Designing a Doctoral Program for Online Students

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ABSTRACT

As the global economy grew more and more competitive, the demand for higher education increases proportionately. The availability of diverse field of studies to cater for each sector's manpower requirements led to the increase in the number of students pursuing higher education at the graduate level. The advent of Internet Technologies and improved accessibility has contributed largely towards the acceptance of e-learning. However, learning and teaching via online mode has its own challenges and rewards. This is especially so for programs that is very subjective such as the online doctoral program. There are obstacles faced by the students, supervisors, the university system and the examiners which can be addressed if the system of doctoral supervision is well formulated. Universities which are well established find it difficult to adjust to the requirements of online doctoral students' supervision. The younger universities are adjusting their system and policies to meet new challenges. In this paper, we present to the readers our effort in designing an online doctoral program for Information and Communications and Technology (ICT). The structure of the new program is to ensure that the students will graduate on time and produce quality theses overcoming existing constraints that hinder students from obtaining a doctoral degree. The paper starts with an introduction of our university and its doctoral programs. This is followed by a description of the problems faced by students in existing doctoral systems. Next, the paper studies the doctoral programs or models adopted by three different Universities. We then present the program that we have formulated for our university. It is hoped that by sharing our work, other universities could learn from our experience and emulate our efforts.

Key Words: online doctoral program, Supervision, e-learning

1. Introduction

As we step into the new millennium, the tremendous growth in the higher education sector is making its presence felt in the world of academia. This phenomenon contributes to the increase in the number of students with first degrees so much so that obtaining a 'doctorate' is seen as 'value added'. We have often heard that a PhD is referred to as a 'passport' to a better job, a better live and a higher prestige. When we try to examine closely what a PhD is, we will find that it has many meanings and it has also change over time. In fact, different countries have different system of doctoral system. According to [1], in the USA, the PhD phase is a genuine period of postgraduate training that includes both theory and research, with a greater emphasis on course work and the possibility of rotating through different laboratories. In Nordic countries, the situation is more complex: some universities adopt the

US model, whereas some focus on publication output, and others are variations of these. In Germany, it is necessary to spend up to two years on a diploma degree before moving on to a PhD. Many other countries require their PhD students to teach undergraduates. In some systems, the final examination is a mere formality with an inevitably positive outcome; in others, it is a rigorous cross-examination by jury. We can agree though that a PhD is an award to an expert who has proven their scientific worth.

