

Instructional and Learning Design in Open and Distance Learning (ODL) in Higher Education

Yusup Hashim (PhD)
Asia e University
yusuphas@gmail.com
Yusri Yusup (PhD)
Universiti Sains Malaysia
yusriy@usm.my

ABSTRACT

With the advancement in new technologies and pedagogy in 21 Century education, you may have the choice of doing higher degree as a part-time or full-time student especially in a postgraduate programme. In this paper, the authors, sharing their experiences, argued that part-time distance learners may complete the degree full-time as long as they are able to complete the stipulated Student Learning Time (SLT) required for a degree program regardless whether they are doing full-time on campus or part-time at a distance. However, to accomplish this, ODL providers in higher education need to integrate distance learning theories, online technology and pedagogy in the instructional and learning system to enable the part-time distance learners to complete the program equivalent to full-time program. A comparison is made between part-time online distance learning and full-time blended face-to-face mode, explaining the different instructional methods and technologies used and the SLT allocated for each mode.

Key words: Open and distance education; distance learning, online learning; blended learning; distance learning theories

INTRODUCTION

With the advancement in new technologies and pedagogy in 21 Century education, you may have the choice of doing higher degree as a part-time or full-time student especially in a postgraduate programme. The number of courses and credit hours and student learning time (SLT) are still the same for both modes except in part-time Open and Distance Learning (ODL) System, the entry level qualification is comparatively lower and the duration of the programme is longer. However, part-time students may complete the programme earlier if the pedagogical approach employs distance learning technologies, theories and practices. This means doing part-time through distance education, may enable part-time distance learners to complete the programme within the same period as in full-time programme and maintain the same quality as in full-time conventional mode. In fact, several recent studies indicated that those learning at a distance performed significantly higher than traditional learning (Simonson, Smaldino, Albright & Zvacek, 2012). In a recent study, researchers from MIT, Tsinghua University, China and Havard University reported that all cohorts taking An Introductory Course in Physics through Massive Open Online Course (MOOCS) performed equally well as in traditional courses (Colvin, et al. 2014). A study by Sloan Consortium reported that online distance learning is becoming popular and close to 70% of higher education institutions reported online education was critical to their long-term strategy (Allen & Seaman, 2013).

In this paper we are going to examine the pedagogical aspect of distance learning as reflected in Moore's independent and interaction theory (1983, 1989), Skinner's programmed instruction (1958), Wedemeyer's independent study (1971) and Bloom's mastery learning theory (1969). These classical theories will enlighten part-time distance learning operators and practitioners to plan, manage and run distance-learning programme. However, emerging learning theories such as constructivism and connectivism will be adapted to support the distance learning theories. They will be examined and adapted in part-time distance learning programme to bridge the pedagogical gap or transactional distance between full-time programme and part-time programme (Moore, 1993, 2007). The gap between distance learners and distance learning tutors will be reduced using appropriate and carefully planned learning materials, learner-tutor interaction and learner-learner interaction. A comparison between full-time course and part-time distance learning course based on different delivery modes will be explained later.

So it does not matter whether you are doing part-time or full-time, on-campus or off campus as long as you are able to complete the course and the required SLT supported by the right distance learning technologies and distance learning pedagogical approach.

Open and Distance Learning: Blended and Fully Online Learning

We are aware that there is a great deal of diversity among course delivery methods used by individual instructors and teachers. Basically there are 4 classifications of delivery mode: 1. Traditional face-to-face, 2. Web-facilitated, 3. Blended and 4. Fully online (Allen & Seaman, 2007, 2013). In open and distance learning (ODL), the delivery mode can be blended, a combination of face-to-face and online or fully online. In the face-to-face mode, the instructor delivers lectures, tutorials or uses varieties of instructional methods and learning materials, print and electronic, in live classrooms or labs. Basically, the approach is teacher-centred or a combination of teacher-centred and learner-centred. The instructor also supplement the face-to-face mode with online learning using web-based materials or Open Education Resources (OER) available in the Internet or structured materials in the form of self-instructional materials (SIM) usually parked in a Learning Management System (LMS) such as *Blackboard*, *Moodle* or some home-grown LMS or bespoke system developed locally by the institutions as practised in most distance learning institutions such as Open University Malaysia and Asia e University

