the future, ODeL, ODeL subsystems, UPOU, thematic analysis*

Introduction

Technological advances have historically found their way to influence how work is done, and consequently, how learning takes place (Demartini & Benussi, 2017). This is evidenced by how society has been influenced by key innovations and discoveries from past centuries, such as the steam engine, electricity, and computing (Elayyan, 2021). Today, the world finds itself in the middle of yet another revolution— Industrial Revolution 4.0 (IR 4.0). This time, the change is amongst emerging technologies by the names of big data analytics, artificial intelligence (AI), cloud computing, and faster mobile connectivity. IR 4.0 is largely composed of "smart" technologies that integrate and hyper-connect systems and data for better-coordinated functions in the physical, digital, and biological spheres (Schwab, 2016).

The impact of IR 4.0 on education has been widely discussed in recent literature (Koul & Nayar, 2021; Tanriogen, 2018). The World Economic Forum (2018) projects that as machines take over routine work, educational institutions will have to ready a nimble workforce that embraces learning as a continuous process. It is through this background that Education 4.0 (Educ 4.0) has emerged. This new model aims to respond to the evolving needs of IR 4.0, especially concerning higher education. Here, learners are at the center of a transforming educational universe. Thus, personalization of the learning experience and lifelong learning become core features in Educ 4.0 as a way to address uncertainties continually presented by a still emerging IR 4.0 (James, 2019).

It is projected that universities will be further enabled by Web 4.0— a new era where a benefitting relationship exists between humans and machines (Salmon, 2019). Powered by IR 4.0 tools and Web 4.0, universities are expected to offer personalized learning experiences (Ovinova & Shraiber, 2019), emphasizing systems and design thinking in the curriculum delivered via authentic, effective, and efficient modalities (Salmon, 2019).

To ensure its graduates will thrive in a still unknown and uncertain future, universities will have to create an environment where learners are given every chance to own and master the learning process. Ra and colleagues (2019) refer to this as "learnability" (p. 26). They also suggest that a way to facilitate this is through a "learning society" (p. 34), where quality learning opportunities are available anywhere and anytime to anyone (Ra et al., 2019). To date, there have been some attempts to put forward the concepts of learning society, as seen in the work of Bonfield et al. (2020), who presented an overview of how various universities have risen to this challenge by revolutionizing program offerings, design, delivery, and support with the learner at the core of the innovations. However, even with the innovations within reach, the transition to Educ 4.0 can be delayed by factors external to the university (Qureshi et al., 2021). Further, if universities are to ready their learners for IR 4.0 and embrace Educ 4.0, an overhaul of the existing systems anchored on tradition is necessary (Pogorelskaya & Várallyai, 2020).

Objectives

This research intended to capture the collective thinking of University of the Philippines Open University (UPOU) constituencies as revealed in the virtual roundtable discussion (VRTD) series on the University of the Future (UoF) conducted from November 2020 to January 2021. Specifically, the study identified emerging themes from the VRTDs and looked into the challenges to reconfiguring open and distance e-learning (ODeL).

Literature Review

Future Universities

Literature presents global discussions on the future of universities. These discussions are grounded by changes in the educational landscape as affected by various factors. Understanding the conceptions of the future of universities requires insights into the present context, that is, the 21st century, coupled with "modest" predictions (*first logic of prediction*; Bridges (2000). Nevertheless, in addition to the first logic of prediction, it would also be important to consider looking into preceding notions to contextualize the present scenarios. Forecast of the future universities may not be limited to the structure but may have branched out to other key aspects of the educational system such as degree/course, instruction, student, among others.

In the mid-to-late twentieth century, technology was seen as a major contributor of the educational landscape adjustments in the future (Johnston, 1998; Peston, 1979; Suchodolski, 1974), among other drivers of change (e.g., environmental, social changes). It is expected that technology will play a major role in the educational landscape of the 21st century wherein, Bridges (2000) reported the "profoundly disruptive potential of web-based learning" (p.1) in the future of higher education curriculum.

Such emphasis on information and communication technology (ICT) integration has successfully positioned technology-driven educational systems, such as open and distance learning (ODL), e-learning, and virtual universities, at the forefront of future universities. Literature asserted the role of these technology-driven educational institutions in mapping out the UoF (Conway, 2020; Daniel & Kanwar, 2008; Halloran & Friday, 2018; Long, 2013; Sertu, 2018; Wolf, 2001). There is much contention on whether such education systems will replace the brick-and-mortar setup. In some cases, adjustments are being adopted as online learning is seen as an alternative solution to campus-based learning in terms of widening reach and infrastructural limitations (Long, 2013). Sertu (2018), on the other hand, proposed that the UoF will be a "hybrid of the old university model and emerging models" (p. 2; see Minerva Project).

Nevertheless, several conceptions on the UoF in technology-driven educational environment highlights electronic means of teaching and learning, learning environment, and assessment (Wolf, 2001); online learning (Long, 2013); multi-institutional and multi-credit qualifications (Peters, 2016); unbundled traditional degree programs, rise of freelancers and network of universities (Halloran & Friday, 2018); massive open online courses (MOOCs) (Conway, 2020; Guri-Rosenblit, 2019; Sertu, 2018); focus on marginalized learners, wide development and use of open educational resources (OERs), academic and student support systems, and partnerships and collaborations with other HEIs, corporate, and work worlds (Guri-Rosenblit, 2019); and personalization of learning experiences and availability of learning options (Conway, 2020). Notably, even the concept of lifelong learning will be largely influenced by ICT (Wolf, 2001).

Meanwhile, there are also configurations in terms of future pedagogy and instruction. The future of delivery in online education looks into the potential of stand-alone instruction and online multimedia environments. The former advocates student-to-content (non-human interaction) in instruction, while the latter encourages the use of "well-designed Internet-based instructional models" (Gaytan, 2007). Witthaus et al. (2016) focused on the future pedagogy in an online and blended higher education environment. Through the FUTURA project, Future of University Teaching: Update and a Roadmap for Advancement, future teaching should consider technological aspects, collaborative partnerships and services disaggregation, student engagement, flexibility and responsiveness to learners' needs, curriculum's real-world relevance, and learning process contextualization (Witthaus et al., 2016).

In this digital age, technology-driven institutions need to leverage their technological affordances as the future of education is seen to be largely influenced by technological advancements. The reviewed articles highlight that universities in the future will have to give more emphasis on the digitization of curriculum and pedagogy, personalization, and contextualization tailoring the learners' varied and individual preferences, continued pursuit of lifelong learning through ICT, exploration of unbundled degree programs, and the network structure of universities. Even with these numerous conceptions, literature often focuses on separate areas of an educational system (i.e., structure or pedagogy alone). A holistic approach to the topic may be quite challenging due to its complexity, but this will aid readers in visualizing the UoF as a whole.

Systems Thinking in Education

In a review of Laszlo and Krippner (1998) on the origins, foundations, and development of systems theories, seminal work on the General Systems Theory (GST) takes its roots from Ludwig von Bertalanffy during the first half of the 20th century wherein he laid down the concepts of the GST as provided below (p.5).

> (1) There is a general tendency toward integration in the various sciences, natural and social. (2) Such integration seems to be centered in a general theory of systems. (3) Such theory may be an important means for aiming at exact theory in the nonphysical fields of science. (4) Developing unifying principles running "vertically" through the universe of the individual sciences, this theory brings us nearer the goal of the unity of science. (5) This can lead to a much-needed integration in scientific education.