Just like there are many meanings of a PhD, there are also many reasons why students enrol for Doctoral Programs. To embark on a PhD program is a major decision. It cost a lot of money and requires a large time commitment as well. Perhaps the anxieties faced by doctoral students can best be depicted by the Figure 1.
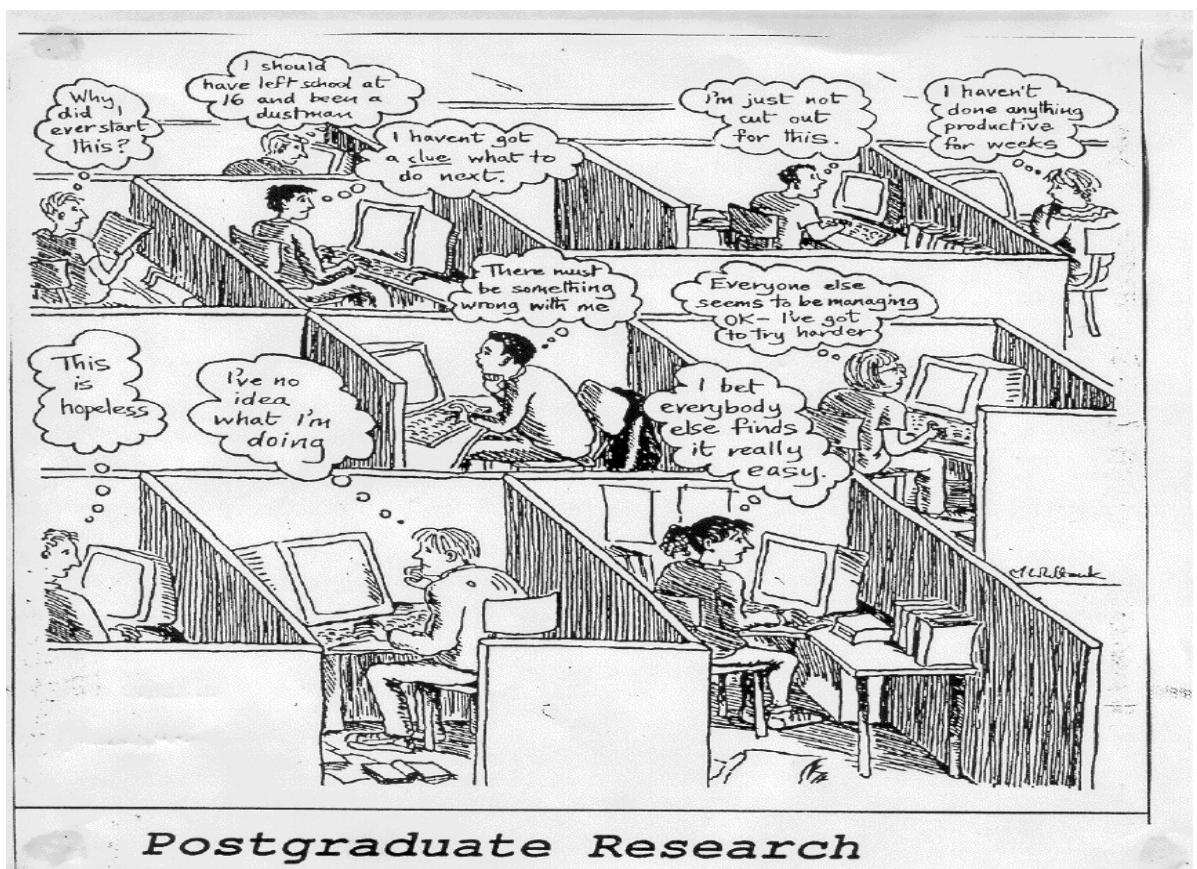
Source: [17]

With the advent of the Internet Technologies and e-learning systems, students can now select between a conventional and an online doctoral program. Most doctoral students are working adults and the online program is more suited to them. Asia e-University is a new regional university created under the auspices of the Asian Cooperation Dialogue in June 2008. It is a dual mode university which enjoys the resources and strength of 31 different countries in Asia. AeU Malaysia started humbly with three schools of study and has now developed partnerships with industries offering specialisation programs catering for current demands of the industry [2]. The University is working constantly at improving its program, the quality of its teaching and supervisory service to its students and

academic staff. Designing a good online doctoral program is very important because the latest enrolment figure showed that 88% of the students are postgraduates. The online doctoral program must be able to produce quality theses and ensure students finish on time. It has been generally observed that [3] students who opt for an online doctoral program will enjoy the following benefits:

I. Accessibility**:** A student can attend online classes from anywhere.
II. Flexibility: A student can work when it make sense for him/her - at night, morning, wee-hours and not tied to a class schedule (usually)
III. Interpersonal Breadth**:** Peers will include students all over the country and even the world. It is possible to have online students such as military personnel working overseas as well as adults in many countries.
IV. Cost: An online education does not require that a student to relocate to a new place or forgo his/her full time work.
V. Documentation: Documents, transcripts, live discussions and training materials are all archived and recorded so that they can be retrieved via mail, e-mail or the school's website for reading, downloading, and printing.
VI. Access**:** Supervisors are also available, respond quickly through email, and generally are prepared to work with diverse students with a range of lifestyles and needs.

However, there are also disadvantages with online doctoral programs. They can be listed as follows:
I. Employment: A student may find that you have to discuss the validity of their degree. Information about the school's accreditation and, if needed, copies of syllabi and sample assignments will convince employers.
II. Communications: Most of the student's communication will be through email. It is also likely that he/she might miss the sound of an instructor or peer's voice.
III. Courses: Not all courses of study are easily available online. If a student is interested in a more unusual field, he/she may have to search for the specific program.

Since AeU attracts and targets working adults to enrol in their programs, designing good online doctoral programs is crucial.

