Journal of Education and Human Development
June 2016, Vol. 5, No. 2, pp. 139-148
ISSN: 2334-296X (Print), 2334-2978 (Online)

Published by American Research Institute for Policy Development
DOI: 10.15640/jehd.v5n2a17
URL: https://doi.org/10.15640/jehd.v5n2a17

Online University for Campus Management

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Abstract

The aim of the proposal Online University for Campus Management (OUCM) is the combination of planning, improvement, and assessment of online management in five steps for university teaching and learning. A virtual university information processing system begins at the e-campus phase (stage 1), where university personnel start with digital data in several forms: texts, numbers, graphics, sounds, and videos. As the university, personnel move forward, data are organised and presented as e-learning modules (stage 2).
These modules denote a dialogic structure of an e-campus as a repository of compiled thinking, social and psychomotor data, which are derived by means of social interaction (stage 3). This stage represents the point at which the university personnel give specific meaning to information. A new stage emerges: online assessment (stage 4). Appraisal and feedback can be used as the basis for faculty e-development and inquiry (stage 5). As a result, the campus-inquiry model reaches utility within the development of an OUCM campus paradigm.

Key Words: E-learning, Teaching and learning, Evaluation, Social interaction, Educational research, Online education, Curriculum development.

Aims of the study

The term Online University for Campus Management (OUCM) is used to support five interrelated electronic objectives. Maintaining proficient University faculty involves participating in high-quality OUCM processes that help instructors and students improve their teaching practice and learning abilities.

It follows the framework indicators for the model: understanding e-campus scenarios as virtual communities of learners; bearing in mind three mission-critical elements for e-learning modules: students' cognitive processes, faculty instructors' curriculum and teaching competencies, and faculty members' teaching strategies; implementing social interaction among learners; developing e-portfolio as an innovative approach to online assessment, and engaging faculty in e-development and inquiry activities. University faculty must be proficient in OUCM processes in order to be considered as fluent in online literacy (Fig. 1).

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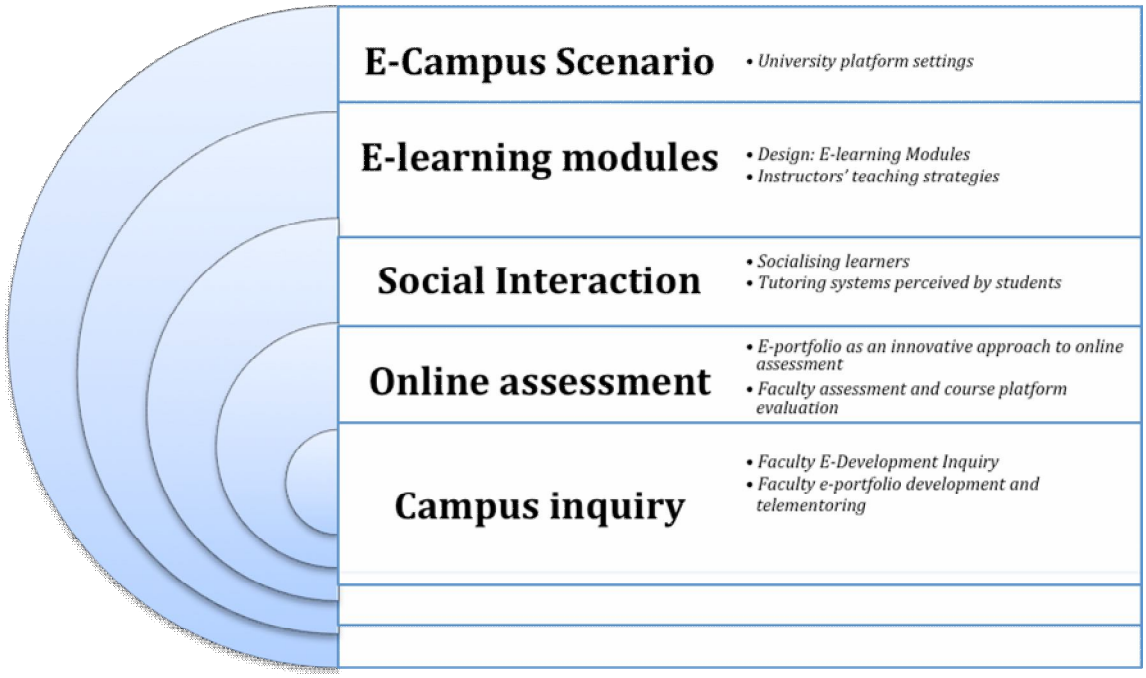

