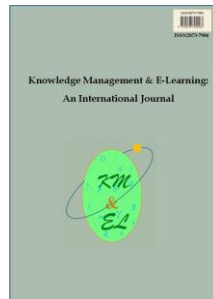

**The evolution of open learning: A review of the transition
from pre-e-learning to the era of e-learning**

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The evolution of open learning: A review of the transition from pre-e-learning to the era of e-learning

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Abstract: This paper offers a summary of the developments that open learning has gone through, from the stages before e-learning emerged to when it carved out a niche position. It first analyzes how open learning moved through five stages, and identifies the characteristics and dominant technology at each stage. The five stages cover the period from correspondence learning in the 19th century to the present era of interactive online learning. It then examines how the term “open learning” has been defined in published work and how the definitions have evolved. From these definitions of open learning, seven semantic components were identified. The frequencies with which each of these components were adopted in the definitions in three periods since 1990 were then analyzed, revealing the changes in the meanings of open learning. In an extended discussion, this paper sums up the evolution of open learning and highlights some of the factors that have driven the changes. It also predicts how education will evolve with e-learning.

Keywords: Evolution; Open learning; e-Learning

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1. Introduction

e-Learning has now become the dominant form of “open learning”, and for more than a decade it has been considered as a synonym for open learning (Hosie, Schibeci, & Backhaus, 2005; Stoffregen, Pawlowski, & Pirkkalainen, 2015). Although now widely adopting e-learning, open learning has had its own development pathway which has distinguished it from education provided by conventional institutions. The distinctive

development of open learning has evolved through stages or generations (Anderson & Dron, 2011; Courtney & Wilhoite-Mathews, 2015).

This article focuses on the development trend of open learning, and attempts to delineate the characteristics of the stages involved. Besides looking at the present e-learning mode, it tracks the features and properties that characterize the individual stages.

In the next section, an attempt is made to depict the core features of the major stages in the development of open learning from more than a century ago to the latest period of e-learning. It then examines closely the semantic contents in the definitions of “open learning” through several recent decades to determine how the meaning or use of this term has changed. The methods employed are explained, and the results are analyzed and discussed.

2. Development stages – From correspondence learning to e-learning

The development of open education can be traced back to the time of correspondence education. The subsections below provide a brief description of the individual historical stages of open learning, outlining their background, media, communication features, and student characteristics and goals.

2.1. Correspondence learning (before the 1960s)

At this stage, as an alternative to the conventional mode of learning in school classrooms, learning was imparted through correspondence as the sole and key means of communication between the teaching institution and the student. In this mode of education, the course content to be learned was primarily conveyed to the students as correspondence, and the student sent their feedback and submitted assignments by mail (Sumner, 2000). Besides the postal service system as the key technology relied upon at the time, the success of correspondence learning can be attributed to the development of the technologies of printing, and mass-produced, low-cost pens (Hamilton, 1990). Examples include Isaac Pitman who offered shorthand courses in England through correspondence in the 19th century (Verduin & Clark, 1991) and Anna Eliot Ticknor, who founded the Society to Encourage Study at Home, in 1873, for female students in America (Holmberg, 1986). The popularity of learning through correspondence was not only developed in England and North America, but also grew across the world, for example in the Soviet Union (Young, Perration, Jenkins, & Dodds, 1980) and East European countries (Kulich, 1985). Universities and private schools also tapped into this education market, offering courses at virtually all levels (Portman, 1978).

Printed materials were the primary resources that students studied and relied on in the learning process. With the growing popularity and availability of radios, audio broadcasts were gradually incorporated into courses with substantial numbers of students spread across a broad geographical area (Cuban, 1986).

In the late 18th century, due to the rapid development of urban and industrial areas, the printing and postal services grew rapidly, which allowed messages to be conveyed between students and their teaching institutions within an acceptable time gap, often freeing them from the trouble of travelling to the institution.