On the other hand, in fully online, typically there is no face-to-face interaction between the lecturers and the learners (Allen & Seamen, 2007, 2013). This is what the Commonwealth of Learning (COL) defines open and distance learning as a learning system, which uses technology to mediate instruction and learning (COL, 2005). To substitute the face-to-face component, online learning technologies such as audio and video conferencing are used, delivered individually or in group using text, audio and video tools available in the Internet or using mobile learning technologies. Examples of audio, text and video tools with one-to-one or group interaction are *Yahoo Messenger*, *Skype*, *Dim-dim* and *Ovoo*. Examples of mobile learning technologies are cell phones, personal digital assistant, tablets and laptop computers. A study on mobile learning perception among Asian learners indicated that their interest level and attitudes towards having the option of mobile learning were reported very high (Karimi, et al, 2010). The online lecture or interaction can be delivered synchronously (real time) or asynchronously (delayed time). Both interactions are expected to substitute the face-to-face

or the conventional mode. The Sloan Report (2007) recommended that 80% or more of the course content could be conducted in online mode (Allen & Seaman, 2013).

In fully online mode, structured materials in the form of Self-Instructional Module (SIM) become the main learning materials. Usually SIMs are parked or downloaded in the LMS. Learners can have access to SIM at anytime and anywhere. SIM is a self-instructional module designed for a particular course using instructional design principles. Learners can learn and manage their own learning. The module consists of pre-test, learning outcomes, learning activities with examples, test items, answers and post-test (Yusup, 1999). Learners enrolled in fully online courses are expected to complete and master the module at the end of the course. The module will be used to replace the lecturer in the face-to-face mode. So learning can happen with the absence of a teacher in class. However, few face-to-face interactions are recommended to motivate distant learners. Perhaps, social network may reduce isolation and loneliness among distance learners (Holmsberg, 1993; Anderson, 2013).

Blended Learning in Conventional Universities

Can blended learning or fully online learning be conducted full time? It is not unusual for face-to-face instruction (FtF) to be conducted full-time as practiced by most conventional universities. And it is a common practice for blended learning or fully online learning to be done part-time and at a distance as done by most open universities in UK, Netherlands, USA, Canada, West Indies, Australia, Hong Kong, India, Pakistan, Turkey, Thailand, Indonesia and Malaysia.

In conventional universities, usually two types of delivery modes are used: FtF and blended learning (a mixture of online and FtF). This is different from dual-mode universities that offer two degree programs that is full-time face-to-face and ODL in a single institution. Table 1 shows the proportion or percentage of delivery mode normally practiced in most conventional higher education institutions. As an example, assuming that the course is a 3-hour credit per week for 14 weeks, in conventional mode 28 hours is allocated for FtF lecture and 14 hours for FtF tutorial with no online lecture/tutorial, making a total of 42 hours or 100% of the FtF delivery. On the other hand, in blended learning, about 20 hours of FtF lectures and 10 hours of FtF tutorials are allocated making a total of 30 hours or 70% of FtF delivery (Table 1). The online component consists 6 hours of online lecture and 6 hours of online discussion making a total of 12 hours or 30% of online delivery. However, the number of hours or percentage (along the continuum 70 FtF :30 online) varies from one institution to another depending on the availability of online technologies, types of programmes as well as pedagogical and technological skills of the lecturers. The Sloan Consortium (2013) recommended that in blended learning 30% - 79% of the content may be delivered online (Allen & Seaman, 2013).

Comparison of Full-time and Part-Time Program

Now let us discuss whether is it feasible for blended learning or fully online learning done at a distance to be conducted full time? This is a controversial issue faced by institutions offering full time course and courses offered at a distance or dual mode. Leaders in higher education need to adapt to this new development particularly on leadership style and appropriate use of distance instructional methods and distance learning technologies (Nworie, et al,2012). Courses offered at a distance are usually labelled as part-time course because the students

are not in campus. Such label is based on location or geographical separation, not based on student learning time (SLT).

This issue is important because it will save time and cost for the learner and stakeholder. A person doing a five-year undergraduate program under full-time mode can complete the programme in three years doing part-time and at a distance. We will address this issue by comparing program conducted full time face-to-face and program conducted part-time and at a distance. Part-time program is synonymous with distance or online learning. The comparison and examples below are based on the author's experience running graduate and undergraduate programmes full-time and at a distance.