Fig. 1: The OUCM framework

Background

1. E-Campus Scenario

The growth and development of information and communication technologies (ICTs) have led to their wide diffusion and application in classrooms and laboratories, thus increasing their teaching and research impact: first, to homogenize all physical plants in the university world in which similar free and open inquiry may happen, and second, to interconnect those scenarios so that ultimately they join into a single and invisible forum of social practice. The reflective and democratic discourse among students and academics may be suffering from the quick implementation of ICTs. The assessment of a technological infrastructure involves an inquiry about Internet literacy and the knowledge and emotional pathologies associated with ICTs among staff and students. The mission of the university, which is geared towards the knowledge society paradigm, changes its role in teaching, research and services, as it invests much money in technological infrastructures to expand its activities to new institutional and corporate beneficiaries and students of all ages who aspire to play a new role in learning, making it more attractive and competitive in higher education institutions.

Thus, the driving forces operating in European universities are the following: a student-centred teaching that envisions learners playing a central role in active learning, new philosophy on the curriculum mission and quality assurance vision of universities, and free Internet access for students to complement their learning activities, and investments in campus information infrastructure at university. All universities nowadays are trying to respond to the e-learning challenges by means of curriculum innovations and experiments. On the one hand, while faculty teachers, students and other administrative staffs are changing their roles; other institutional processes remain anchored in a conventional academic pattern.

On the other hand, a sociopolitical description of the dynamics of company power in the current university is presented. Online education is seen as the nub of neoliberal reform, an addition to the university of capitalism that is now digital, global, and knowledge-based. In other words, it seems like the automation - or at least de-skilling - of higher education. According to Shea and Bidjerano (2009), about 20% of all college students are enrolled in fully online courses in the US, representing online courses as the fastest and most widespread instructional approach in higher education. Such student online learning growth, however, presents frequent challenges to faculty members. Some of these problems are related to ICTs infrastructure and others to teaching management.

Faculty members and students need to handle technological modules (multimedia, streaming video, graphical interfaces, blogs, wikis, and so on) in almost all academic disciplines (maths, medicine, engineering, education, etc.) in order to enhance sound principles of learning. Therefore, technology integration in the academic curriculum is a mandatory teaching competency for university personnel. The old role of the student acquiring textual information in the classroom disappears before the need for tutorial learning.

The tutoring of students in teaching is much more important than any other proposed technological innovation. A ICTs-based learning system means a new way of face-to-face or distance conversation, a personalised interactive dialogue, a learning conversation, to sequence the steps before a problem is presented in a laboratory, classroom, or distance learning programme. This new teaching is complex for two reasons: the ratio faculty/student in a virtual classroom decreases, and simultaneously a sufficient number of faculty teachers with computer literacy are not available. Teaching with new technologies requires, therefore, a redesign of university teaching.

1.1. University platform settings

Universities are trying to ensure deep learning within any technological platform, including the following principles: students' learning in and from workplace (that is, we ultimately learn by doing); critical reflection or critical analysis (i.e. reflection normally involves looking for commonalties, differences and interrelations beyond their superficial elements); action inquiry or action research (in other words, the deliberate use of any kind of plan, act, review cycle for inquiry into action in a field of practice); create and support a collaborative discourse in online learning communities (e.g. community-engagement practitioners, scholars and critical pedagogues in active learning), and adult self-directing learning (e.g. it includes the learner initiating the learning, and making decisions about what training and development experiences will occur, and how).

A virtual community is an undefined space of commitment to human welfare (i.e. a state characterised by health, happiness, and prosperity, and service to others). Other authors view a community of practice as the model that reflects the epistemic engagement of participants in cyberspace: "Communities of practice consist of individuals who share an interest or passion about a particular subject or shared domain of interest"(Chunngam, Chanchalor, & Murphy, 2014, p. 864). In addition, the physical campus of a university centre that houses a formative programme should show the invisible campus or the community that promotes learning and knowledge construction in learners, as kind of "cybercity". In short, a cybercity is an invisible computer mediated communication (CMC) that exists because its members share a common purpose aimed at developing friendship that can only be achieved in partnership. People in a cybercity are learning dynamically to trust each other.