The systems theory, which started in the field of organismic biology, later on, extended its application to humanities. Multidisciplinary application of systems approach is possible because it is used as a general form of inquiry that allows investigation of complex interactions, whether intrapersonal, interpersonal, intergroup, and human/nature, in a holistic sense rather than individually (Laszlo & Krippner, 1998).

Proving the capabilities of this perspective for interdisciplinary application, Banathy (1996, as cited in Daniel, 2006) worked on systems design in the educational context and stated that the strong application of systems approach in education positions us "to explore and characterize the system of our interest, its environment, and its components and parts in a different way" (p. 3). Pahl and Richter (2009, as cited in Pogorelskaya & Várallyai, 2020) mentioned further that education as a system could be viewed as a whole while noting its environment-system interaction and its various sub-systems components.

The definition of "systems thinking" has been interpreted in a variety of ways across disciplines. In a comprehensive study by Arnold and Wade (2015), the following definition of systems thinking was proposed and was adopted in this study: "Systems thinking is a set of synergistic analytic skills used to improve the capability of identifying and understanding systems, predicting their behaviors, and devising modifications to them in order to produce desired effects" (p.675). Systems in this study are characterized as "groups or combinations of interrelated, interdependent, or interacting elements forming collective entities" (p.675). Arnold and Wade also proposed a "systems test" that comprises completing these three conditions: (1) function, purpose, or goal, (2) elements, and (3) interconnections to be recognized as a system.

In interpreting and visualizing systems, models, which are simplified versions of a system, are used to understand and forecast its future behavior. With the use of models, the systems can be looked into to be able to clearly understand, describe, and analyze them. In delineating the scope of a system, one must first define its boundary, which means that there must be a selection of the entities, processes, and interactions to be included inside and outside the system. The entity outside the system is then called the "environment," which is also known as the "supersystem" within which the focal system operates (Garcia, 2018).

In the case of human and conceptual systems such as the educational system as a unit of analysis, the boundary line between the system and its environment is not as well-defined as other physical

systems (Laszlo & Krippner, 1998). Moreover, educational systems were also considered as open systems, which were described by Geoffrey (1983, as cited in Daniel, 2006) as "nests of relations that are sustained through time by their relations and by the process of regulation; they depend on and contribute to their environment; and they operated as wholes, but are also parts of larger systems, and their constituents may also be constituents of other systems" (p. 4).

All this implies that in exploring the design of educational systems, the focal system must be clearly defined and its nature as a system must be considered. Three (3) system models in viewing educational systems were developed by Banathy (1996, as cited in Daniel, 2006) that include (1) systems-environment models, (2) function-structure models, and (3) process-behavioral models.

Open and Distance e-Learning system

As an educational system, ODeL comprises different subsystems. In the context of UPOU, system components are similar to that of the DE subsystems mentioned in Moore and Kearsley's (2012) DE systems.

One of the comprehensive discussions of the ODeL system was in 2015 during the National Conference on Open and Distance eLearning. The conference covered four subsystems namely, course design, teaching and learning, student support, and organization and management (UPOU, 2017). The recent version of the system, which the study adopted, was explained by Garcia (UPOU, 2020) to include course delivery as the fifth subsystem.

In this section, ODeL was viewed as a system that is composed of five interrelated subsystems, with the management subsystem serving as the integrator. Compared to the DE system, where the ODeL system was derived, the difference lies in the accompanying practices of each subsystem. The following includes the distinguishing characteristics of each subsystem, as stated by Garcia (UPOU, 2020).

Course design subsystem. This covers the learner profile and the design and development of the course and course material (e.g., self-contained course packages) using an unbundled approach. Specifically, it involves aligning the course and the learning outcome based on the profile of learners, connecting the course pathways in terms of learning outcomes, identifying appropriate assessment tools, and breaking down topics for a comprehensive approach.

Course delivery subsystem. Courses can be delivered via print, online or web-based, and others (e.g., audio, video, computer-based, combination). The organization's mission and vision, target learners, cost, and availability of technology are the variables that affect the kind of delivery systems the institution will adopt. The type of delivery system determines other factors that must be considered. For example, print-based delivery systems consider printing materials, courier or postal services, warehousing and inventory management of the print materials, whereas online/web-based delivery systems ensure connectivity for all its academic and support staff and accessibility of learning materials.

Instruction subsystem. This subsystem centers on the role of teachers in the learning process (e.g., student advising, giving feedback), among other functions of the instructor (e.g., administrative). For distance education (DE) institutions, creating an effective student-teacher and student-student interaction, and evaluating the effectiveness of the course design are crucial.

Student support subsystem. For this subsystem, types of services, delivery practices, and support staff competencies are highlighted. Services may include tutorials, counsels, library services, helpdesk, technical support, study or learning centers development, and admission concerns accompanied by a support staff system equipped to facilitate these services.

Management subsystem. Unifying these subsystems is the management subsystem. This subsystem connects all components by undergoing: 1) needs assessment and prioritizing, 2) resource allocation and administration, 3) personnel recruitment and training, 4) monitoring and evaluation, 5) policymaking, and 6) implementation, monitoring, and evaluation of a quality assurance (QA) system in ODeL. Ensuring the support of the stakeholders is crucial in all aspects of the management subsystem. This participative nature stresses the role of management in uniting all subsystems.

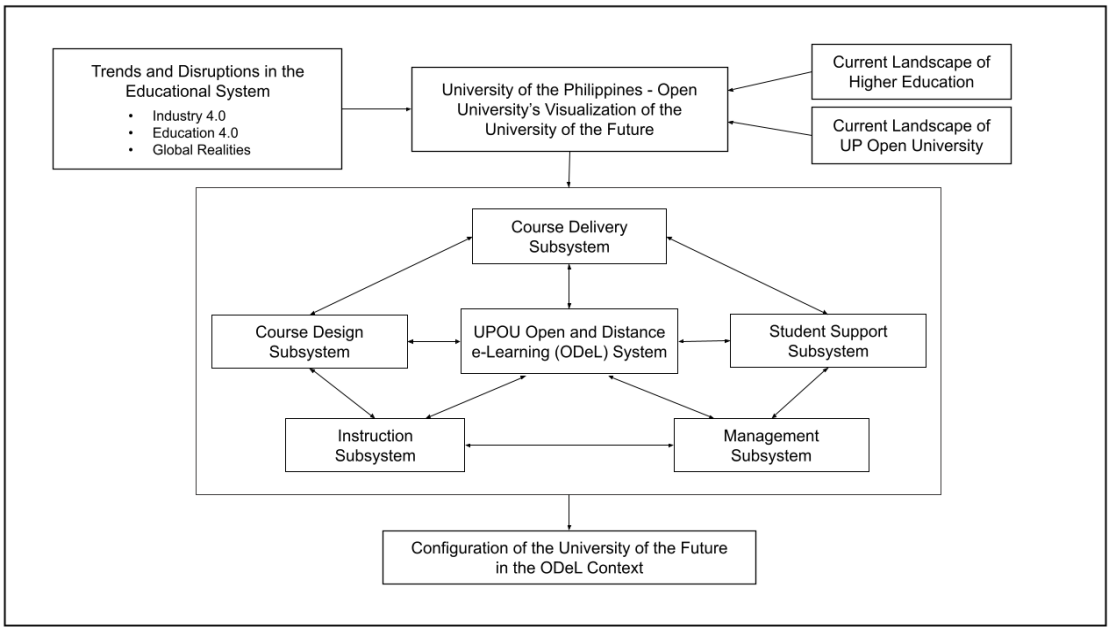
Systems Design of ODeL

Banathy (1992) pointed out that "systems design is the only viable approach that enables our communities to work with constantly evolving new realities to create and recreate their systems of education in a changing world" (p. 41). Building on the conceptions presented in the VRTDs and what the researchers infer, systems design illustrates a framework that will guide the whole research study.