Table 2 compares the student learning time (SLT) for a three-credit undergraduate course taken full-time and part-time. The total SLT for both programme is 120 hours. One credit hour is equivalent to 40 SLT (MQA, 2007). For 3 credit hour the total SLT is 120 SLT (3 credit x 40 hours). Full-time course uses blended learning mode while part-time course uses fully online mode. The part-time course has more online mode with very little face-to-face mode while the full-time course has more face-to-face supported by web-based learning. Since there is no difference in SLT for both programmes, part-time programme in ODL mode is equivalent to full time blended mode. So a course done in ODL mode, which is usually labelled as part-time course can also be done full time even if learners are not in campus. Adult learners who are working, can plan and manage their own learning at any time and anywhere. Distance learning theories, practice and technologies especially online learning technologies can help students to complete their academic programme earlier.

Table 1: Proportion (in Percentage) of Delivery Mode in Conventional Institution

Mode	Ftf		%	Online		%	Total %
	Lecture Hours	Tutorial Hours		Lecture Hours	Discussion Hours		
Conventional (Traditional)	28	14	100	-	-	-	100
Blended	20	10	70	06	06	30	100

Distance Learning Application in ODL Blended and Fully Online Mode

Pedagogy and technology are two important elements in ODL. The pedagogy consists of Guided Learning (GL) and Independent Learning (IL). Both originates from Skinner's classical programmed instruction (1954) and independent learning theory (Wedemeyer, 1981; Moore, 1983), distance learning interaction theory (Moore, 1989) and online learning theory (Anderson, 2008). GL is structured and teacher-centred learning, manage and implement by teachers. Instruction or learning is programmed and structured in the form of SIM supported by face-to-face tutorial and online discussion. Learners learn at their own pace and learning units are sequenced from easy to difficult learning units. Learning units are designed and developed based on instructional systems design (Dick and Carey, 1990; Heinich et al., 1996) and Bloom's mastery learning theory (1969).

IL is learning that is student-centred, self-regulated and self-directed. The learning is defined, managed and completed by the learner. Learning is the responsibility of the learner to acquire

knowledge, skills and attitude through his/her own efforts and develop the ability for inquiry and critical thinking. Teachers may act as facilitators or guides. The learner is free to learn at his/her own pace, time and place, plot his/her own learning path, value his/her own research as well as input from peers through collaborative learning and research with teachers or education experts as facilitators. In distance learning, learner can interact with teacher, learner-learner and learner-content (Moore, 1989; Anderson, 2008).

In ODL blended mode, GL consists of online self-instructional module (OSIM), face-to-face tutorial (TFtF), and discussion online (DO). The total SLT for GL is 60 SLT (Table 3a). Independent Learning consists of Online Collaborative Learning (OCL), Assessment (A) and Learning Activities (LA). The total SLT is also 60 (Table 3b).

Online Self-Instructional Module (OSIM)

OSIM consists of 32 SLT in blended mode and 28 SLT in fully online. The learning material are online and self-instructional, distributed to the learner. In blended mode the learner needs to go through each lesson and do the learning activities, take the pre test and post test. In a structured module, the learner needs to reach mastery in one lesson before continuing to the next lesson. SIM can be accessed online or provided in CD (compact disc) format depending on the availability, affordability and learning needs of students. The approach used in distance education is personal and learner-centred with the teacher playing the role of facilitator. Personal here means the way learning is designed and developed, delivered and supported. The interaction is learner-content.

Face-to-Face Tutorial and Tutorial Online

In blended mode, 10 SLT is allocated for tutorial face-to face (TFtF) and 14 SLT for fully online (TO). FtF is a face-to-face discussion while tutorial online (TO) is online discussion between students and academic facilitators on the SIM content. This session will provide two-way dialogues between the teacher and the learner. Students are required to read the lesson and discuss with the facilitator about the topic or the units in the module.