Thus, anonymity, intimacy, and disclosure change individuals' affective and emotional qualities into a new organism: the crowd behaviour (Christie, & Dill, 2016). The social anthropology research of the new CMC is a way to understand the social identity, social interaction, and relations among students or even to theorise about the rise of the network society. A learning community can also be considered as a measure of long-term success, because it reaches personal and professional perspectives, such as lifelong learning. A virtual community creates an information-rich environment (i.e. storage, processing, transmission and sharing of information), and changes how university students interact within a climate of respectful engagement.

It has been assumed for computer environments that they facilitate teaching and increase the transmission of facts to learning factual information, but the impact that web-based technological environments have in the construction of student knowledge is still under investigation; for example, how students solve problems, develop concepts, or promote critical thinking to become members of a community of learners.

Consequently, many web-based course management systems (CMS), also known as learning management systems (LMS) or virtual learning environments (VLE), such as Blackboard, "Modular Object Oriented Developmental Learning Environment" (Moodle), Web Course Tools (WebCT) or Desire Learn, contain a variety of technical functions for learning (Malikowski, 2008), as follows: "Transmit documents to students" (that is, ability to send documents by compact portable document format (PDF); "Communicate asynchronously" (i.e. e-mail-communication or textual cues in forums); "Quiz students" (in other words, help students try out the assessment tool of faculty instructors' choice);

"Use a drop box to exchange files with students" (for example, area where any faculty member may store and send files to students), and "Survey students" (e.g. a series of questions used to gather information about teaching and learning processes) (p. 81). As a result, two main issues facing the University instructors are: (a) how to promote learning "from" media and technology, or how students are exposed to information delivered by technology (e.g. word processors, conferencing systems, hypertext systems, mouse pointing devices, mixed video and computer communications, which are the technical basis for half a dozen of the main high-tech industries today), and required to respond to letters that have been received by the same technological procedure. Indeed, the challenge is how technological devices are designed to include a degree of user autonomy in the system, and (b) learning "with" media and technology is the other approach to using ICTs. The classification of ICTs by certain attributes (i.e. interactivity, iconicity, timing, and distance) is an evaluative approach that combines a number of items and some properties attributed to media. Not all ICTs are at the disposal of the faculty for classroom teaching. ICTs typically are stored in multimedia rooms, libraries, or computer laboratory multimedia in which there is often no inventory or bookkeeping, safety plan or occupational hazard prevention in terms of transport and use.

2. E-learning Modules

Faculty members' curriculum and teaching competencies change in number and complexity when the learning activities are performed in asynchronous learning networks (ALN). Teaching and learning processes inevitably vary in ALN, as the interaction with students is remote. Consequently, web-based activities must be carefully drafted before texts, graphics, images and sounds are posted on the Internet. In addition, students' participation in forum discussion groups under conditions of genuine responsibility and commitment is necessary. In addition, management of online incidents for new alternatives to solving problems and interactions with colleagues from different groups in the same scientific discipline requires close coordination and cooperation, and so on.

Because of their insight depth and emotional profundity, cognitive, affective and management faculty roles are more unpredictable in ALN environments. The cognitive approach to teaching for a virtual university instructor is very intricate, as instructors have to deal with students' mental processes of learning, information storage, and complex thinking. For a faculty member his or her affective approach to teaching also requires finding new tools to express emotions that influence students' relations and change the psychosocial classroom environment. Moreover, the directive faculty role concerning classroom and course management requires much more attention to be paid to content detail, course structure, and further student monitoring.