At the early stage of open education, the main communicating channel between the students and the teaching institution was postal mail. The student received teaching materials from the institution through mail, or through a more modern way by tuning in

to broadcasts at specific times. Regardless of whether the instruction media was printed, or broadcast, the communication was virtually unidirectional, with the student following the curriculum pre-assigned by the institution.

This unidirectional communicative was from the teaching institution to the students, and the latter were isolated and went through their studies by themselves. Also, due to limitations in the communication technologies available, the students could hardly communicate with each other or with the faculty members in any synchronous manner. As highlighted by Sumner (2000), correspondence study was “a very individualized mode of learning that tends to isolate and insulate students from the group learning process” (p. 275). To succeed in their studies by working alone, students needed to be mature, highly motivated, and disciplined, in order to follow the curriculum and complete their courses — and, above all, they had to be able to afford the cost, unless financial support was provided by some authority.

Television broadcast became an instruction medium during World War II for military training. In the education community, the University of Iowa was the first to own its educational station for broadcasting “telecourses” in 1934 (Portway & Lane, 1994). The earliest studies on the function of television in the learning process considered it as an “extension of the classroom” only, merely a tool used for carrying and transmitting knowledge (Portway & Lane, 1994). At the time, little attention was paid to the actual capacity of television instruction and its potential for transforming the traditional practice of education.

2.2. Distance learning through multiple technologies (1960 to 1985)

Telecommunication technology gradually became more available and affordable to certain groups in the community from around the 1960s. Institutions gradually then extended their teaching target further to the general public (mostly adults) who had not had the chance of participating in higher education for various reasons. Other broadcasting stations, such as the American Public Broadcasting Service, also acknowledged adult learning as one of their chief targets, to fully utilize the developed cable system for public education (Portway & Lane, 1994). Against this background, the Open University was established in the United Kingdom in 1969, and this institution was the first open university in the world. This approach to education soon spread across the globe. In 1970, Athabasca University was established as Canada’s Open University; and in 1972, Spain set up its National University of Distance Education. Countries across Asia soon followed. In 1979, China set up its China Central Radio and TV University (which has been renamed the Open University of China, OUC); and India established Andhra Pradesh Open University in 1982, and Dr Ambedkar Open University, as well as Indira Gandhi National Open University (IGNOU) in 1984. Also, in 1983, the Open University of Japan (OUJ) was founded and, in 1984, Indonesia set up Universitas Terbuka. Some of these institutions grew into mega-universities of enormous size with millions of students, e.g. OUC and IGNOU.

From around 1960, the use of television to aid learning in the classroom kept increasing gradually, especially in America. By 1961, 53 telecourses stations had been established and were connected to the National Educational Television Network (NET), providing telecourses and films with scheduled curricula to public schools (Jeffries, 2009).

The range of media for open learning developed widely in this period was based on the earlier telecommunication technology. From the 1960s through to the 1980s, the

world saw the maturation of telecommunication technology. Various tools, such as audio and video cassettes, allowed more flexibility and further minimized the time constraints of distance learning, as it became unnecessary to listen to the broadcast at a particular time. This boosted the spread of open practices beyond the classroom context.

Yet, though the technology used for correspondence learning had improved, the communication in this era was still primarily unidirectional. Telephone calls and mail, supplemented by face-to-face meetings, was often the preferred option (Cropley & Kahl, 1983). In this era, the students were still largely isolated from each other. Studying alone, they needed to be motivated and self-disciplined to complete their courses successfully.

2.3. Distance learning with increasing use of computers and networks (1985 to 1995)

The greatest limitation of correspondence learning was its unidirectional communication. Ideally, technology should be a tool to assist the learning process, not to limit the approaches from which students can choose. However, in the era of correspondence learning, both the teachers and the student were apparently restricted by the lack of convenient bi-directional communicative channels. This isolation of the two parties added to their inability to tailor teaching or learning to learner needs, in a way, reduced education to “indoctrination” (Sumner, 2000).