To synthesize the previous sections, components from the reviewed literature served as elements in the study framework to inform the overall configuration of UPOU as the UoF using an ODeL system. Literature suggests considering drivers of change in the educational landscape as well as the current context in the educational system. To capture a holistic view, the ODeL subsystem was used to cover all areas in the education system of UPOU. Understanding the interconnections between these elements is crucial and regarded as the first step in systems thinking (Arnold & Wade, 2015). Hence, the results should point out the interconnections within the ODeL subsystem. Figure 1 illustrates the interaction of the ODeL subsystems as it relates to the overall configuration of UPOU as the UoF.

Figure 1

Study framework in designing the UoF configuration



Trends and disruptions in the educational system were primarily driven by technological innovations that caused the development of Industry 4.1 and Education 4.0. Contributing to this are the global realities such as climate change, globalization, and socio-political factors. Compounded by the current landscape of higher education to which the underlying systems of the university rests upon, these concepts altogether contribute to the discourse of what a future university may look like.

As seen in Figure 1, at the center of this study is the ODeL systems conceptual model adapted from Garcia (UPOU, 2020) that illustrates further the interrelationships between the subsystems comprising the ODeL system of UPOU. These five interrelated subsystems cover the teaching, learning, and administrative components of an educational institution. At the course levels are design and delivery components of the content and how the content is administered. Teachers and learners, as the main actors in the teaching and learning process, constitute two subsystems. The former is emphasized through the roles and functions it assumes as well as the support needed, while the latter highlights the kinds and ways to assist their learning with complementary support to the service provider staff. Lastly, at the administrative level is how the other four subsystems are strategically planned, implemented, monitored, and benchmarked to attain the best-expected outcome of these subsystems. The interaction and/or overlap between the components of each of these subsystems will inform the overall configuration of the ODeL system of UPOU. Overlapping categories were considered based on their direct impact on the subsystem.

Research Methodology

Research Design

The research focused on the participants' viewpoint on ODeL from the five VRTD series on the UoF. Thematic Analysis (TA) was the chosen methodology to identify emerging themes on the future of ODeL. TA is a widely known research method for identifying, analyzing, and reporting patterns within data which is known as "themes" (Braun & Clarke, 2006). Given its flexible nature, it can also serve as a tool to surface an intricate amount of data.

To generate themes, recording units were gathered from the UoF VRTD transcripts. Recording units or coding units, as defined by Krippendorf (2004), are the units that are identified for individual description, transcription, recording, or coding. Interpretive and inductive approaches were used to reveal and analyze meanings from the transcripts. More so, the study was guided through a framework to provide utilization to the meanings.

Participants and Background of Researchers

UPOU VRTDs consisted of the faculty, students, staff, and alumni as participants. The researchers consisted of project staff, faculty, and attendees of the fora. At least one of the researchers was present during the forum.

Data Analysis

In this study, the researchers conducted descriptive and *in vivo* types of coding to identify the emerging categories from the VRTD transcripts (see Appendix A). The VRTDs were transcribed by the researchers. As for the generation of each code, the researchers conducted the solo coding of each VRTD Transcript. Consultation among the team after solo coding is one way of verifying findings (Saldaña, 2013). All codes from the five transcripts were grouped under the five ODeL subsystems.

To ensure the utility of results, systems design and ODeL subsystems were used for further interpretation. The consolidated codes under each subsystem were reviewed and categorized individually and as a team into sub-themes. Maps were then created to depict relationships between ODeL subsystems and categories. Overarching themes were identified through making sense of the sub-themes and categories.

Data Privacy and Confidentiality

The VRTD participants were informed that the sessions were being recorded as part of UPOU's initiative on UoF, especially in the conceptualization of the University of the Future in UPOU. Hence, the sessions were recorded with their consent.

For this study, the audio-video recording that was obtained from the organizing team was encoded into textual transcripts. The texts analyzed were anonymized and were not directly attributed to the speaker/attendees. No sensitive information was drawn from the participants of the VRTD series.

All data are stored in Google Drive hosted by the university email. The sharing settings of Google documents and sheets were restricted and only accessible to the researchers. All data obtained from participation in the study were treated with the utmost confidentiality and will not be released by the researchers to any third party.

Results and Discussion

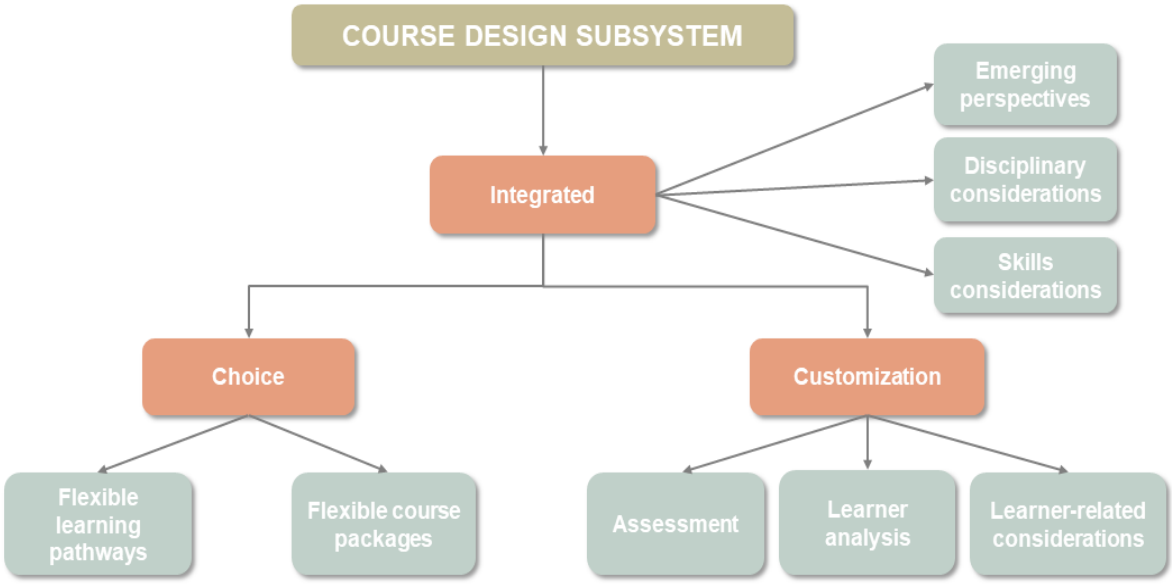
This section presents the latent content gathered from the VRTD transcripts. The researchers analyzed the surfaced meanings using the ODeL subsystems framework. First, categories and sub-themes for each subsystem that are embedded in the design were elaborated. Lastly, the configuration of UPOU as a UoF was discussed through the emerging and overarching themes.

Course design subsystem

The course design subsystem, as shown in Figure 2, is composed of eight (8) categories subsumed under three (3) sub-themes arising from the codes for this subsystem. In a nutshell, the researchers found that this subsystem should be integrated enough to offer choice and customization in a UoF setting.

Figure 2

Thematic map of the course design subsystem



The VRTD participants pointed to a common ground for creating enough options to customize learning programs. To achieve this, participants also recognized that this subsystem must be integrated in such a way that relevant stakeholders are engaged to enable such features. The stakeholders being referred to here include the industry, the university, and the academic fields.