2.1. Design

E-learning Modules A research assumption is that an e-campus infrastructure correlates with the increasing of students' intended learning. This supposed result made by planners of online teaching is questionable when it is generalised to all students, as students' cognitive styles vary. In effect, online learning requires faculty members to review their roles, particularly in relation to curriculum and instructional design. Findings also indicate that faculty teaching design generally encompasses several areas of learning concern:

(a) User meta cognitive characteristics. A well-constructed content chunk provides students with a comprehensive account, as well as links to related or supporting pages for further study. An individual who possesses a cognitive style enabling him or her to understand the structure of the page length should derive greater benefits in terms of learning. Cognitive style relates to orientation in space, and research has hypothesised that field independent individuals rely on an internal frame of reference (analytics), while field-dependent individuals rely on an external frame of reference (wholists). Analytics are able to apprehend ideas or concepts in parts, while who lists view ideas as complete wholes. This is important for teaching, because analytics do not learn as well as who lists, for example, in multimedia presentation of information;

(b) Information retrieval, transmitting, and sharing, based on the web to illustrate the various conceptual interrelationships between units of information, need to be segmented. Therefore, a faculty instructor should use less content segmentation for analytics;

(c) Providing an overview of the web for locating service providers and retrieving service description documents, as a key component of the overall web service model, because navigation through the web system in addition to reading and understanding the contents demands high levels of students' cognitive load, particularly for wholists and verbalisers, and

(d) Students using a verbaliser style are competent at reading and understanding information content of a web-based instruction system. Contrarily, imagers keep track of their spatial locations more successfully than verbalisers.

2.2. Instructors' teaching strategies

The process of learning in an online environment is cyclical and iterative, between the cognitive processes at the object level (i.e., study task) and processes at the Meta level (i.e., retrieve). Ideally, the aim of any online detailed course syllabus is the development of students' critical thinking. Thinking is composed of several subsumed cognitive skills, such as "implicating, problem solving, examining, reflecting, and criticizing" (Şendağ, & Odabaşi, 2009, p. 2). These skills operate and develop, as an individual is conscious of their own control, by means of active and critical implication and discussion in distinctive contexts, cases, and materials. Congruently, students' critical thinking skills can be classified in the online environment according to several interpretative indicators: "inference" (i.e. defining a problem involves selecting the most suitable information bit leading to an answer; for instance, problem-based learning (PBL) used in Anatomy:

"The results of this review suggest that PBL offers no disadvantage over a more traditional curriculum if exam performance is measured, however PBL does not seem to result in greater performance compared with traditional methods" (Williams, 2014); "deduction" (i.e. drawing valid conclusions and making decisions about issues such as the following: Internet users form groups, have their own languages, customs and cultures, therefore, which are the emerging network societies' among university students?; "interpretation" (e.g. evaluating evidence regarding the notion of peer or distributed learning among students referring to networks of learning in which students take up opportunities in a variety of ways without necessary involvement), and "evaluation of arguments" (i.e. take into consideration, for instance, a "discussion board", which provides a forum where students can collaboratively analyse and solve problems).

3. Social Interaction

The student as a learner interacts with the environment through social modelling. A learner represents social phenomena, which may have different qualities: simple vs. complex, small vs. large, qualitative vs. quantitative, static vs. dynamic, deterministic vs. stochastic, and so on. Many learning tasks foster different kinds of social models, which require communication and collaboration among individuals to show how well they suit the tasks in hand. Moreover, a virtual classroom uses interactive technologies that can lead to particular perceptual inclinations and disposition barriers among faculty as they attempt to make decisions about teaching students regarding information search on the web or evaluation of web resources.

3.1. Socialising learners

The behaviour expected of Internet novice students is to be introduced into computer competencies to manage online communication effectively, to relate their postings to other comments, and to build a discussion thread. An academic or personal purpose needs to be evident if students are to work collaboratively online. Students also come to online instruction with inappropriate expectations, because they do not know how to express paralinguistic information through explicit verbal cues.

Consequently, they would benefit from using computer-mediated conferencing and email, if they exchange discipline conceptions and misconceptions with other participants and demand online tutoring support. University courses are using different types of computer platforms. Usually they include several communication modules that offer blogging, exchange of messages, and multimedia applications (i.e. pictures, sound, diagrams, etc.). Messages can be analysed by means of coding schemes that segment discussion communication into a discrete number of measuring units large enough to convey meaning, as follows: online chat (i.e. it allows smooth, synchronous text interaction.

Online chat may support learning because the brevity of messages enables the articulation of ideas, and participants simultaneously discuss more viewpoints. Timid students may also express their emotions freely); online asynchronous communication (i.e. it tends to be far more open-ended; discussions can be viewed nested, flat or threaded. Nevertheless, Giesbers, Rienties, Tempelaart and Gijselaers (2013) argued, "future research should therefore include the role of tasks or learning activities, social factor, and collaborative construction of motivation when

combining asynchronous and synchronous communication in online learning" (p. 45). It means that the development of students' motivation should incorporate, among other tasks, guidelines for uploading and downloading files, diverse types of postings (e.g. feedback and comments), and reviewing documents. There is a natural tie-in between technology use and certain types of group work. The interchange of emotions is part of online socialisation.