2. Issues or challenges related to online Doctoral Programs

There has always been a concern among universities on the rate of PhD completion. According to a study conducted by [4], the percentage of full time students starting their doctoral program in the academic year of 1996-7, only 36% completed within 4 years, 57% completed within 5 years and 71% completed within 7 years. The completion rates highest in the natural sciences, lowest in the arts and humanities. This can be due to many factors such as the mode of supervision, monitoring mechanism, technical or infrastructure facilities and active discussions / interactions with other researchers.

Supervision
Doctoral supervision is becoming to be more and more challenging as it now involves more tasks [5] This include aadministration (including appropriate record-keeping), referring candidates for appropriate skills development sessions, scheduling and conducting

supervisions and supporting candidates in the writing up of the thesis and preparing them for the viva [6]. Supervisors are confronted with the question of supervisory style. How involved should supervisors become with individual candidates and their work? It is possible for supervisors to adopt 'Low' and 'high' levels of structure and support. This can be illustrated by Figure 2. In the Laisser-faire style, the supervisor assumes that the student is capable of managing both project and themselves. In the pastoral style, the supervisor assumes that the student is capable of managing project but needs personal support. In the directorial style, the supervisor assumes that the student is not capable of managing research project but can manage themselves. The contractual style is where the supervisor assumes that both project management and personal support have to be assisted. A question which a supervisor will ask and choose is: - Which mode of supervision is the most suitable for online doctoral programs?

Monitoring

To ensure that doctoral candidates complete their program in time, progress monitoring is crucial. Conventional PhD programs have used progress reports to serve as 'checkpoints' to assess students' progress [7]. An example of such practice can be described as in Table 1. Our question now will be: What kind of 'checkpoints system' can we have for online doctoral program?

3. Requirements for successful online learning

The success factors for online and conventional learning are different. In an online course, students access the course materials over the Web at any time of day or night. Online learning requires students to be resourceful and a huge portion of the learning activities are independent learning. The materials students acquire in the course comes from the online modules which are complemented with textbook and other readings, along with what they get from the digital library, Internet resources, CD-ROMs, and other resources. Students in an online course depend on conferencing software, email, and other asynchronous modes of communication for the interaction they have with each other and with the instructor. This interaction is the core of the course. In an online course, students cannot simply raise their hand to ask a question as they would in a classroom. Email and conferencing software will make up for this, since having to type out a question forces more reflection before posting it. However, with the flexibility of the Web, students will never have to miss vital class discussions. They can log on and access class materials and discussions at virtually any time of day [8]. Finally, the potential for collaborative work and small-group discussions among students who may never meet face-to-face is what makes Web-based courses an exciting and powerful educational format [3]. Figure 2 describes the complete requirements for a successful online student.
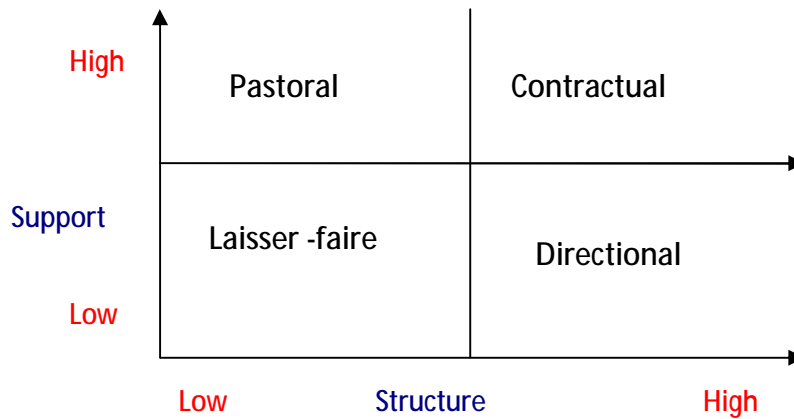
Figure 2: Paradigms of supervisory styles
Source:[13].