In terms of program offering, the participants envisioned more flexibility in how current degree programs are offered and operated in a UoF. This was evident in the participants' call for stackable credits, recognition of prior learning, and micro-credentials. Such transformations also have implications for course materials and course packages. Further, the element of choice and customization becomes more apparent when programs recognize the unique context of each learner.

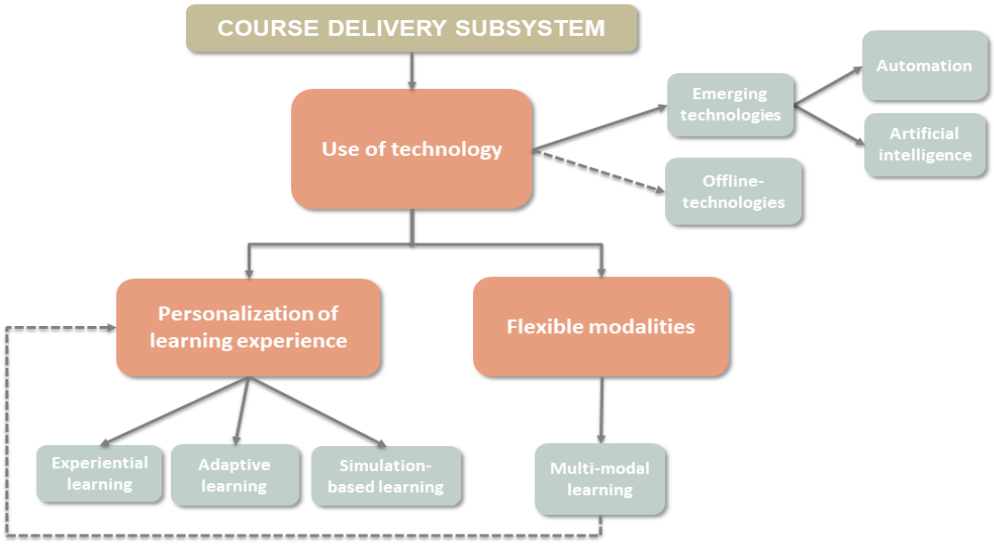
On the other hand, participants also stressed the importance of a pluridisciplinary and transdisciplinary approach to designing the curriculum. This implies more cooperation among disciplines as opposed to working in silos. Moreover, the literature suggests that this is necessary if universities aim to prepare an IR 4.0-ready workforce. In such workforce, communication, critical thinking, innovation, sustainability, and social skills are as important as technical expertise in the future (Bridges, 2000).

Course delivery subsystem

Figure 3 shows the conceptions on this subsystem which emphasize modern technologies influencing the approaches/methods for flexibility and personalization of the learning experience. This includes the use of emerging technologies such as AI and automation, which are associated with IR 4.0. An opposing view was also mentioned to include the use of offline technologies.

Figure 3

Thematic map of the course delivery subsystem



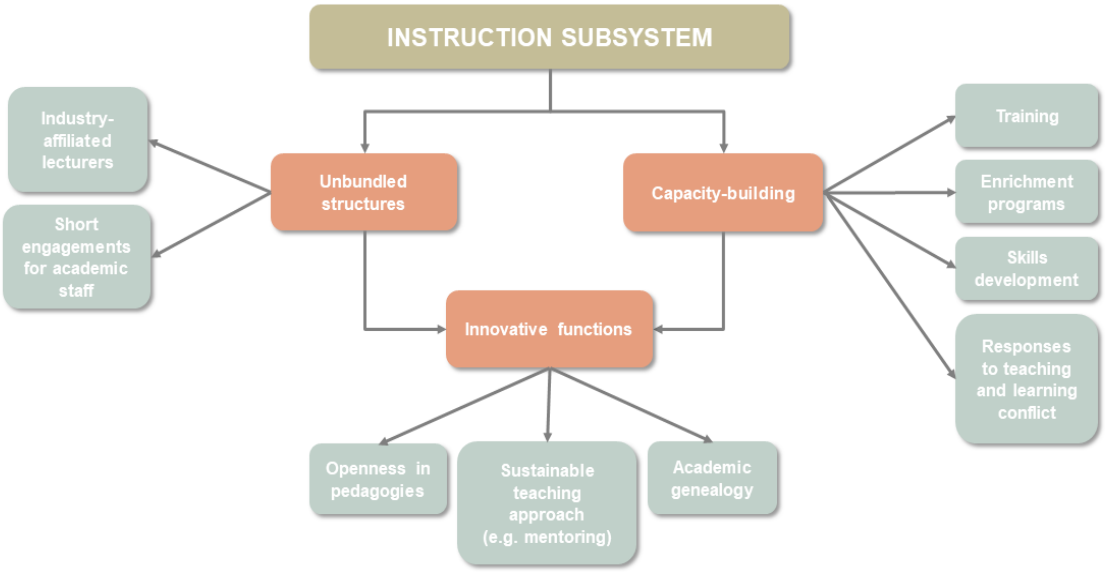
The use of technology in course delivery branches out to integrate with personalization of learning experience (e.g., experiential learning, simulation-based learning) and flexible modalities.

Instruction subsystem

As presented in Figure 4, the VRTD participants highlight three (3) main points in conceptualizing instruction in the university of the future.

Figure 4

Thematic map of the instruction subsystem



First, capacity-building should be strengthened. It is imperative that there must be continued support mechanisms such as training, enrichment programs, skills development, and responses to teaching and learning to equip the academic staff to respond to changes in the landscape of the UoF. Second, the participants proposed an unbundled structure that involves industry-affiliated

lecturers and short engagement of academic staff. This proposed structure would have an implication on tenure. The former relates to lifelong opportunities formed involving practitioners and non-practitioners. On the other hand, the latter is described as an observation/trend that is currently happening in the university. Combining these two would result in innovative functions in the instruction, which include: (1) openness in the pedagogy, (2) sustainable teaching approach such as mentoring, and (3) academic genealogy usage that would serve as the basis of future discipline.

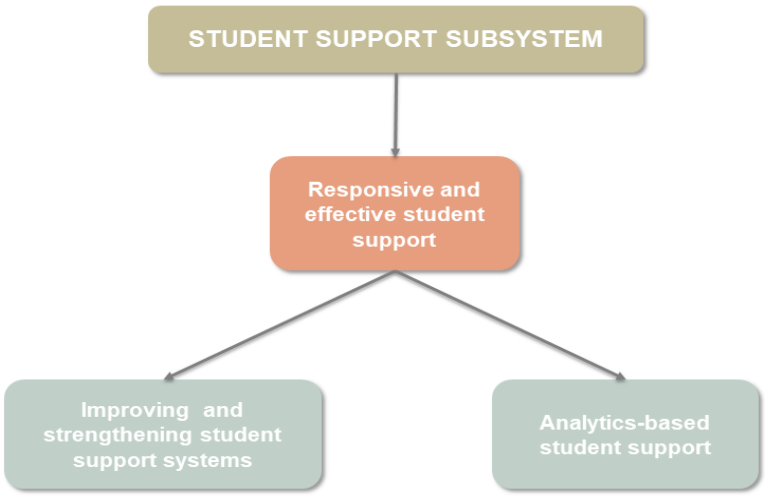
Looking at the role of ODeL teachers specified in the subsystem, these configurations are directed towards the pedagogical, technical, and social aspects.

Student support subsystem

There are two categories under one sub-theme for this subsystem (see Figure 5). It is worth noting that the researchers only worked on a few codes when analyzing this subsystem. This may be due to the smaller representation from the focus of this subsystem— students—compared to other stakeholders.