Moreover, if the goal of the online classroom is student learning, then online must be student-centred (i.e. an individual is activated by student interaction and active involvement). Peer telementoring actions also provide an avenue for new students to be supported by more experienced mentor students and make social connections with other new students, and wiki, a way of powering community websites (i.e. it enables documents to be authored cooperatively and supports online shared learning). Collaborative and purposeful writing is similar to problem-based learning in which knowledge is constructed and negotiated with others through dialogue in academic contexts. Dyads or groups work together to frame and solve problems, arguing from different vantage points, testing out assumptions, and redefining meanings (i.e. creative thinking in order to develop new viewpoints and interpretations, and negotiating patterns of meanings). Another social document is a blog, a publication of personal thoughts and web links, in other words, a kind of hybrid diary/guide site. The writing of such diaries has gained social momentum because of the introduction of automated published systems, most notably Blogger. It is assumed that the diaries promote a deeper processing of the learning content happening in writing one's own post; reading students' interpretations of posts texts or photo posts and mentioning text posts of peers.

3.2. Tutoring systems perceived by students

Social and academic online support processes can particularly facilitate first-year students' discussion of their progress in relation to course workload and coping strategies. In effect, bridging discipline demands and social needs of students results in decreased attrition and enhanced academic performance. It is not clear, however, that online support for students produces better academic results than face-to-face tuition. Also, online courses should give space to reciprocal peer tutoring to aid student learning, motivation, and empowerment. Basically, for the tutee, peer tutoring provides a flexible, non-threatening, effort to classroom instruction.

4. Online Assessment

Faculty instructors assess students for different reasons: the encouragement of positive motivation and selfesteem, the development of self-assessment (reflection), to give sufficient feedback, to guarantee a quality information assurance mechanism, or to conduct grading practices that reflect student achievement. Most importantly, however, e-assessment can be applied to both formative and summative assessment as a means of judging and making decisions concerning student learning. E-learning in a university course is a particularly distant and open system, in that the analysis, design, development, and delivery system influence the environment and vice versa. Consequently, any assessment model and its impact on student outcomes must take the environment constraints and underlying principles into consideration. Furthermore, online course designs should provide a detailed account of the course's circumstances (design, development, and delivery). Definitively, the scope of an online learning assessment should be framed according to its goal. The university curriculum is changing towards the new concept of learning competencies. Students are more responsible for their learning, because they have more autonomy and self-direction to find out their own learning itinerary (elective disciplines, practicum, and so on). Self-assessment requires learners to make judgements about their own learning and is a thoughtful procedure facilitating feedback to students about learning competencies. Consequently, students develop a questioning and reflective approach. In online environments, the idea of asking students to rate their own performance has the purpose of identifying the strengths and weaknesses of the learning competencies and introducing new proposals for amending or redirecting their competencies in forthcoming essays. In this respect, provision of several assessment points during the course units, with prompt feedback, could help students confirm their own judgement about learning competencies.

4.1. E-portfolio as an innovative approach to online assessment

Most virtual learning platforms give students opportunities for a collaborative and evaluation strategy where students realise the following processes in a portfolio: collect (information), select (products), reflect (issues), evaluate (materials and products), and celebrate (value or worth). Thus, portfolios can be distinguished and classified according to some types (e.g., dossier, training, reflective and personal development, etc.), each type focusing on a specific function.