With the maturity of relevant information and network technology for education, e-learning gradually emerged and learning contents gradually got digitized. From the 1980s to the 1990s, open education employed a mixed-media approach. The implementation of satellite TV made the distribution of information more rapid, reaching the farthest places in the USA (Casey, 2008). At the same time, computers were slowly being used at home along with the emergence of the World Wide Web (the Internet) and high-speed broadband transmission. Later, computer networking quickly took the place of satellite TV to become the main platform for distance education (op. cit.). The popularization of computer technology enabled the creation of new educational software, which were disseminated in packaged disks, and CDs, as well as the Internet. The digitalized instructional media served as a more flexible alternative to the conventional print-based approach.

In addition to the traditional telephone and postal mail, the spread of the Internet enabled broadband communication, allowing students to communicate with the faculty via email. This two-way interactive learning mode, though still largely asynchronous, paved the way for the promotion of active learning, and the exploration of alternative teaching strategies. Also, for the first time, the Internet allowed coordinated multimedia teaching, in which the teaching materials could be supplemented by pictures and videos, and stored and accessed freely on the Internet.

The computer-mediated communication promoted collaboration between students within the same programme; and this technology also supported the development of a learning community between the students and the faculty. This last feature became more prominent when high-bandwidth computer technologies were developed in a later generation, enabling videoconferences between the teacher and the student.

It took time for institution and learners to become familiar with and able to adopt the technologies available for teaching and learning and it was a while before existing course contents could be translated for the new media. At the time, the majority of

learning materials were still in print form though gradually more and more learning contents were cast in the digitized format.

2.4. Online learning through high-bandwidth computer technologies (1995 to 2007)

e-Learning gradually took off around this period. The availability of packaged disks and CDs speeded up the dissemination and storage of multimedia teaching materials, allowing a wider range of teaching strategies. Towards the turn of the century, high-bandwidth transmission and videoconferences via the Internet became increasingly feasible in urban areas around the globe.

In addition to the traditional computer programmes stored on data storage devices, virtual classrooms, such as pre-recorded or live streaming audio and video lessons, were more often provided through high-bandwidth transmission. Video and audio conferencing at home were becoming increasingly popular because of the advancing satellite, cable and phone technologies, while traditional fax and print materials were still influential. The growth of learning management systems (LMS), such as Blackboard and Canvas, also facilitated the administration of academic courses and smoothed access to course materials, while promoting mobile learning as the norm.

The introduction of videoconferencing brought synchronous communication to open education, where the essential dialogical interaction promoted social learning and the creation of a learning community. By default, the learners could receive immediate feedback, which cultivated their sensitivity towards the authentic problems, and thus their active engagement in critical thinking and dialogue for learning. At the same time, videoconferencing also enabled educators to devise more comprehensive teaching plans involving more complex interactions. Therefore, the open learning experience was no longer a one-way practice, but more of a collaborative effort, in which both the teachers and students improved the practical and theoretical notion of education.

At the time, social learning became more feasible. Asynchronous learning became common through online discussion platforms, and videoconferencing technology generally allowed students to collaborate among themselves thereby continually expanding the learning community. Also, around this time, e-learning and online courses became more and more common in conventional institutions which offered an increasing number of online courses open to all, taking up the market share of open learning institutions.

2.5. Interactive online learning Web 2.0, mobile and synchronous technologies (2008 to the present)

The birth of the first massive open online course (MOOC) in 2008 and then the development of MOOCs at an exponential rate brought open learning swiftly into a new era. MOOCs are mainly offered as courses for open learning and are mostly presented by conventional institutions. The early movers were highly reputable institutions. In addition, the provision of MOOCs reflects the increasing expertise of the universities in the use of open learning and open educational resources, with the courses provided being modified from traditional courses, and free of charge for the public (Clarke, 2013).

At the same time, the development of technology made light-weight mobile computing devices with big screens available at affordable prices. This greatly enhanced the momentum of open learning development, and mobility and socialization were given

high value. The trend for ownership moved towards mobile devices. For example, as Brooks (2016) highlighted in their study covering 71,641 respondents from 183 institutions in 12 countries and 37 U.S. states, the laptop ownership by undergraduate remained relatively the same from 2011 to 2016, while smartphone ownership gradually increased during this period, surpassing the former in 2015 and reaching a percentage of 96% in 2016. The same figures also showed a close match for the adult population. The percentage ownership of tablet and wearable devices also increased rapidly from 2011 and 2015 respectively (Anderson, 2015).