Table 2: Student Learning Time (SLT) for 3 Credit Course

Interaction (Blended)	Full Time Face-to-face Undergraduate		Interaction (Fully Online)	Part-time Distance Learning Undergraduate	
	Methods	SLT (Hours)		Methods	SLT (Hours)
Teacher-Learner (Teacher-centred)	Face-to-face Lecture (Synchronous) Content from text book/SIM (14 weeks x 2 hours)	28	Learner-Content (Learner-centred)	Online Self-Instructional Module (SIM) (Asynchronous) SIM in LMS (14 weeks x 2 hours)	28

Teacher-Learner (Teacher and Learner-centred)	Tutorial Face-to-face (Synchronous) (14 weeks x 1 hours)	14	Technology/Media-learner (Teacher and Learner-centred)	Tutorial online (Synchronous) Audio, video conferencing 14 weeks x 1 hour) **Tutorial Face-to-face	12 02
*Learner - Materials (Learner-centred)	Assessment Text book, Internet-based/OER (Asynchronous)	18	Learner-Content (Learner-Centred)	Assessment Exercises in SIM and Internet-based/OER (Asynchronous)	18
Learner-Materials (Learner-centred)	Learning Activities (exercises in SIM, Project, portfolio)	22	Learner-Materials (Learner-centred)	Learning Activities (Online collaboration) Project, portfolio	26
*Teacher - Learner (Teacher and Learner-centred))	Discussion online Use of LMS (Asynchronous)	14	Teacher-Learner (Teacher and Learner-centred)	Discussion online (DO) (Asynchronous) Forum in LMS	14
Learner - Learner (Learner-centred)	Face-to-face Group Collaboration (Synchronous)	10	Learner-Learner (Learner-centred))	Collaboration online Use of social media, e.g., Wikis, Blogs (Synchronous)	20
*Learner - Learner (Learner-centred)	Online Collaboration Use of social media, e.g., Blogs, Wikis (Asynchronous)	14			
TOTAL	(3 credit x 40 hours)	120			120

*Online component = 46 SLT

**Face-to-Face component = 2 SLT

Table 3a: Applying ODL System in ODL Institution (Blended Mode)

SEMESTER 1 YEAR 1							
Method	Guided Learning (60 hours)			Independent (60 hours)			Total (SLT)
<u>Guided Learning</u>							
Online Self-Instructional Module (SIM)	OSIM	TFtf	DO	OCL	A	LA	
Tutorial Face-to-face (TFtf)	_____						
Discussion online (DO)							120
<u>Independent Learning</u>							
Online Collaborative Learning (OCL) Assessment (A) Learning Activities (LA)	32	10	18	10	18	32	
CREDIT VALUE				3			

Table 3b: Applying ODL System in ODL Institutions (Fully Online)

SEMESTER 1 YEAR 1							
Method	Guided Learning (60 hours)			Independent (60 hours)			Total (SLT)
<u>Guided Learning</u>							
Online Self-Instructional Module (OSIM)	OSIM	TO	DO	OCL	A	LA	
Tutorial Online (TO)	_____						
Discussion Online (DO)							120
<u>Independent Learning</u>							
Online Collaborative Learning (OCL) Assessment (A) Learning Activities (LA)	28	14	18	10	18	32	
CREDIT VALUE				3			

In blended mode, some institutions allocate FtF tutorial for the distance-learning students to discuss about the course outline, assignment and examination schedule. For example they will meet for 3 - 5 sessions of FtF per semester for 10 - 15 hours. The instructional hours in FtF tutorial depends on the institution but it should be around 30% of the FtF (Allen & Seaman, 2013) (Table 4). During the FtF session, students will also be given written examination or short quiz at end of tutorial sessions. They will also be evaluated for attendance and group presentation. The interaction is teacher-learner. However, some ODL institutions may or may not include the face-to-face component (Keegan, 1991). In other words, students are allowed to do fully online. In fully online mode, TO is used to discuss online assessments and presentations using LMS. Audio and/or video conferencing such as *Skype*, *Dim-Dim* or *Ovoo* is used as the medium of interaction. The interaction is Learner-Technology/Media.

Table 4: Estimated Percentage of Blended and Fully Online Learning in ODL

Mode	Ftf		%	Online		%	Total %
	Lecture (Session)	Tutorial (Session)		Lecture (Session)	Discussion (Session)		
Blended	3-5	3-5	21-35	11-09	11-09	78 - 64	100
Fully Online	0-2	0-2	0-14	14-12	14-12	100- 85	100

Note: 1 semester = 14 weeks of class session (Ftf + Online)

Discussion (DO)

Discussion online (DO) of 18 SLT (blended mode) and 18 SLT (fully online) is a two-way discussion between teacher and learner using Learning Management System (LMS) as the learning platform such as Moodle (open source), and Blackboard (commercial). Online facilitators will create threaded discussion groups and provide discussions topics for the learners to discuss and provide feedback to the facilitators. Learners are also encouraged to discuss individually or work in groups (cooperative learning). Grades will be given based on the quality and number of hits in the discussion. The interaction is teacher-learner.