For example, meta cognitive practice (e.g. collaboration and communication among students) plays an important role in the creation of personal dossiers in order to foster self-reflection and e-assessment. We have to bear in mind also the emotions or attitudes (i.e. stress, comfort, concentration, student expectations and preferences) that students feel during personal portfolio eassessment. The research into how students learn and discuss in online courses in higher education has also followed other approaches, phenomenography being one qualitative mode for understanding how students conceive learning and also how they use friend-to-friend (F2F) and online discussions in virtual contexts. One evaluation issue that has not been openly addressed in the research literature related to use of portfolios or phenomenography studies is that of theoretical models and consistent tools for the analysis of transcripts that accurately measure the portfolio construction process. It is also important for any course work included in a portfolio to consider the analysis of its construct validity. Most portfolio art efacts can be transformed into text descriptions. Therefore, the analysis of text requires tools that encompass the most important aspects of the construct, overcoming, among other things, the threat of discriminant capability (i.e. mutual exclusivity of categories and codes). A carefully designed and executed e-assessment regime is required, one that is clear and relevant and offers constructive and timely feedback. E-portfolios should provide good feedback practice, helping to clarify what good learning competencies are (i.e. criteria, expected standards), encouraging positive motivational beliefs and self-esteem, and also informing faculty instructors about teaching in order to reshape it.

4.2. Faculty assessment and course platform evaluation

Teaching online assessment by students is a personal and improving practice if assessment responds to faculty and university needs. E-assessment criteria, process, procedures, and tools must contain clear and coherent information that suits the goal systems. Also, e-assessment compiles multiple sources of information that are used mainly for formative assessment, while summative assessment is retained for faculty promotion and other purposes (Villar, & Alegre, 2008). Students have also evaluated virtual learning environments and ICTs materials in order to ascertain the perceived usefulness of the designed modules and characteristics. There are more new-developed technological devices (e.g.. educational podcasting) which are very popular, but their effects are yet unknown. For example, Lee, Miller and Newnham (2009) summarise the outcomes of an empirical meta-analysis of research studies in the field of educational podcasting: "There is a paucity of hard evidence attesting to its benefits" (p. 54), which may be because of factors like technical knowledge among students and teachers, users' habits in accessing the Internet and browsing the Web, and so on.

5. Campus Inquiry

Faculty members perceive a gradual change from a print civilisation to a digital media culture, and this move carries personal effects in terms of how higher education teaching contexts are represented. The faculty needs to demonstrate how digital representations can be designed, computer technologies used, media research findings interpreted, epistemological positions understood, and new media literacy modelled to highlight emerging concerns in new media culture. Furthermore, faculty should pay attention to the interaction between words and physical artefacts, such as books, computer screens, and videos. The benefits of staff technological competencies are widely acknowledged. So, too, are the stages through which faculty members might pass in learning and applying new technologies to their classrooms. As yet, however, little thought has been given to faculty professional stages, in order that might be incorporated into the staff e-development process: how faculty develops expert skills (e.g. developing coping strategies, more engagement, believing that computer knowledge is simple, etc.); how force is exerted in faculty by a new technology (for example, less threatened by technology, technology-enhanced curriculum coverage, beliefs are justified by idiosyncratic uses of technology, etc.), and how faculty gauges innovative concepts (i.e. restructuring of curriculum and learning activities, performance of the necessary mental operations to evaluate a technological theory on its own, technological knowledge as constructive foundation, etc.).

5.1. Faculty e-development inquiry

There is considerable evidence that new faculty members are not prepared for the professional e-learning life they enter. Technological understanding gained through research on the pedagogical roles of course guide design and internet affordance have not yet passed through to faculty, signalling a need for staff development, for how to teach the complex ensemble of analytic thinking, skilful practice, and the wise judgement upon which each profession rests.

Promoting a faculty member's pedagogical design capacity can help him/her participate, therefore, in the discourse and practice of university teaching. Many faculty members manage to survive in this technological scenario balancing the often-competing demands of online teaching, service and research activity. It is not surprising, therefore, that many faculties write content lessons; however, if graphics, pictures, interactive exercises and video are added, a software developer is then needed to put the lesson unit on the web platform.

Characteristics of the lesson texts that matter include how the text is structured (i.e. syntax, emphasis, vocabulary, etc.) and how considerate it is of the students' motivation, prior knowledge, and interest and information competencies. A more skill-intensive and coordinated process becomes necessary. Consequently, the success of these e-learning designs is frequently dependent on the characteristics of the commitment of the partners to online teaching. Hassanzadeh, Kanaani and Elahi (2012, p. 10960) studied a conceptual model composed of 10 rigorous pedagogical dimensions for measuring e-learning system success, and concluded that the following indicators were suitable for universities, according to students and instructors' opinions: technical system quality, content and information quality, service quality, intension to use, user satisfaction, use of system, loyalty to system, benefit of using system and goals achievement. Consequently, the faculty's most important compromise in ensuring a sound e-learning design is to settle an e-learning quality assurance model that has some core dimensions, namely: guaranteeing coherence of the technological structure of the e-learning course, and safeguarding appropriate adaptation to student groups and discipline contents.

