Student support in e-learning courses in higher education - insights from a metasynthesis *"A pedagogy of panic attacks"*

Prof Ansie Minnaar, Institute for Open and Distance Learning, University of South Africa, South Africa, e-mail minnaa@unisa.ac.za

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Abstract

E-learning includes the use of the Internet for accessing learning materials, interacting with learning content and with instructors and students to obtain support during the learning process in order to gain knowledge and personal meaning and to grow. It occurs when students have electronic access to resources and where they are in regular online contact with their peers and tutors. The primary objective of the metasynthesis was to analyse primary qualitative research studies on learner support in online courses. The metamethod entailed thoughtful examination of the manner in which the methodological approach was used to gather and interpret the data. The metadata analysis involved reinterpretations of the actual findings from the primary qualitative studies. Lastly, the metatheory consisted of an examination of theories leading the primary researchers' topics, frameworks and research questions.

Conducting a metastudy from a constructivist perspective as in this research meant that I functioned as the interpreter of primary research studies, translating what has been written by other researchers for the purpose of revealing similarities and differences, and developing practice guidelines or theoretical concepts on a specific phenomenon. I identified three main themes regarding student support in e-learning in higher education:

1. Technical problems (infrastructure and access)

2. A panic attack (pedagogy)

3. Human contact (human factors)

E- learning providers of academic courses need to think much more creatively if they want to make a success of online learning in higher education institutions. The most important finding from this metasynthesis is that e-learners desperately need support and communication from the institution and from the tutor or lecturer. Student support is an all-inclusive factor. This study established that human contact is the one factor which e-learners crave most. Student support should not be seen as an add-on, but rather as a natural pedagogical instrument which all teachers use in their classroom - be it a virtual or a traditional one.

Keywords: Metasynthesis; student support; e-learning; online learning; higher education

Introduction to and background of the problem

In early computer learning (1990-2000), systems were designed based on a behaviouristic approach and claimed that learning is a change in observable behaviour caused by external stimuli in the environment (Anderson 2008, 9). Online learning during these early years was more text based, converted to electronic format and placed on the web for students to read. This kind of e-learning did not make use of the multimodal computer-mediated instructional means. It only meant that printing costs were offloaded to the student (Caplan & Graham 2008, 246-247).

The first generation of online learning is often delivered through a learning management system. This is a software application suite that organises the learning content, such as Blackboard, Moodle and Desire2Learn. While debate and research continues about the value of the first generation online courses, the ground is shifting beneath our feet in higher education today. Internet users are changing rapidly and the new generation of students are approaching work, learning and play in new ways. Online learning facilities need to take note of that.

Another trend in online learning is the learner- or student-centred approach, which is characterised by member interaction, learning together and developing a shared repertoire of resources. This infers that learning is shifting from a didactic teacher-to-learner approach to a networked, community-based model of learner-to-learner approach. This has significant implications for instructional design and development (Caplan & Graham 2008, 248-249).

E-learning includes the use of the Internet for accessing learning materials and for interacting with learning content, instructors and other students to obtain support during the learning process. E-learning and the use of the Internet also help and support the student to obtain knowledge and to arrive at a point where the learning content has personal meaning and for the student to grow and to develop (Anderson 2008, 17). This has created the possibility for the delivery of multimedia learning anywhere in the world. E-learning can be divided into three categories: web supplemented, web dependent or fully online (Kinuthia & Dagada 2008, 623-632). The use of the term 'e-learning' is growing rapidly and is frequently used interchangeably with terms such as 'online learning', 'virtual learning', 'distributed learning', 'networked learning' and 'web-based learning'. Each of these fundamentally refers to educational processes that utilise information and communication technology (ICT) to mediate learning and teaching and is directly linked to the development of access to a reliable technology infrastructure (Naidu 2003, 349-351).

For educators, web participation and the range of technology available for putting a class together online are changing traditional distance education rapidly. With the evolution of more user-friendly applications and interactive content in online learning, lecturers need opportunities which the web offers. With the right planning and orientation of students we can all look forward to a future where access to the wealth of the world's knowledge is commonplace for everyone, including students in the developing world (McGreal & Elliot 2008, 159-160).