Figure 5

Thematic map of the student support subsystem



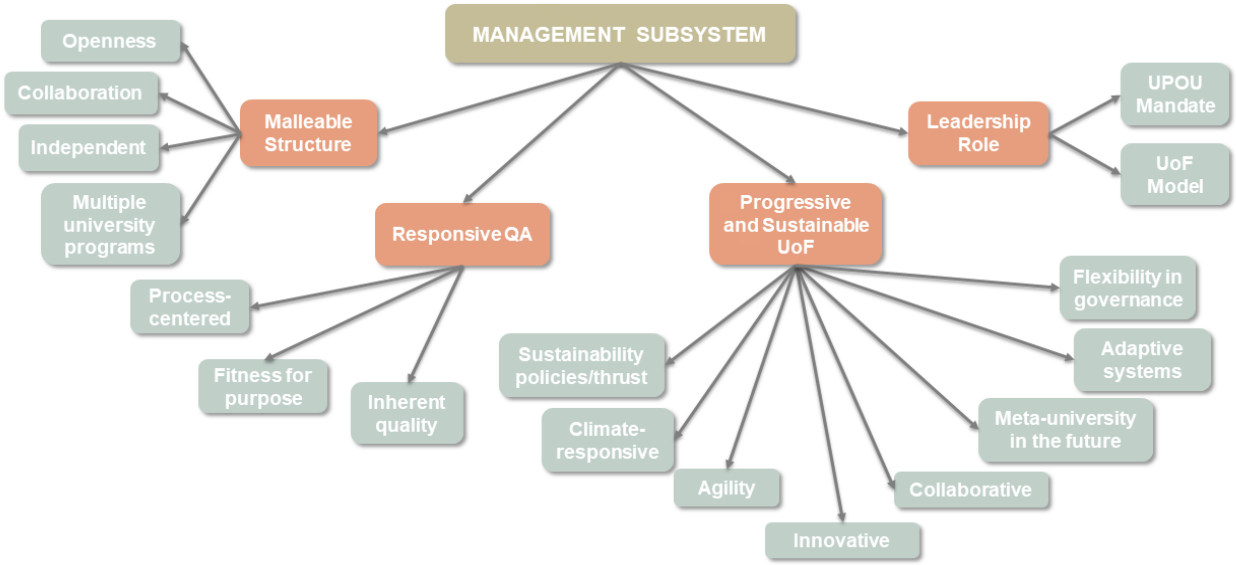
Generally, this student support subsystem was visualized to be responsive and effective. The researchers were able to create this sub-theme from the dominant categories of strengthened and analytics-based student support.

Management subsystem

Much of the discourse about the UoF brings about implications to the management subsystem, which acts as the "integrator" of all the other subsystems in an ODeL institution. Figure 6 shows that four (4) sub-themes have been distilled from the codes under this subsystem. It stresses that going beyond traditional boundaries while being guided by its roles and mandate produces a progressive and sustainable UoF.

Figure 6

Thematic map of the management subsystem



VRTD participants call for a malleable structure for UoF characterized by openness, collaboration, multiple university programs, manpower considerations, trifold-functions, among others. This entails the possibility that major functions of UPOU in the UoF will be forged by the dynamic environment where it belongs. Frequent mention of the UPOU's mandate and role in the UoF accounts for the sub-theme on the leadership role. If these qualities were possessed by or at least are being acquired by UPOU, then it positions itself as a leader in the pursuit of UoF. Another sub-theme is the need for a responsive QA system, albeit the question of its relevance in the UoF. The categories reveal that participants are hoping for a process-centered, fit-for-purpose, innovative, and inherent QA.

A progressive and sustainable UoF, as verbalized by the participants, includes concepts such as meta-university and pluridisciplinarity. Undoubtedly, when these concepts are adapted to practice, it pushes towards the direction of the unexplored concepts of UoF.

Recognizing this shift will then lead to major changes. In relation to the elements of the management subsystem, needs assessment and prioritizing will be influenced by a responsive QA. Monitoring and evaluation are necessary for a responsive QA and progressive and sustainable UoF. Lastly, policymaking will play an important role in terms of molding a malleable structure.

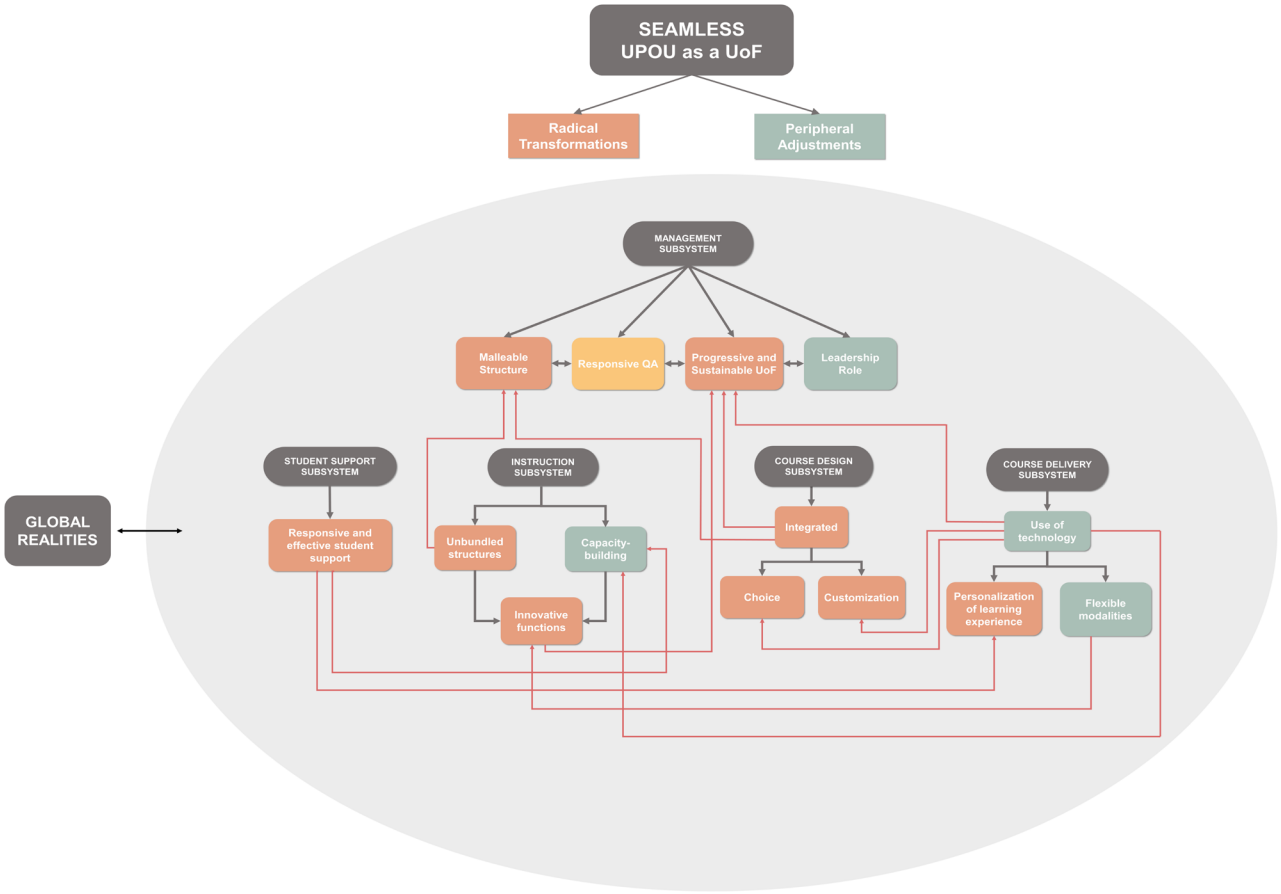
Themes

In efforts to answer the general research question, the researchers reflected on the surfaced sub-themes. Previous discussions point to a vision of flexibility and responsiveness. Thus, an overarching theme and two themes were produced from further abstractions.