5.2. Faculty e-portfolio development and telementoring

Faculty learning, like any learning, has both individual (i.e. personal identity, reflective practice) and social aspects (i.e. negotiated curriculum meaning, authentic university-based activities, colleagues' collaboration, group community, etc.), and both are crucial in developing teaching excellence. Essentially the faculty learning goal is to gain curriculum competencies and for staff to attain a collection of personal attributes, along with the ethical behaviour, social roles, and scholarly responsibilities which mark the reflective university professional. Carefully designed online staff development courses have clear challenges. It is relatively straightforward to design e-learning activities that help imaginative faculty members to add pedagogical capacities to their teaching repertoires. More challenging is helping them to find enough time to realise the training programme, in terms of the pace of learning or the length of the course. A faculty member might also face stressful situations when he or she tackles media and electronic technology problems. A further challenge that e-development brings is the heightened awareness of the impact of personal products developed for credentialing professional progress in a faculty e-portfolio. There appears to be a strong rationale for blended learning based on the body of research about the design of effective teacher professional development programmes.

We need to think about the importance of e-portfolios in faculty development programmes, and to use development artefacts and performance with the help of thoughtful mentors. A faculty e-portfolio is a portrait of a university profession in electronic format (e.g. word documents, PowerPoint slide presentations, web sites, video clips, etc.). A faculty e-portfolio accurately captures the evolution of a faculty's production (i.e. the visible evidence of improvement). The e-portfolio immediately becomes a data bank of relevant and arranged items (i.e. artefacts, performance) of a professional and scholarly life for promotions and tenure. We reiterate that the effectiveness of faculty eportfolios in promoting faculty learning will depend on their appropriate assessment uses, formative and summative, that indicate one's growth, goals, and current knowledge and competencies with performance-based evidence. The positive effect of e-portfolios on the confidence and self-esteem of faculty members and other learners is often claimed. It is understandable, then, that electronic dossiers play a substantial practical role in alternative assessment of authentic practices. Just as we expect that paper portfolios show a person's learning journey over time and demonstrate their curriculum competencies, we should expect electronic portfolios to encompass a faculty's lifelong learning (i.e. an individual's or organisation's human capital) (Villar, & Alegre, 2012).

Recommendations

A cyclic OUCM framework describes four stages or processes of faculty development:

(a) Conceptualization – coming into contact with general curriculum and teaching competence (CTC) by lessons including articles, websites and collective presentations courseware that present rational university teaching information.

(b) Construction – building and testing faculty members' knowledge by performing meaningful tasks, practice situations or strategic experiences – supported by courseware that enables interaction and structuring of online material.

(c) Assimilation – performing teaching competency that has been learnt – supported by courseware that enables mentoring dialogue and forum discussion, and

(d) Assessment and feedback - estimating or judging the nature or value of a teaching competency and the response to a particular task, practice situation or strategic experience – supported by courseware that enables qualification of task, practice situation or strategic experience.

Reflective learning is a cognitive and affective process that requires active engagement on the part of the faculty members while participating on online courses; as a result of reflection a faculty member is triggered by online tasks, practice situations or strategic experiences; upon reflection members examine activity responses, teaching beliefs, and premises in light of the online practice situation or strategic experience; and self-reflection results in incorporation of the new perception into faculty members' teaching intention and experience. This description of reflection appears consistent. Besides, the following OUCM factors relate faculty members' computer learning with perceptions of self efficacy: transmit documents to faculty participants (e.g., articles in specific document format (PDF); communicate asynchronously with faculty participants (i.e., e-mail-communication or textual cues in forums); quiz faculty participants in pieces of learning evidence (in other words, help faculty participants try out the lesson and task assessment tools of mentors' choice); survey faculty participants (e.g., a faculty teaching belief inventory used to gather information about the use of portfolios for student learning and assessment), and support faculty members (e.g., seeking to foster academic cultures responsive to the diverse professional development needs).