Online Collaboration Learning (OCL)

Online collaboration is learner-learner interaction between groups using social media such as *Wikis*, *Blogs*, *Twitter*, *Facebook* and other pedagogical or online communications tools such as email, *LinkedIn*, *Line*, *Telegram* and *WhatsApp*. However, to enable them to interact and communicate they need to be connected online. Seimen (2014) introduced the connectivism theory and believed that learners need to be connected in order to nurture and maintain continual learning in digital age. OCL consists of 10 SLT (Blended mode) and 10 SLT (Fully online mode). In OCL the group will initiate discussion by suggesting certain topics of interest and relevant to the course program. Members in the group are welcomed to discuss and give opinions. OCL will give the opportunity to build critical thinking, creativity as well as to construct new ideas and skills. The interaction is learner-learner.

Assessment

Assessment is learner interaction with learning materials to assess student progress and provide feedback. It consists of 18 SLT in blended learning and 18 SLT in fully online. In blended mode the assessment can be FtF taken online or both. Online assessment consists of short-answered structured question, true-false, fill-in-blank and multiple choice questions built in LMS. Formative assessment is provided at the end of each learning unit in the SIM and it is used to provide feedback during the learning process. In online assessment, multiple choice questions are posed and feedback is provided to learners immediately or after the assessment. It is to determine whether learning happens and to what extent and make a choice whether remedial or enrichment actions need attention. Formative assessment is a continuous process until mastery is reached. Other assessment items include complex activities that require longer time such as capstone, project, portfolio and problem solving activities usually given at the end of the course. SIM also provides model answers, examples, and link to references and resources at the end of the module to enable learners to assess their own progress. Baath (1980) believes that if SIM provides sufficient exercises and learning activities, learners may not or send few assignments to be graded by the course teacher. This will help reduce the assessment problem encountered by online tutors having large classes or huge number of students enrolled in ODL courses. Peer review is another form of assessment that help distance learning tutors to cope up with large number of students as practised in MOOCS.

Learning Activities

Learning activities consists of 32 SLT in blended mode and 32 SLT in fully online. In blended mode, learners go through every lesson in the SIM, read recommended reference books, review articles in journals at home or in the library, doing course assignments, portfolios, project and group discussion in FtF mode or online using social media. In Blended mode, instructors may use the flipped classroom strategy to help distance learners engage in learning activities.

In the case of online learning some of the learning activities include: synchronous and asynchronous online discussions, online self-assessments, blogs, wikis, virtual field trips, virtual labs, case studies, simulations, problem solving, concept mapping, and interactive learning objects. Some of these online learning activities are downloaded in the LMS (log into LMS). Learning objects and reusable learning activities can be found in online repositories such as Merlot (<http://www.merlot.org/merlot/index.htm>). The learning activities or tasks can be short or straightforward such as quizzes or MCQ that can be completed in a short period of time, or more complex activities that require more time such as problem solving or project-based learning involving online collaboration in virtual groups between students. Flipped classroom strategy may be adopted to get distance learners engaged in learning activities. All activities should promote meaningful engagement and adhere to course goal and objectives as stated in course outline.

Conclusion

Advancement in distance learning technologies and media especially in ODL system has a profound impact on the present educational system. Distance learning started with correspondence course via postal service followed by broadcast media (Radio and Television)

via telecommunication technologies. The print-based and on-air technologies in the early days provided the opportunity for remote learners especially in developing countries or working adults to have access to higher education but take a longer time to complete a degree. Today the development in online learning, network and mobile technologies has shortened the time taken to complete a degree. More and more higher institutions of learning are offering online courses either in blended mode or online (Allen & Seaman, 2013). MOOC (Massive Open Online Course) started by Stanford (eg. Coursera) in 2011 and MIT and Harvard (eg. edX) in 2012 and Open University UK (eg. FutureLearn) (Bates, 2015) provides the opportunity for distance learners from anywhere in the world to have open and free quality education from the best online professors. Learners can complete a degree at a distance without studying full-time on-campus. It is possible to complete a degree at distance part-time or full-time with the same timeframe as long as the learner completes the required coursework and SLT. This development is likely to pose a challenge for higher education leadership especially in distance education system and researchers to conduct more research on distance learning theories and online learning technologies and examine their impact on teaching and learning in ODL system.