Also, social media, such as blogs, YouTube, and Facebook, served as additional tools to enrich the learning experience and facilitate social learning. To a great extent, teaching institutions are now able to tailor “personal learning environments (PLE)” for a broad range of learners at the same time.

One major characteristic of the students active in the synchronous interactive e-learning era is that they are tech-savvy, being “fluent in multiple media and in simulation-based virtual settings” (Clarke, 2013). On the other hand, in order to compress the time cost to a minimum, the reliance on the teacher is comparatively lowered. Knowledge is instead spread among the communities, as a result of the increased opportunities for peer discussion (Dede, 2004; Anderson, 2013).

3. Semantic components of open learning and its evolution

This section is devoted to the meanings of “open learning” by analyzing the semantic components in its definitions. As indicated in the previous section, open learning has evolved through stages, and an attempt is made to determine the changes in its meaning.

The definitions of “open learning” from academic publication since 1991 until last year (2017) were analyzed. Google Scholar was adopted as the search engine because of its broad coverage of scholarly publications across disciplines. The definitions were identified from the search results by two trained research assistants who worked independently. Whenever there were differences in their judgements, an experienced researcher who had published over 25 refereed papers in the open learning field was invited to make a judgement. In performing the search with Google Scholar, the phrase “open learning refers” was used to generate search results on definitions. Other search phrases were considered ineffective and therefore not used. For example, “open learning is” was tried, but fewer than 5% of the search results were considered close to any definition or even relevant.

Based on the search results, a total of 105 definitions from published academic works were identified. Among the results, 33 were discarded because of the unavailability of the articles, despite attempts to access them (21 results); irrelevance (not being a definition) (5 results); being a duplication of other search results (6 results); or having no information about the publication date, making it not feasible for use in identifying the evolution in the meanings of the term (1 result). Finally, 72 results were suitable for the study. Among the 72 publications, 29 of the definitions of open learning were actually quotations from other sources. This gave a net total of 41 original definitions of open learning. Therefore, this part of the study is based on these 41 publications found with Google Scholar.

3.1. Semantic components of definitions

From the 41 definitions, seven components were identified for describing or distinguishing open learning. These semantic components, which represent the key concepts of open learning, are listed below. For the benefit of those who are relatively new to the field of open learning, some elaboration of these key concepts is included.

3.1.1. Open entry/access (to learning opportunities)

This refers to allowing anyone to enter, or not preventing anyone from entering, the courses. This has been considered the most direct way to conceptualize open learning because of its freedom of access, regardless of age, ability, and financial status (Rumble, 1989). This philosophical ideal of “open entry” or “open access” originated from correspondence learning — the first stage in the history of open learning — and had since become its most fundamental notion (Lewis, 1990). A common feature of open access is the free entry requirement to the courses provided by open learning institutions. One example is the practice of the Open University in the UK, where no previous educational qualifications are needed to enrol in undergraduate courses (Lane, 2009).

3.1.2. Being free from/minimizing barriers (to learning)

Being free from or minimizing barriers refers to the removal of difficulties preventing one from engaging in the courses. The barriers to learning, especially those in conventional education, include: (i) physical and time barriers, where learning may be hindered by having to travel a long distance or attend classes at specific times; (ii) the rigid curriculum that prevents learners from going about their learning in their preferred way; (iii) barriers associated with individual learners, such as the lack of self-confidence, or failing to meet certain requirements; and (iv) financial barriers, which is the burden of tuition fees (Lewis, 1986).