Figure 7 presents the superimposed sub-themes, themes, and overarching themes into the ODeL subsystem considering the guiding framework (see Figure 1).

Figure 7

UoF configuration of the UPOU



In the course design subsystem, the sub-theme "integrated" also constitutes the "malleable organizational structure" sub-theme, where collaboration and openness are central, envisioned in the Management subsystem. Lastly, this integration provides another step towards becoming a "progressive and sustainable UoF." On the other hand, both the sub-themes of "choice" and "customization" reflect the emphasis on the "use of technology" found in the course delivery subsystem. As previously discussed, the former sub-themes depend on the technologies maximized in the University.

Analyzing the course delivery subsystem, "flexible modalities" imply that "innovative functions", such as mentoring, are encouraged and taken up in the instruction subsystem.

Integral to having a responsive and effective student support system are mechanisms to prepare students for "personalization of learning experience" and enable ODeL teachers to guide and facilitate the students' learning process.

In terms of the instruction subsystem, the proposed unbundled structure would require corresponding modifications to the malleability of the structure. Capacity-building on the use of technology in delivery learning is also being suggested. Innovative functions channel and inform a progressive and sustainable UoF under this subsystem.

Under the management subsystem, responsive QA is highlighted to be an umbrella covering all aspects (sub-themes) of this UoF configuration. This emanates from the process-based and largely intrinsic notion of quality proposed by VRTD participants.

Radical Transformation and Peripheral Adjustments

The two emerging themes were radical transformation and peripheral adjustments. Both refer to the different ways in which the UPOU can metamorphose into a UoF, emanating from the VRTD discussions. The latter asserts that the included sub-themes pertain to minor changes that UPOU must undertake to transition to a UoF. Use of technology, flexible modalities, capacity building, responsive QA, and leadership role need only be emphasized, improved, and strengthened. These imply that UPOU should maximize available and better technologies to allow a multimodal course delivery.

Consequently, UPOU staff performing teaching, research, public service, and administrative duties should have enough opportunities to develop their digital know-how, among other relevant skills necessary to build and sustain a future-proof university workforce. All these peripheral changes are expected from UPOU with its leadership role in ODL in the country. As such, these peripheral adjustments are sufficient conditions for the UoF configuration of UPOU.

On the other hand, radical transformation houses most of the sub-themes identified. This theme pertains to the overhaul of existing practices and processes to foster an enabling environment, making room for the envisioned revolutionary changes. The changes are claimed to be revolutionary because the visions established in the sub-themes question current dogmas. Specifically, advocating for unbundled structures and innovative functions in the instruction subsystem would mean scrapping tenure and de-loading faculty members while addressing the concern of limited manpower. Offering choice, customization, personalization, and effective student support will entail major changes in technology adoption and how the University engages with its stakeholders and vice versa. This is especially crucial for the student body and the way the University supports its unique learning needs. Finally, envisioning a malleable organizational structure to host a progressive and sustainable UoF will require revamping current rigid and residential-based systems. Hence, the VRTD participants deemed these radical transformations as necessary conditions to rethink and retool UPOU as a UoF.

Seamlessness

The concept of seamlessness surfaced as an overarching theme from the VRTDs. The word "seamless" pertains to "smooth and without seams or obvious joins" when taken literally (Merriam-Webster, n.d.). The concept is used to suggest continuity but not pertaining to an extension of current practices and processes. Instead, the researchers meant to explain the idea in which a free-moving and beneficial exchange happens effortlessly.

Using the concept of seamlessness to configure the UPOU as the UoF implies that virtually no boundaries exist within the University or beyond it that may compromise this continuity and harmony, whether that be political, economic, and/or social. In becoming a UoF, a seamless UPOU is envisioned to be permeable and porous enough to be equal in prestige and purpose with its surroundings. Otherwise, the subsystems, taken individually and as a whole, may not truly transform into a UoF. Thus, UPOU will have to level itself with the rest of society—its beneficiary—to effect the changes necessary to thrive in the future. Any HEI should put an end to privileged seclusion if they wish to remain relevant in the future (Salmon, 2019).

For instance, the University should partner with the industry, not only for employment opportunities of its students, but also to align program curricula and program packages with the

emerging needs of the time and ensure that technologies are exhausted for the benefit of its students and staff.

Additionally, this overarching theme underpins the recurrent mention of uncertainty when VRTD participants talk of the temporal future. While trends and disruptions can give indicators as to what and how the future will look like, it can never be fully known. As such, the sub-themes refer to an ODeL system agile and resilient enough to handle the vague yet definite reality of uncertainty. Consequently, seamlessness is also evoked to put forward the idea of a minimally structured, if not amorphous, UoF. Rigid structures are simply boundaries—divisions—in a seamless UoF with mechanisms ready, flexible, and resilient enough to respond to disruptions. It has been suggested that a highly rigid structure cannot exist in the dynamic educational landscape of the future (Bridges, 2000; Milian & Davies, 2020). This rigidity has proved detrimental to unexpected disruptions, with the Covid-19 pandemic as a case in point. Even ODeL institutions such as the UPOU had to reorganize previously fixed matters (e.g., academic calendar) to accommodate learners serving at the frontlines of the pandemic. Hence, a seamless UPOU is configured as a way to embark on uncertain futures.

Rising to the UoF Challenge

In conclusion, IR 4.0 and Educ 4.0 are expected to continue driving changes in higher education, specifically, in ODeL. Flexibility, sustainability, collaboration, and technological use are some of the key characteristics of the envisioned UPOU in the future. The VRTD participants stress the need for a seamless UPOU either through peripheral adjustments or a radical transformation in becoming a UoF.

The authors recommend that the University begins with an assessment of its priorities, policies, and structures. Identifying these are crucial to dictate the course of the University towards becoming a seamless UoF. This step will also define the configuration of its subsystems, according to how the VRTD participants envisioned UPOU as a UoF, which this study discussed in depth.

To some extent, UPOU has initially responded to the calls for UoF. The initiatives below were undertaken by the University and are now part of the UoF configurations.

- University-level discourses on the openness of open universities (e.g., open curricula, open admission) in 2012 as captured in the 2017 book publication, "Conversations on Openness,"
- Pilot implementation of the Independent Learning Track, and
- MOOCs' universal accessibility enabling learners to choose based on their learning style (see https://model.upou.edu.ph/)

On the basis of thematic analysis and systems design, these are the areas that need to be looked at as the University envisions the future:

1. There will be a greater focus on reconfiguring the program/course curriculum to accommodate changes in the course design and delivery (e.g., independent learning will not be bound by timelines/cohort).
2. The role of UPOU in the UoF must be clarified, agreed upon by, and communicated to its stakeholders in order to carry out the vision of a UoF.
3. In terms of instruction, UPOU has existing capacity-building initiatives yet these need to be strengthened.

4. In terms of openness in pedagogy, while this is being recognized, its extent should be further explored as the meaning of openness in the educational context changes over time.

While this study is UPOU's configuration, the results can be used as a roadmap, or simply put, an informed vision for other educational institutions to conceptualize and contextualize a UoF. Educational institutions can refer to the following considerations in conceptualizing UoF. It should be: (1) aligned with the institutional vision, mission, and goals as institutions have its unique role, (2) contextualized based on the institution's model to create a holistic conceptualization, (3) aligned with the current initiatives and future conceptualization to determine gaps that would inform the strategic direction the institution should take, and (4) participative, in nature, as UoF will require peripheral and radical changes hence, it is important to engage the institution's constituents/stakeholders.