Higher education institutions are faced with integrating ICT in their instructional strategies and planning. In most cases ICT is used to deliver quizzes, lectures and other

course material through e-learning applications (Macedo-Rouet, Ney & Charles 2009, 375-384). But the question that arises is how to support students in an e-learning environment so that they could grow and develop. E-learning is not equally well established in all countries over the world and we do not have clear guidelines about what kind of support should be built into e-learning courses in higher education. Quite a large number of e-learning articles and research resources are available, but the research on e-learning is diverse and often context specific. The best practices for support in e-learning courses are not clear in the literature. Very little research has been done in Africa on e-learning and in higher education. In Africa, we are still struggling with unreliable electricity provision, unforeseen power cuts and load shedding. To add to these problems, most countries in Africa have very unstable Internet systems (Macedo-Rouet et al. 2009, 375-384).

Research studies such as Huon et al. (2007), Evants et al. (2004) and Maki et al. (2000) as described by Macedo-Rouet et al. (2009, 375-384) indicate positive and negative aspects (such as the absence of interaction) about e-learning. Student support is well described in the literature and mostly in a positive way in the context of e-learning, but it seems that the support is either not utilised by students, or not available to students at the time the student needs it, or the applicable support for e-learners is not offered. I have extensive experience in open and distance learning and higher education institutions in South Africa where online learning is practised. For the purpose of this study I wanted to establish a guideline for e-learning support to students which includes good practices that could guide lecturers and instructors when they plan to implement e-learning in higher education.

The attributes of learning guided this study on e-learning. Many theorists argue that online learning is but a subset of learning in general, although we can expect issues relevant to how adults learn in an online context (Anderson 2008, 46-47). Brown and Cocking (1999 in Anderson 2008, 47) provide evidence that effective learning environments entail being community-centred, knowledge-centred, learner-centred and assessment-centred. The framework of attributes of learning as described by Anderson (2008, 45-74) was used to guide this research and I used community-centred, knowledge-centred, learner-centred and assessment-centred lenses to analyse the data in this metasynthesis. A short discussion of each lens is provided below to enable the reader to make sense of the data analysis method used in the study.

- Firstly, learner-centeredness includes awareness of the unique cognitive structures and understanding that learners bring to the learning context. Thus the lecturer supports the online student and makes efforts to gain an understanding of the student's prior knowledge, including any misconceptions that the learner starts with in their construction of new knowledge. The learning environment must respect and accommodate the particular cultural attributes and language of the learner to build knowledge. Learner-centred activities make use of diagnostic tools and activities to enhance pre-existing knowledge (Anderson 2008, 47).

- Secondly, knowledge-centred learning emphasises that effective learning does not happen in a vacuum and is bounded by the epistemiology, language and discipline context. The Internet also provides expanded opportunities for learners to access knowledge and it is the lecturer's task to support and to guide them through this maze of information (Anderson 2008, 49).

- Thirdly, learning and growth are always assessment-centred. E-learning is no different, and quality online learning provides many opportunities for assessment which involve the teacher, the student, peers and external experts. Online students must be supported to be aware of their progress throughout the course (Anderson 2008, 50).

- Lastly, the community-centred lens allows the inclusion of the critical social element of e-learning. Vygotsky (2000 in Anderson 2008, 51) refers to social cognition as how students can work together in an online learning context to collaboratively create new knowledge. The students, staff and experts are all working in a supporting capacity in the online learning environment. The problems or negative aspects in this regard are lack of attention and participation, economic restraints and resistance among institutions and competition in the virtual environment (Anderson 2008, 51).

The setting for this study was primary qualitative research studies on e-learning in open distance learning (ODL) higher education institutions. The focus was on student or learner support in online learning. Comparisons among students regarding support in different e-learning situations were made.

In addition, the research question for our metasynthesis was as follows:
What kind of support do learners in e-learning courses or environments at higher education institutions receive and what do learners need in terms of support in online courses?

The research objectives for the study were as follows:

1. To analyse primary qualitative research studies on student support in online courses.

2. To synthesise primary qualitative research studies on student support in e-learning in higher education institutions worldwide from 2000 to 2009.

3. To provide a best practice guideline for academic support to students in e-learning in general but also being mindful of the African perspective.

Methodology

This study was a qualitative, interpretive synthesis of data from primary qualitative research studies conducted between 2000 and 2009 worldwide. Studies using different qualitative methods such as phenomenology, case studies, ethnography and grounded theory approaches were included. This study aimed to generate a thorough understanding of support to learners in online courses at ODL institutions worldwide.