Table 1: Time line for PhD (By Thesis - Optimum Period: 4 years)

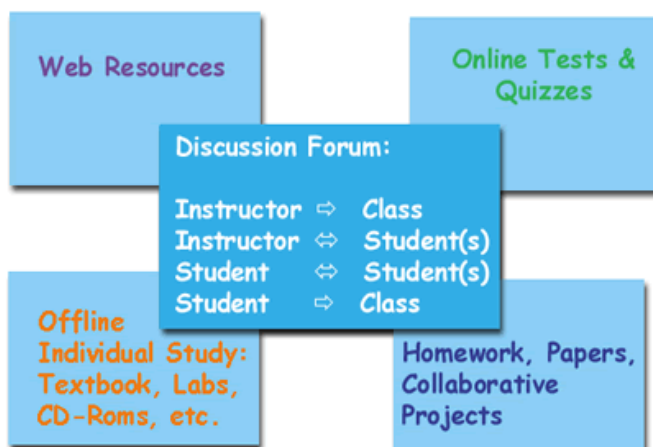| Stage 1	Stage 2	Stage 3	Stage 4
Preparing PhD Research Proposal	**Research process / Data Collection**	**Thesis writing**	**Examination and Viva Voce**
Semester 0 - 3	**Semesters 4 - 7**	**Semester 8 - 11**	**End of Semester 11 - 12**
• Nomination of supervisor(s) < 4 weeks; • Up to 3 attempts of research proposal; and • Must pass research proposal before proceed to Stage 2.	• Seeking permission for data collection; • Instruments validated and reliability checked; • Data collection.	• Data collected • Analyses of data • Writing of chapters • 3-month notice • 5 soft bound copies submitted for examination • Nomination of examiners: 1 internal + 2 externals	• Thesis sent for examination; • Reports of examiners • Examination committee & viva voce • Corrections of thesis • Graduation
Note: Each academic year has three semesters: September semester (20 weeks), February semester (20 weeks), and June semester (12 weeks).			

Figure 2: Requirements of an Online Student
Source: [3]

In general, online students [9] are encouraged to develop the following qualities in them:

a) Be open-minded about sharing life, work, and educational experiences as part of the learning process.
b) Be able to communicate through writing.
c) Be Self-motivated and self-disciplined.
d) Be willing to "speak up" if problems arise.
e) Be willing and able to commit to 4 to 15 hours per week per course.
f) Be able to meet the minimum requirements for the program.
g) Accept critical thinking and decision making as part of the learning process.
h) Have access to a computer and a modem.
i) Be able to think ideas through before responding.
j) Feel that high quality learning can take place without going to a traditional classroom.

3.1 Active discussions / interactions with other researchers

The journey to the award of a PhD degree is often a long and lonely one. Despite the uniqueness of each students research project, they are required to interact with other researchers, to cultivate critical thinking, conduct intellectual discourse and collaborate on research ideas. For this reason, it is even more important that online students have access to the right technical support and facilities. An online student is expected to:

Participate in the virtual classroom 5-7 days a week
Be able to work with others in completing projects

Be able to use the technology properly
Be able to meet the minimum standards as set forth by the institution
Be able to complete assignments on time
Enjoy communicating in writing.

4. A Comparative Study of Online Doctoral Program

Online doctoral programs are beginning to be offered by Universities offering online programs. Besides online doctoral programs which are full research in nature, there is now a trend for doctoral programs which are structured around the semester system.

The University of Phoenix offers a Doctor of Management in Organizational Leadership with a Specialization in Information Systems and Technology program. The students are required to take 17 courses which amount to 49 credit hours and Doctoral Seminars I, II, II and IV, making up 13 credit hours. The entire program will be 62 credit hours which involves both residency and online modalities of instruction. The successful completion and oral defence of a significant, substantial, and independently completed doctoral dissertation that adds new information to the body of information systems management knowledge. The dissertation provides the learner an opportunity to demonstrate mastery of germinal and current literature and express their competence in applying learning to actual organizational issues. To ensure the quality of this effort, the program's curriculum is designed to develop the student's ability to create original solutions to complex issues and to carefully identify and apply

the most appropriate research methodology for addressing these issues [10]

The School of Science and Engineering, Atlantic International University offers a Doctor of Information Technology (D.Sc.) program. The structure of this program is very flexible and dynamic. The program not only allows students to study and research multiple key areas of computer science to develop a unique foundation of practical knowledge and computer science theory, but it is tailored to the requirements of each student. In the end, it will become a custom-made program, designed just for a student by the student him/herself and the chosen advisor. This flexibility to meet a student's needs is seldom found in other distance learning programs. The program does not require every student to study the same subjects and use the same books and other learning materials as every other student. Instead their online Doctoral programs are designed just for an individual student. They are individually designed to meet a student's needs and help him/her to reach his/hers professional and personal goals [11].