3.1.3. Flexible study methods, pace, and assessment

This refers to the flexibility allowed in a course of study. The pedagogical and learning modes of the learner at a distance from the teaching institution makes open learning stand out from the conventional classroom system. With pre-packaged learning materials, the learners will decide their learning schedule and choose what, when, where, how, and from whom they want to learn (Abhari & Eveland, 2013). In other words, the flexibility of open learning is reflected in the high degree of learner autonomy — not only can they study at their own pace, but they are also free to follow their desired learning content and strategies (Li, 2014; Li, Hu, & Wong, 2015).

3.1.4. Wide range of teaching and learning strategies/technologies

Adopting unconventional teaching and learning strategies has been a unique feature of open learning. Learners in open courses are not taught in conventional campuses, with alternative strategies and technologies adopted for learning and teaching.

3.1.5. Learner-centredness

This refers to putting the learner at the centre of the teaching operations. In open learning, Race (1994) identifies a switch in the lecturer’s role, from being a transmitter of

information to being the support for students. The corresponding changes in the teaching tasks include counselling, motivating the learners, and individualizing learning modules for different students.

3.1.6. Recognition of prior learning

Recognizing what the learner has previously learned, both formally or informally (e.g. learning on the job), the learner is able to complete a course without working on the part he or she already knows. Practical implementation of open learning often promotes “recognition of prior learning” (RPL) through the teaching institution’s relevant system, such as advanced standing or credit exemption (Ambe-Uva, 2010; Farrell, 2001; Robertson & Conrad, 2016).

3.1.7. Online learning/courses

This refers to learning or courses to be completed online.

3.2. Evolution of semantic components of open learning

The adoption of the seven semantic components in open learning definitions were tracked. From 1991 to 2000, there were 12 original references to the key elements of open learning, as shown in Table 1.

From the results, 5 out of the 12 references include four or more elements of open learning. The most frequent definitions of open learning were “open access” (8 references), “free from/minimize barriers” (9 references), and “flexibility study methods, pace, and assessment” (11 references).

From the years 2001 to 2010, there were 15 original definitions of open learning, as analyzed in Table 2.

The results showed that 5 out of the 15 references included four or more open learning elements. This period shares all of the most frequent elements from the previous period: “open access” (7 references), “free from/minimize barriers” (11 references), and “flexible study methods, pace, and assessment” (14 references). Even though the frequent elements are the same, this could be the result of the new wave of technological advancement, in which the Internet and ICT development speeded up data transmission and widened educational reach.

From 2011 to 2017, there were 14 original definitions of open learning. An analysis of them is shown in Table 3.

From the findings, 2 out of the 14 references included four or more open learning elements. The most frequent definitions of open learning still remained “open access” (6 references), “free from/minimize barriers” (5 references), and “flexible study methods, pace, and assessment” (10 references).

Table 4 shows an overall summary of the frequency of adoption of semantic components in definitions of open learning from 1991 to 2017.

As reflected in Table 4, the results suggest that the first three semantic components are the most common. Though flexibility remains the most adopted semantic component across the three periods, it is observed that the use of the components in definitions gradually became more diverse. Also, in the most recent period, the need to

have a broad range of teaching and learning strategies or technologies appears to have become less important, and considering online learning or pursuing online courses as open learning is a relatively recent phenomenon.

Table 1

Frequency of adoption of semantic components in definitions of open learning from 1991 to 2000

Definitions between 1991 and 2000	Open entry/ access to learning opportunities	Free from /minimize barriers	Flexible study methods, pace, and assessment	Wide range of teaching and learning strategies/ technologies	Learner- centred	Recognition of prior learning (RPL)	Online learning/ courses
Dahl (1991)	✓	✓	✓		✓		
McClelland & Lisewski (1993)		✓	✓		✓		
Danaher, Bartlett, & Rowan (1994)				✓			
Stevens (1994)	✓		✓	✓			
Taylor, Lopez, & Quadrelli (1996)			✓		✓		
Dhanarajan (1996)	✓	✓	✓		✓		
Robinson (1997)	✓	✓	✓				
Cunningham et al. (1998)	✓	✓	✓	✓			
Forsyth, Jolliffe, & Stevens (1999)	✓	✓	✓	✓	✓	✓	
Wircenski, Walker, Allen, & West (1999)	✓	✓	✓		✓		
Hardman (2000)	✓	✓	✓				
Cookson (2000)		✓	✓				
Total	8	9	11	4	6	1	0