In an inquiry using the metastudy approach, there are three distinct analytical phases: the metamethod, metadata analysis and metatheory - followed by the synthesis phase. The metamethod entails thoughtful examination of the manner in which the methodological approach was used to gather and interpret the data. The metadata analysis involves reinterpretations of the actual findings from the primary qualitative studies. Lastly, the metatheory consists of an examination of the theories that lead the primary researchers' topics, frameworks and research questions (Sandelowski, Trimble, Woodard & Barroso 2006, 11-12; Thorne, Paterson, Acorn, Canam, Joachim & Jillings 2002, 437-452).

The search terms were 'open distance learning', 'student/learner support', 'e-learning', 'online learning' and 'qualitative research'. They were submitted to the University of South Africa search librarians, together with one researcher who did online searching using the same terms. I searched South African and international academic databases. The databases included in this research were SAe-Publications, ISAP, EbscoHost: Academic Search Premier, Business Source Premier, Eric, Teacher Reference desk, PsycExtra, ProQuest: ABI/Inform, Educational PSYCHOLOGY, Academic OneFile, Emerald, ISI Web of Knowledge and Scholar.Google. The researchers also conducted individual journal searches.

Screening and appraisal of articles

I identified 197 articles from the searches (see Figure 1). Although I used the term 'qualitative research', quite a number of quantitative research articles surfaced from the search. Some of the articles, which seemed qualitative, were in fact a mixture of quantitative and qualitative research and I excluded those from the metasynthesis. I developed inclusion and exclusion criteria to select only the very best qualitative articles on student support in e-learning.

Insert Figure 1

Inclusion criteria were set for qualitative articles on online student support from 2000-2009. Only studies which addressed support and e-learning in higher education institutions were included in the screening, which left us with 24 articles. After screening the abstracts, I excluded 11 articles on the grounds of their research focus. I screened the 13 full-length qualitative articles in detail for inclusion in the metasynthesis, using strict criteria as described by Paterson, Thorne, Canam and Jillings

(2001, 12-13). See Table 1 for information regarding the research question, design, aims of the study, sampling method and data collection, data analysis, rigor and credibility and justification for data interpretation. I evaluated the articles according to a scale: 2 for a yes, 0 for no and 1 if not applicable. Articles with a percentage of 75% and higher were included. From the 13 articles, six articles were selected after the second screening process.

Insert Table 1

Table 2 presents the list of articles included. One article from Africa, which was included in the initial list of 13 articles, did not stand up to the rigor and transferability criteria set for this study during the screening process and was therefore excluded. A wide range of qualitative studies worldwide were included on e-learning and learner support. Malaysia, Indiana and Hawaii in the USA, Norway, Manchester in the UK, Canada and China were included in our metasynthesis. This study concentrated on finding common themes from a wide perspective with the African context in mind. I numbered the studies 1-6 (see Table 2). A research study included in this paper is referred to by the number of the study, followed by a colon and then the page number in the article, for example (1:33).

Insert Table 2

Rigor

I engaged with the data for three months reading, coding, rereading and checking the coding of the articles. I used a wide variety of databases to select the primary research

as indicated under the methodology above. I selected qualitative articles from a wide range of journals such as the *European Journal of Open, Distance and E-learning, Information, Communication & Society, Distance Education, International Review of Research in Open and Distance Learning and Campus-Wide Information Systems*. The data were analysed by one researcher and validated by the other.

Validity of the study

Validity in the study was ensured by describing the process of the metastudy as it unfolded. The study followed the structure of a metastudy as described by Paterson et al. (2001). I conducted the research at a time of transition at the University of South Africa when ODL practices and e-learning strategies were being implemented. The lecturers were informed during 2009 to ensure that all the master's courses were offered in online mode from 2010. Lecturers knew they had to offer online courses, but the how and the pedagogy for online learning were not discussed and no formal training was offered to them. This study was done to provide a practice guideline for lecturers preparing their courses for online offerings.

I proposed that the findings could be implemented at the same time as the online master's curriculum was being developed by the Institute for Open Distance Learning at the University of South Africa. Validity was strengthened by the fact that the research team comprised two academics in ODL practices and the search librarians at the University of South Africa. The philosophical underpinnings of a metastudy allow and direct an attitude of openness, discovery and reflection regarding a specific phenomenon. The analysis procedure of a metastudy involves three components, namely metamethod, metatheory and metadata analysis (Fink 2005, 136-141).

Metamethod

I appraised the articles according to certain criteria, namely demographic aspects which are displayed in Table 3, sample method, status of learner support, perceptions and needs regarding support in e-learning.