The University of Nova Scotia, Canada, offers a Ph.D. in Computer Information Systems with Concentration in Information Security. It is offered in the cluster format, which combines traditional and online instruction to provide professionals the opportunity to pursue graduate study while continuing to work in their current positions. The program is especially well suited to information technology professionals in business, government, industry, or education who are involved with research, design, implementation, management, evaluation, utilization, or teaching of computer information systems. It provides information technology professionals with the knowledge and ability to develop creative solutions to substantive real-world problems. Each student must complete eight core courses, two research project courses, and a dissertation. The program requires 64 credit hours, of which 40 are for courses and 24 are for the dissertation [12]

After studying different models of doctoral programs, we formulated our own model and tabled it for the approval of the Malaysian Quality Assurance body. AeU offers two modes of PhD programs; PhD by full research and Doctor of ICT by coursework and dissertation. For the first option, a PhD candidate will be required to sit in a Research Methodology class. Following that, the candidate is expected to be able to conduct the research and write his thesis with the guidance of a supervisor. As for the second mode, a PhD candidate is required to take ten 3-credit hour courses and produce a dissertation of 80,000 words.

5. Discussion and Conclusion

When we were developing our online doctoral program, we do so with the objective of producing quality graduates with excellent theses. As highlighted in section 2.1, deciding on how best to supervise a graduate student is going to be an important decision. The challenge of supervising online students need not necessarily be any harder or easier than conventional students; it is just that they are different [13]. Therefore, if we can come up with a program that makes supervision easier and more effective, then it is worth championing for. The program must be designed in such a

way that it enables the supervisor to bring the best out of a student.

To ensure that students finish in the optimum period, progress monitoring cannot be taken lightly. As illustrated in Table 1, effective monitoring can be incorporated in an online doctoral program. Effective monitoring as highlighted in section 2.2 is another contributing factor towards the timely completion of a doctoral program. This practice has been introduced by the University of Nova Scotia, Canada, and AeU will emulate it. From the website, it is unclear how this is actually practiced, but for AeU, it will be done online. Meaning that, the candidate will upload whatever deliverable that has been produced into the learning management system. Students are evaluated on a number of occasions regarding their dissertation progress. The purpose of such evaluation is to provide students with relevant and timely feedback concerning their overall performance in the dissertation process and to serve as a screening procedure [14]. Failure to demonstrate the ability to complete a dissertation or to maintain satisfactory progress on the dissertation may result in review by the Academic Review Committee and possible probation, suspension, or dismissal from the Ph.D. program. The evaluation is updated online and the students can retrieve the feedback comments at his/her convenience.

As emphasised in section 2.3, meeting the requirements of an online doctoral is essential and therefore should be made available. AeU, being a young University is fortunate that it can adopt the latest technology and capitalise on lessons learnt from older Universities. We make use of open source systems to support our digital library system, e-learning system, online conferencing,

email system and students' registration system. As highlighted in section 2.4, it is important for doctoral to participate in intellectual discussion, collaborations, forums and we have taken all the necessary actions to meet all the requirements of online doctoral students.

As technology evolves, our society grows increasingly sophisticated and this results in a changing culture which in turn produces the new generation of youth that we conveniently called e-generation or e-geners. This new generation of youth have a higher level of independence and resourcefulness compared to older generation of youth. They communicate differently (emails, mobile phones etc), their hobbies are different (computer games, movies from DVDs etc) and the even study differently (research the Internet, digital library, join newsgroups, special interest groups etc). They are good at integrating information – they can open multiple pages/windows and synergise information from different sources [15].

In developing an online doctoral program, we have exercised extreme caution to overcome the situation faced by many postgraduate students such as those brilliantly described in Figure 1, assist supervisors in their job of advising and guiding doctoral students. We have also taken care of the administrative part of the whole process by providing stable and state of the art technical support. It is noted that, the ingredients in the recipe for the success of doctoral students is in constant need of reviewing and adjustments. Therefore, a university should constantly appraise and enhance its online doctoral program.

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