References

- Allen, E, Seaman, J & Garrett, R. (2007). *Blending in: The extent and promise of blended education in United States*, Annual Report, Sloan Consortium, Babson Survey Research Group (http://www.sloan-c.org/publications/survey/staying_course)
- Allen, E. & Seaman, J. (2013). *Changing course: Ten years of tracking online education in United States*, Babson Survey Research Group.
- Anderson, T. (2008). Theory and practice of online learning, (2nd Edition). In T. Anderson (Ed.) *Theory and practice of online learning* (pp. 273-294). Athabasca: Athabasca University, (http://www.aupress.ca/books/Terry_Anderson.php).
- Baath, J. (1980). *Postal two-way communication in correspondence education*. Lund: Gleerup
- Bates, T. (2015) Teaching in Digital Age. Retrieved from <http://opentextbc.ca/teachinginadigitalage/>
- Bloom, B.S. (1969). *Taxonomy of educational objectives: The classification of educational goals*. London: Longman Group.
- COL, (2005). *Creating learning materials for ODL: A handbook for authors and instructional designers*, Vancouver: Commonwealth of Learning.
- Colvin, K., Champaign, J., Lui, A., Qian Zhou, Fredericks, C & Pritchard, D. (2014). Learning in an Introductory Physics MOOCs: All cohorts learn equally, including an on-campus class, *The international Review of Research in Open And Distance Learning*, 14 (4)
- Dick, W. & Carey, L. (1990). *The Systematic design of instruction* (3rd Edition), Glenview, IL: Scott Foresman.
- Heinich, R., Molenda, M., Russell, D. & Smaldino, S.E. (1996). *Instructional Media and the New Technologies for learning*, (5th Edition). Englewood Cliffs, NJ: Prentice Hall.
- Karimi, A., Hashim, Y. & Khan, N.M. (2010). Mobile learning perception and interest among higher education distance learners in Asia, *Proceedings of the Global Learn Asia Pacific 2010*, AACE, pp. 4130–4139.
- Keegan, D. (1991). *Foundations of distance education* (2nd edition). London: Croom Helm.
- Moore, M. G. (1983). On a theory of independent study. In D. Stewart, D. Keegan, & B. Holmsberg, (Eds.), *Distance education: International perspectives* (pp.68-94). New York: Croom Helm.
- Moore, M. G. (1989). Three types of interaction. *Readings in principles of distance education* (pp.100-105). University Park, PA: American Centre For The study Of Distance Education.
- Moore, M. G. (Ed.). (2007). *A handbook of distance education* (2nd Edition). London: Lawrence Erlbaum Associates.

- Moore, M. & Kearsly, G. (2005). *Distance education: A systems view*. Belmont, CA: Thompson Wadsworth.
- Moore, M.G. (1993). The theory of transactional distance, In D. Keegan (Ed.), *Theoretical principles of distance education* (pp.22-29). New York: Routledge.
- MQA (2007). Malaysian Qualification Framework. Ministry of Higher Education, Retrieved 30 April, 2014 (http://cgs.unimap.edu.my/flashxml/2011/12/MALAYSIAN-QUALIFICATIONS-FRAMEWORK_2011.pdf).
- Nworie, J. Houghton, N. & Operandi, S. (2012). Leadership in distance education Qualities and qualifications sought by higher education institutions, *American Journal of Distance Education*, 26(3):180-199
- Seimens, G. 2014). Connectivism: A learning theory for the digital age. Retrieved from <http://www.elearnspace.org/Articles/connectivism.htm>
- Simonson, M., Smaldino, S., Albright, M., & Zvacek, S. (2012). *Teaching and learning at a distance*: London: Pearson.
- Skinner, B. F. (1958). Teaching machines. *Science, New Series*, 128 (3330), 969-977.
- Wedemeyer, C. A. (1971). Independent study. In R. Deighton (Ed.), *Encyclopedia of Education IV* (p. 548-557). New York: McMillan.
- Yusup, H. (1999). Are instructional design elements being used in module writing, *British Journal of Educational Technology*, 30(4), 341- 358.