Insert Table 3

During this metamethod, I analysed the methodological orientation such as the research questions, trends in e-learning, aim and purpose of the studies, research design, data collection and data analysis and the trustworthiness of the studies as shown in Tables 3 and 4. In the studies under investigation, it became clear that the researchers used interviews in a very creative way.

Insert Table 4

One study reported as follows:

"On-line learners were interviewed in their natural setting where they had access to the Internet and were generally comfortable with the mode of communication." (1:6)

Insights from the metamethod

Overall, the selected studies included in this metasynthesis were not clear in the descriptions of the different methods used and in how the researchers collected the data. One wonders how the researchers administered the focus group technique in the virtual environment. Not all the researchers in the studies chosen described the in-depth, semi-structured interview method clearly. It must be noted that the research rigor was not of a

high standard in the qualitative studies in this metasynthesis, which was one of the limitations of the study.

I found that three out of the six studies under investigation did not state any research question for their research. The three studies with research questions framed their questions around learner support, learners' experiences and feelings on online courses. All the studies clearly stated their aims for the research and the researcher described learner support, feelings and experiences in rich text. The studies described rigor in their research reports, and most researchers referred to the verification of the transcripts with the participants. Ethical considerations were not addressed sufficiently in the six studies in this metasynthesis (see Table 4).

The study by Hara and Kling (2000) used multiple data collection strategies such as interviews, observations and document reviews. The researchers conducted the interviews online and an example of a question is as follows:

> "Think back and write down the story of your first encounter with the online learning environment - describe your experiences of the event in as much detail as possible." (1:6)

The study by Menchaca and Bekele (2008) used focus groups to collect data and the researchers evoked lively discussions by the following prompts:
"Which technology would have been most difficult to do without? Why?"
"Please describe experiences in e-learning. What were successes and failures?"(3:238)

E-mail interviewing seemed to have been a creative way of conducting qualitative research in the sense that the interviews were conducted electronically, which made the

transcription of the interviews easy, and it saved the researchers time and effort (Menchaca & Bekele 2008, 231-252). In all the studies, researchers had close relationships with the participants, which contributed to the relatively high response rate. Most of the studies included in this study implemented some kind of interaction with the students before implementation of the e-learning method. This is different from the norm in e-learning, where students and lecturers do not have any physical contact in the e-learning context and this may be the reason for the high response rate in some of the studies included in this research. The researchers did not describe ethical aspects and I do not know whether the participants could withdraw from the research without penalty. I analysed the sampling methods and procedures, and concluded that all the participants were online learners.

Metadata analysis

The metadata analysis consisted of an examination of the underlying assumptions of various data analyses in the six articles, a comparison of different forms of data in terms of quality and the synthesis of the findings in all the studies included. I examined the various studies on student support in e-learning and it became clear that the six studies came to the same conclusions.

In this study the human factor seemed to play a significant role in e-learning. All humans are different in their own unique ways, but through this study the importance of some kind of human touch, interaction or communication stood out, since it was the human factor that enabled online learners to succeed in their studies. This is also important in the African context where human contact is a major part of our social existence.

From Table 5 Menchaca and Bekele (2008) clearly complied most successfully with qualitative research guidelines. The study by Zhao, McConnell and Jiang (2009) was the weakest in terms of quality of the methodology in qualitative research.

Data were analysed manually on the printouts of the research articles and I highlighted concepts in different colours to group similar concepts together. I also used hand drawings to get more clarity on the flow of the data and the metaphors.

I sorted the data into main themes under the names of the authors of the articles and under the metaphor of "*Typology of learning needs in e-learning*". The researchers then immersed themselves in the data by studying and reading the articles repeatedly. Three distinct new metaphors emerged from the data as indicated in Table 6:

1.   Technical problems (infrastructure and access)

2.   A panic attack (pedagogy)

3.   Human contact (human factors)

Insert Table 5

Technical problems

The metaphor on infrastructure and access turned out to consist of only a few concepts. It is clear (see Table 6) that teachers and students need multiple tools when embarking on e-learning. E-learners need to be proficient in different technological skills before enrolling for the course.