Conclusion

We reach the following soundly conclusions: first, faculty-teaching beliefs change at the e-campus. Second, e-learning modules can facilitate the construction of faculty members' declarative, procedural, and strategic pedagogical knowledge. Third, social interaction refers to particular forms of words, images, and other multimedia externalities, in which the actions of students and faculty teachers affect instructors' preferences. Fourth, online assessment mission is to provide university institutions, classroom faculty teachers, and students support for classroom teaching improvement and student learning. Finally, OUCM introduces a systematic online approach to linking competency development, online training design, assessment strategies, and mentoring support.

Future OUCM guidelines

The above theoretical accounts call attention to avenues when future guidelines are formulated in design, development, and evaluation of faculty e-learning programs: first of all, what is the faculty teachers' core classroom CTC? At this point, faculty training and development can only be established after clear definition of professional roles, standards, and competencies. Secondly, what is a quality OUCM? Program assurance is needed to improve the teaching competency theoretical foundation and refine the OUCM basic teaching modules and their use in assessing faculty members' learning and quality. OUCM triggers training and competency-based assessment designs. Thirdly, what is a safe faculty members' online learning environment? Online activities and questionnaires, email tutorials, and compulsory forum discussions are examples of learning "from" technology that enhance faculty learning in computer-based learning environments. An online environment must be an excellent resource and a guarantee for faculty change. Finally, what are students' knowledge construction processes? As faculty members are not experienced in assessing their students' knowledge construction processes (e.g., web-based learner eportfolio systems), they should be trained in activating, communicating and envisioning students' knowledge construction processes.

References

Christie, Ch., & Dill, E. (2016). Evaluating peers in cyberspace: The impact of anonymity. *Computers in Human Behavior*, 55, 292-299. http://dx.doi.org/10.1016/j.chb.2016.01.025.

Chunngam, B., Chanchalor, S., & Murphy, E. (2014). Membership, Participation and Knowledge Building in Virtual Communities for Informal Learning. *British Journal of Educational Technology, 45*(5), 863-879. DOI: 10.1111/bjet.12242.

Giesbers, B., Rienties, B., Tempelaart, D., & Gijselaers, W. (2013). A dynamic analysis of the interplay between asynchronous and synchronous communication in online learning: The impact of motivation. *Journal of Computer Assisted Learning,* 30, 30-50. Doi: 10.1111/jcal.12117.

Hassanzadeh, A., Kanaani, F., & Elahi, S. (2012). A model for measuring e-learning systems success in universities. *Expert Systems with Applications, 39*(12), 10959-10966. http://dx.doi.org/10.1016/j.eswa.2012.03.028.

Lee, M. J. W., Miller, C., & Newnham, L. (2009). Podcasting syndication services and university students: Why don't they subscribe? *Internet and Higher Education, 12*(1), 53-59. http://dx.doi.org/10.1016/j.iheduc.2008.10.001.

Malikowski, S. R. (2008). Factors related to breadth of use in course management systems. *Internet and Higher Education, 11*(2), 81-86. http://dx.doi.org/10.1016/j.iheduc.2008.03.003.

Şendağ, S., & Odabaşi, H. F. (2009). Effects of an online problem based learning course on content knowledge acquisition and critical thinking skills. *Computers & Education. 53*(1), 132-141. http://dx.doi.org/10.1016/j.compedu.2009.01.008.

Shea, P., & Bidjerano, T. (2009). Community of inquiry as a theoretical framework to foster 'epistemic engagement' and 'cognitive presence' in online education. *Computers & Education, 52*(3), 543-553. http://dx.doi.org/10.1016/j.compedu.2008.10.007.

Villar, L. M., & Alegre, O. M. (2008). Measuring Faculty Learning in Curriculum and Teaching Competence (CTC) Online Courses. *Interactive Learning Environments, 16*(2), 169-181. DOI: 10.1080/10494820701365937.

Villar, L. M., & Alegre, O. M. (2012). *Los portafolios electrónicos en el hemisferio de la evaluación auténtica.* Madrid: Editorial Síntesis, S.A.

Williams, J. M. (2014). Is Student Knowledge of Anatomy Affected by a Problem-Based Learning Approach? A Review. *Journal of Education and Training Studies, 2*(4), 108-112. doi:10.11114/jets.v2i4.509.