Table 2

Frequency of adoption of semantic components in definitions of open learning from 2001 to 2010

Definitions between 2001 and 2010	Open entry/ access to learning opportunities	Free from /minimize barriers	Flexible study methods, pace, and assessment	Wide range of teaching and learning strategies/ technologies	Learner- centred	Recognition of prior learning (RPL)	Online learning/ courses
Sendegeya & Spencer (2001)	✓	✓	✓	✓	✓		
Farrell (2001)	✓		✓			✓	
Fletcher (2001)			✓				
Okonna (2001)		✓	✓		✓		
Powar (2002)	✓	✓	✓		✓		
O'Rourke (2003)			✓	✓			
Ojo, Rotimi, & Kayode (2006)	✓	✓	✓				
DePryck (2005)		✓	✓	✓			
Mudavanhu, Mvere, Majoni, Mupondi, & Kaputa (2004)		✓	✓				
Tesouro & Puiggali (2007)			✓		✓		
Kanwar (2008)	✓	✓					
Panda (2008)	✓	✓	✓		✓		
Bäck (2009)		✓	✓	✓	✓		
Jegade (2009)	✓	✓	✓	✓			
Ambe-Uva (2010)		✓	✓			✓	
Total	7	11	14	5	6	2	0

Table 3

Frequency of adoption of semantic components in definitions of open learning from 2011 to 2017

Definitions between 2011 and 2017	Open entry/ access to learning opportunities	Free from /minimize barriers	Flexible study methods, pace, and assessment	Wide range of teaching and learning strategies/ technologies	Learner- centred	Recognition of prior learning (RPL)	Online learning/ courses
Kagugu (2011)			✓				
Abhari & Eveland (2013)		✓	✓				
Damilola (2013)	✓	✓					
Souici (2013)			✓				
Sewell (2013)	✓						✓
Wambu (2013)			✓				
Abdallah (2014)	✓		✓	✓			
Avsec, Rihtarsic, & Kocijancic (2014)		✓	✓				
Greiff, Jaster, Kretzschmar, & Mainert (2015)					✓		
Heydenrych (2015)	✓	✓	✓			✓	
Sarkhel (2014)		✓	✓		✓		
Põldoja, Duval, & Leinonen (2016)	✓						✓
Manzoor (2017)			✓		✓		
Chatterjee, Chaudhuri, & Reggiani (2017)	✓		✓	✓	✓		
Total	6	5	10	2	4	1	2

Table 4

Frequency of adoption of semantic components in definitions of open learning from 1991 to 2017

Years (no. of definitions)	Open entry/ access to learning opportunities	Free from /minimize barriers	Flexible study methods, pace, and assessment	Wide range of teaching and learning strategies/ technologies	Learner-centred	Recognition of prior learning (RPL)	Online learning/ courses
1991–2000 (12)	8	9	11	4	6	1	0
2001–2010 (15)	7	11	14	5	6	2	0
2011–2017 (14)	6	5	10	2	4	1	2
Total	21	25	35	11	16	4	2

4. Discussion

As reflected in the analysis above, open learning involves an educational philosophy and operational practices that it denotes and/or connotes. Open entry, freedom from barriers and learner-centredness embody educational principles or ideals. Having flexibility in learning and adapting various strategies in teaching and learning are ways to achieve these principles. Technologies provide the means and tools for open learning to take place in its preferred way and be distinguished from conventional learning.

As shown in part 2 above, the development of open learning has always been closely related to the technologies available to the teaching institutions as well as the students. At the time of correspondence learning, it capitalized on the technologies in the postal system, printing and available writing tools. Then, in the distance learning era, further available technologies were included as tools for presenting learning contents and communication, such as radio, television and the telephone. In the next stage, computing and network technology gradually became available for adoption in the teaching and learning system. Later, with high-bandwidth computer technologies, online learning increased greatly in popularity. With the maturation of interactive technologies for pedagogical and learning purposes, interactive online learning gradually dominated open learning.