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Appendix A

Coded recording units into categories and themes

Sub-theme: Peripheral Adjustments		
Recording Units	**Descriptive Code**	**Category**
Course Delivery		
In the future, Universities will now provide options on how students would like to learn: physical, online, or blended. As more students opt for online classes, there is no longer a need in expanding the infrastructures of their campus.	Multi-modal	Flexible Modalities
If you'd look across the outputs, you will see that quite a number of groups have mentioned automation--automation of academic processes and teaching processes	Provision of multimodal learning	Use of Technology
Management Subsystem		
Even the usual/common framework for quality assurance for technology-enhanced and technology-enabled courses and programs only look at the input but not so much on the processes as a result of delivering instruction. The call here is for us to take another perspective in a quality education despite our efforts in configuring the university of the future.	Process-centered quality concepts	Responsive QA
In terms of our statement, UPOU as a university of the future in terms of quality, we say that quality shall be inherent in all aspects of the university including teaching, learning, research, public service, and administration. *So dapat, kasama na talaga siya don, hindi na natin siya kailangan pa* __[inaudible]	Inherent quality in all operations of the UoF	

Recording Units	Descriptive Code	Category
Management Subsystem		
I think it is also important to have this bottom-up approach. We need to know what's going on in the ground level. What's going on with our student's mind, with our staff, faculty, with everyone. Yes, of course, the top can guide, can say—these are the things and the visions of the university—but somewhere, somehow, the top and the bottom should meet.	Participative/consultative quality assurance systems	Responsive QA
I think, that should now define *yung* quality *na sinasabi natin*. I think, *maganda yung inano [sinabi] ni* [redacted]. *Yun pala yung* term *non,* "fitness for purpose". I would subscribe to that conceptualization of quality *kase hindi ka naka-fix duon sa ano..*we have several rooms for improvement and we can really see the dynamics of what we are doing	Fitness for purpose as conceptualization of quality in UoF	
Ang UPOU will play a big role *sa pag-lead* ng other universities in the future considering our mandate sa R.A. 106050 *na tayo ang magaassist sa* other universities in developing their courses, delivering online yung mga courses	UPOU is mandated to be the UoF	Leadership Role
With this shift, UPOU is in a position to lead the way. We are the oblation of this shift: we are needed to outstretch what we know as we are the ones setting the benchmark and selflessly share our resources and expertise to unlock the optimal way for other Universities to chart the future.	UPOU as a model and lead for the UoF	

Sub-theme: Radical Transformation		
Recording Units	**Descriptive Code**	**Category**
Instruction Subsystem		
Something like that. It will probably affect the practice of the faculty tenure. Even now here at UP, the kind of talk that we have in terms of engaging a people who will be doing the work in the university--doing the publication, doing the teaching. I think, the trend, if my observation is correct, is also towards short-term engagement and in terms of engaging experts to work on specific projects, I think there is also that kind of trend happening now at the university.	Short engagements for unbundled role of academic staff in the future	Unbundled Structures
Because if we are looking at providing lifelong learning opportunities, then probably we will be engaging more lecturers, more of those practitioners in the industry to tandem with those who can theorex, who have the basic training in disciplines--in engineering, for instance	Industry-affiliated lecturers in the UoF	
Hindi lang po delivery, also we are open in terms of pedagogies. We are not limited to the instructional model of education, where the instructor is the sage on the stage, *sabi nga nila no. Hindi tayo yung ganoon eh, tayo parang mas importante pa nga yung learners sa atin, di ba?* So we are open to these different types of pedagogies, we're not constrained to one.	The UoF should be known for openness in pedagogies	Innovative Functions
So the necessary skills and values can also be provided by the university, or the University of the Future through a mentoring system. So while in the… so they are in the university, they are mentored as students but hopefully when they graduate they should be… they should also be able to mentor somebody else in their community to achieve sustainability where they are. And so therefore the application of knowledge maybe through innovations or sustainability innovations.	Mentoring as a sustainable teaching approach	

Recording Units	Descriptive Code	Category
Instruction Subsystem		
Another thing that's related to that, that I've mentioned in the past, that we can use when we're trying to reflect on the trajectory of this is probably *yung* academic genealogy ng mga people in that discipline. I've mentioned this before to my colleagues in [redacted], the idea of the academic tree. When you advise someone, whether their dissertation *ganoon,* you impart your knowledge to them and you impart your methodologies, *yung* style *ng pag-iisip*, even your perspectives, *sa kanila.* Soon they will develop their own but they would also adopt part of yours. *Makikita mo na* through the generations, *nadadala pa rin yung mga* certain thoughts in the past. That's exactly what [redacted] talked about earlier, when it comes to the genes, and obviously it will get passed down eventually. Probably pretty much the same when it comes to discipline, so the idea of this website, academicfamilytree. org yata siya, there are different fields *pero parang walang direct sa atin dito, parang wala rin akong mahanap na* colleagues *dito bukod kay* [redacted], *siya lang yung nakita kong colleague dito* from UPOU. *Pero* the idea that, if you want to see what happens in the field, maybe we can look at *kung sino yung pinakamaraming in-advise and yung in-advise ng in-advise niya.* Or *sino yung* adviser *mo, at sino yung* adviser *ng* adviser *mo*. And when it comes to the way that they think, maybe yung ETIC and EMIC *nila*, you would be situated similarly, *dadami yung mga* people in that quadrant, and that would inform what the discipline would be like in the future.	Academic genealogy as basis for future disciplines	Innovative Functions

Recording Units	Descriptive Code	Category
Course Design Subsystem		
I think IL, I consider it as part na of the processes in the university of the future. Students can enroll anytime and they can also finish their program anytime. I think that should be the way that we should have to go given the high demand of work forces not only in the country but even in other countries.	Independent learning (IL) pathway	Choice
...actually *isang ano siguro* example *parang pwede natin maconsider* its a change in a way we do things, *yung IL natin yung* independent learning I think *hanggang* university *lang sya* and we were able to implement *yung IL*. On the other hand, *nandon lang parang naconstrained lang din siya don sa* existing policies when it comes to administrative side *nung* implementation but on the academic side we were able to do that and in fact *kung maayos lang siguro yung* administrative side *ng* implementation *baka* its a really good flexibility *kasi* you can just imagine the student can actually finish the entire program earlier *don kaysa sa* expected because the student can enrol anytime can take the final examination anytime and so on and complete the course requirement anytime and I think that's one innovation even within *yung* context *natin nagawa natin* just within the university despite *yung* rigidity *nga ng* policies *natin, kailangan lang yung sa* administrative side *na yon mayroon ding kaakibat na* flexibility to make that approach work efficiently *sa programa natin.*		
It's like a menu-type and the decision coming from the learner who is an active learner in terms of deciding and determining the pathway that he wants and the institution has mechanism to support that, and also so doing what will remain constant of course	Menu-type curriculum	