In the development and evolution of open learning through the adoption of technology, the emphasis has been placed on delivering the teaching contents from the teacher (or teaching institution) to the student, and building communication between them. Also, with satisfying the student’s learning needs at its centre, the social dimension gradually evolved and was given increasing attention. This aspect appears to have been generally missed out in the definitions of open learning, despite the fact that knowledge, the target of learning, is socially constructed (Howard & Maton, 2011; Wang, Bruce, &

Hughes, 2011) and the social aspect has been a key development in the technology of open learning (Tait, 2000).

In its early stages, open learning was not only taken as an alternative means of education or training but also as an economic approach to delivering education to a large number of target learners for economic development or educational enhancement of the underprivileged. Differing from conventional institutions which are campus or classroom bound — and thus have limitations in scalability — by its nature, open learning providers tended to work comfortably on the economy of scale and handled huge number of learners. Open learning somehow brought forth “instructional industrialism” (Evans & Nation, 1989).

In recent eras of open learning, social presence is generally taken as conducive to interactive communication, which facilitates knowledge sharing (Topchyan, 2016). Social technology has been emphasized and gradually become a key part of effective e-learning provision.

In the previous century, open learning placed a strong emphasis on delivering its teaching or education services in ways as effective as, if not better than, conventional teaching. It appears that less emphasis has been placed on such effectiveness since the Web 2.0 has become mature in its applications in technology.

When e-learning became popular and widely adopted in education, it promoted learning effectiveness not only in conventional institutions but also for students of open learning. Conventional institutions have been offering an increasing number of e-learning courses, moving into the open learning market which used to be dominated by open learning institutions. The line between conventional and open learning institutions is gradually blurring and fading.

As e-learning and technology-enhanced learning gradually grow in both kinds of institution, it can be anticipated that the need to be bound by any physical campus will keep diminishing. The momentum of conventional institutions’ involvement in the provision of online learning is accelerating; and so, the uniqueness and competitive niche of open learning institutions seems to be gradually losing its edge, which has been reflected in declining enrolment in many open universities’ (Bishau & Samkange, 2015; Tait, 2018). Looking at the more immediately future, Artificial intelligence (AI) is bringing additional challenges. As AI grows mature in bringing functional advantages in the learning management system (e.g. Samarakou et al., 2016) to continuously monitor and assessment of the learner as well as taking actions for learning intervention or support, education from both open learning and conventional institutions will increasingly adopt AI in the daily routine.

5. Conclusion

This paper has delineated the development of open learning in stages. Besides identifying five distinctive stages, it highlights that in every stage open learning has been closely linked to the development of available technology. It has also analysed the semantic components of open learning, and revealed seven core components in its meaning. The changes in the meanings of open learning over time have been uncovered, showing how its uniqueness has been understood, and how it has gradually been identified with online learning.

The word “open” in open learning implies the opposite position to “closed”, as in “closed learning” in conventional education. Its operations and niches have changed with

time; and its characteristics have gradually evolved together with the availability of technology within the era of development.

Open learning has evolved through time from correspondence learning to interactive online learning, with e-learning growing in virtually all parts of open learning operations. In the transition from correspondence learning to distance learning, there was a strong belief that distance learning offered students much more support for learning (such as the telephone or occasional tutorial support) than correspondence learning had provided, and thus distance learning was seen as more advanced. In this online learning era, interactive and social learning have become much more mature and conveniently available to learners, and it is often argued that open learning has gone beyond distance learning. This, coupled with the blurring and fading boundary between study programmes from conventional and open learning providers explained above, calls for a new term for a generation of open learning.

The fact that open learning has become just a form of e-learning presents a key challenge to its providers — open universities or other relevant institutions — with their market share and significance in education gradually being taken up by conventional institutions. It is time for them to renew their unique strengths in social values and functions.

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