Recording Units	Descriptive Code	Category
Course Design Subsystem		
...its teacher-centered *ito* being learner-centered you know what skills you need and what's skills you can make use of and then you pick from the menu and you make your own curriculum there are institutions that do it right now *pero tayo parang pipedream pa* right now but that's other people do	Menu-type curriculum	Choice
Sa ngayon given *nga yung* distribution *ng mga studyante natin*, I don't know how the university should respond *doon sa* information *na ito na* more than 75% of our students are located in these areas *yung nakita ko lang ngayon na pwedeng marecommend siguro is baka dapat* at the start ng class *andon na yung* course materials *para madownload na nila* before *pa dumating yung mga* emergency cases like *yung bagyo hawak-hawak na nila yung mga materials nila* at the same time *pwede sigurong magbigay ng mga options* in terms of learning activities in case *maapektuhan ka ng bagyo ito yung gagawin mo* or in case *may* earthquake *na mangyari ito yung gagawin mo pero* that should be put in place before *pa nakaenrol ang estudyante para* at least *andon kung nandon na sya nasa loob na sya ng kurso alam nya na ang gagawin nya* in case of emergency *na mangyayari.*	Offline program packages as a climate-adaptive strategy in the UoF	
So probably *ang gagawin kung ieexpand mo* and you allow students to have a limited sense of PLE *lahat nung- halimbawa isang kurso* starting as from the center as a network of connected resources *lahat ng pwedeng makonekta halimbawa isang* courses course *dadaan muna siya sa isang curation hindi lang* curation in the sense *na tinitignan mo* whether that is fit with your particular course and particular program *iccredit na ba yan? May credit equivalent na ba yan? Ibig sabihin yung mismong program pati yung outside yung kanyang* resources *isusubject niya na* through possible prevalidation and you can come up...	Personalized Learning Environments are within and beyond the university	Customization

Recording Units	Descriptive Code	Category
Course Design Subsystem		
... with another assessment with simple assessment through post-validation once the student had supposedly *halimbawa* join a community *ano yung* added value *non sa* community so at the same time *tinitignan mo kung* if you have a robust competency of framework *siguro at hahanapan mo siya* where you can credit that dun pumapasok yung issue ng microcredentials.	Personalized Learning Environments are within and beyond the university	Customization
Can we have a more differentiated response to people or learner needs? How can we adjust the curricula to meet their learning needs? Maybe at this point, it's best to turn to science fiction, narratives around the future. What's an ideal in the future that people learn? Is it like you wake up every morning and you go to Siri or Google and you say, "Today this is what's happening to me...*'Eto ang problema ko sa buhay ko...* This is what I'm interested in… This is how I'm different from this week...What should I learn today"? And then you know, *parang* there this whole new, "Okay, well, today you have a difficult internet access, but we have arranged a bunch of activities that you can take instead". Talking about a singular institution of the future is very very difficult. Briefly, there is no average UPOU student. How can we adjust the curriculum to meet learner needs? Well, if you're willing to follow this through then every single curriculum, every single activity will be different and then, we have to think about assessment in different ways. Then, we have to think about summative and formative assessment in a totally different way.	Individualized learning environments	
We have the course delivery next. One way to discuss the gig economy is adaptive learning–-the use of AI to move students up and down based on analytics-based assessment.	Analytics-based assessment	

Recording Units	Descriptive Code	Category
Course Design Subsystem		
What kind of college degrees shall we offer? In November, I already mentioned the pluridisciplinary degrees to be the new normal. Probably, an example can be a degree in Computer Science will also have courses on Physiological make up of the body, on Psychology, even on Anatomy, on environment, so that the future of computing technologies will not just be about the technology itself, but taking into consideration the user and the environment. Again, the idea is for us to consider Future proof degrees that will provide that disciplinal knowledge which can serve as raw materials from which new knowledge or even innovations can be developed	Pluridisciplinarity to future-proof degrees	Integrated
So application of theories to achieve sustainability. So our students must be able to understand the sustainability issues and challenges, and they should see be able to see the interconnection of problems in the society. And so the way to train the students, is for them to see the interconnection of their discipline to all other fields.	Incorporation of sustainability in curriculum	
In order to reduce the demanded skills in the market, universities would try to develop programs and courses that would address the demand in order to reduce the gap in the industrial process and also *yung pinoproduce* ng university.	Labor market-driven programs in the UoF	
Management Subsystem		
In terms of what the UPOU can do, we can talk about that specifically. In terms of the university of the future, it will be inevitable that there will be more partnerships in the industry because we will be engaging nga with professionals. We are trying to make our courses as relevant as possible.	Industry collaboration in teaching & learning	Malleable structure
But we might consider them as we look at UPOU as - maybe - the university of the future within or without the UP System.	Independent UPOU as a UoF	

Recording Units	Descriptive Code	Category
Management Subsystem		
In the process of conceptualizing this continuing education program under [redacted] I actually have a personal quest, I really want to find out how open are we and when it comes to openness how open are we how fast and how nimble can we actually be when it comes to proposing courses	Open and flexible organizational structure	Malleable structure
But then again *ang tanong*, although we can do things like in this side sa university but if you are going to link now to the other side wherein we are being governed by this highly structured and rigid policies of the university I think *dun medyo magkakaron ng* conflict *o problema*. *Yun yung itanong ko kasi kanina,* how far we should have to go to make UPOU as the university of the future.	Structural flexibility for UPOU as a UoF	
Actually *itong term ni* [redacted] *na pandiscipline*, it reminds me of another term, metatheory. So there's a class of theories, which is theorizing on theories and theoretical concepts. And I wonder now to what extent UPOU in the future could be, this sounds kind of weird, *pero* as kind of a meta-university where it reflects quite deeply on a quite theoretical level on everything else that is happening in the research arena in the Philippines. And you can use *yung* different lenses, whether it's from the lens of information and communication, or from management and development studies, or education around that.	UPOU as a meta-university in the future	Progressive and sustainable UoF
The traditional university with all our heritage and tradition, how do we adjust? And specifically, how do open universities like us adjust to that situation kasi the… as open university, our philosophy has always been defined by openness. And this is something that is more important in the future. But the thing is, the socio-economic, political and environmental traditions also define what openness means to us in different stages or eras of our time. The way… yung ating economic,...	Adjusting the concept of openness according to the present context to accommodate the future	

Recording Units	Descriptive Code	Category
Management Subsystem		
...social political conditions define what we teach and how we teach. When we move from the industrial model *na* traditional way of distance education to ODeL, we still work for openness *pero yung* implications to openness *nagbago*. *Iba-iba yung* implications to equity, to access, to inclusiveness, to diversity. Now, going to the future, *ano ngayon yung magiging* implications *niyan* to openness? *Kasi* it's a matter… we need to talk about… not only about how we're going to teach, but how we're going to teach in a more open way, in an open way, and what does openness means to us in a post-industrial era?	Adjusting the concept of openness according to the present context to accommodate the future	Progressive and sustainable UoF
I also wonder to what extent in the future we will have to rethink sustainability. In the future, as we face issues around the climate and the environment and as time becomes more of a limited resource, every little step or every action that should be made would be done with the consideration to how it impacts or disrupts entire systems. Do we really need to print this label? Again, I'm back to this whole paperless future [inaudible]. Do we really need to sign this paper? Do we really need to print this label? Do we really need to approve this one thing? I think we really need to *parang* who says to anticipate what will be the conflicts, what are the threats, what are the culture wars that will be in place in the future? Because there will be culture wars, there will be divisions. And anticipating those divisions, anticipating those conflicts can help us position ourselves better as universities of the future, or the future, and in the future.	The UoF as a responsive, sustainable, and adaptive system	

Recording Units	Descriptive Code	Category
Management Subsystem		
...because of the changing times, changing technologies. We also need to adapt and change into something new and something better, so we need also to be resilient. So we have be sustainable but we have to be resilient at the same time. So *sa baba* I can see there's the identification, and maintenance of best practices. And there should be also flexibility in times of changing times.	Flexibility and resilience with changes	Progressive and sustainable UoF