"I had technical problems with the induction programme. After trying several times with help here, I gave up..." (3:243)

"Africa... the infrastructure is there, but a 30 minutes video link, sometimes I have to log onto the computer because of disruptions to the line, I will be doing that about ten times within the thirty minutes..."(4:287)

The technology affected learning and teaching negatively in e-learning courses and could not always support the e-learning and pedagogy of e-learning:

"There was rather a barrage of e-mails requiring a lot of different things to be set up. I was not prepared for just how much of the material would be presented online, and this caused a few problems at first as I was using my computer at work, which has several restrictions... It took me a little while to get connected (and costs) at home and then things ran more smoothly... However, I was not prepared for the style of learning, and an introduction to this would have been useful." (4:287)

In China, higher education institutions were reasonably well resourced although the infrastructure and access were poor:

"...But it appears to be very patchy and still seems to depend on the resources and social and political contexts of each institution. (6:95)

It is thus evident that technological constraints posed by e-learning must be given serious attention. Lecturers in online learning also need to acknowledge that students will need special orientation and advice before they register for e-learning courses. The data thus clearly shows that technology is problematic in e-learning.

Online instructional design that draws on instructional theories such as constructivism, cognitive and andragogy must utilise computer-based electronic tools to effect communication and collaboration. Typically, learning management systems such as Blackboard consist of multiple tools that are available to the lecturer and learners. Communication tools in online learning are, among others, blogs, e-mail, instant

messaging (IM) and rich site summaries (RSS). Conferencing tools include audio conferencing, discussion boards, multiuser domain (MUD), object-orientated multiuser domain (MOO), video teleconferencing (VCT), virtual world and virtual whiteboard. If lecturers are to design and teach using online technology, then they would require additional training about various models of online instruction as well as detailed information about student differences and how those influence learning. The potential online students also need orientation in how the technology must be used (Rovai, Ponton & Baker 2008, 14-28; Damoense 2003, 1-16).

A panic attack!

'Good pedagogy' is a term widely used in educational writing, but all too often we assume its meaning is self-evident. Pedagogy is concerned with our immediate image of the teaching situation. Didactic goals can be written down, but pedagogical experiences cannot be easily theorised owing to their unique aspects. Pedagogies are those basic principles underlying practical classroom practices. Pedagogy is about the interactions between teachers, students and the e-learning environment and learning and teaching tasks. Pedagogic decisions are routed in epistemological assumptions - whether or not articulated explicitly. It is widely accepted that learning effectiveness is a function of effective pedagogical practices. Pedagogical practices under e-learning should incorporate activities that promote and facilitate constructivist, interactive and collaborative learning. In other words, traditional pedagogy needs to be adapted to a pedagogy relating to a technology-based learning environment, which emphasises the principles of engagement theory. Technology is an important resource for any student, but it is not valuable in a vacuum. Doubtless, lecturers must take greater responsibility when it comes to the development of online courses to ensure a sound technological pedagogy (Damoense 2003, 1-16).

Three studies reflected on pedagogical factors and e-learning, namely those by Menchaca and Bekele (2008), Strodel, Thomson and MacDonald (2006) and Zhao et al. (2009). When learners compared face-to-face classroom sessions with e-learning, they reflected on the problems with technology, but as the e-learning course developed, learners also

"got more comfortable and the quality of discussions improves all the time..." (5:2)

Other e-learners felt that the quality of the e-learning during the discussions online was poor with learners kind of "just reporting in". "Discussions were drawn out and there was a lot of rehashing" (5:5).

Lecturers must not act differently in the e-learning paradigm from how they would in the classroom. In this research this was evidently happening and participants reported as follows:

"I do think that the interactions were... bordering on the ridiculous sometimes in terms of praise. I mean you do not praise people that much in a face to face situation, so why would the facilitator does it merely because teaching is online?"(5:8)

E-learners also seemed to be stressed, worrying about all kinds of things such as their ability to post a good and well-phrased comment online since many people would read it:

"I had a panic attack! It was a very fearful situation. ... It was a very fearful situation." (5:10)

There was a lot of resistance to move from face-to-face learning to e-learning:

"F2F is our favourite learning method. Students prefer lectures. There is no identification with e-learning in China" (6:93)

Human contact

The discourse about absence and presence in e-learning is ongoing. Van Niekerk and Mays (2009, 4) claim that "*writing*" mediates the presence of speech. They argue that Deleuze's theorising about absence and presence adds another dimension to the understanding of ODL. We need to consider how "present" we are in online learning courses, especially when we consider how the students in this metasynthesis felt about their own loneliness.

This was the biggest theme in the data on support in e-learning. Five of the six studies reflected on the issue of human presence or human contact:

"Yeah. So my eyes are tired. Of course, a part of the problem is not totally the class's fault... They (the lesson plans) do not completely relate to the class... I am totally frustrated because I really want to go home. I do not want to be here (in front of the computer) anymore..." (2:10)

An effective e-learning environment is one where there is effective communication between students and instructors (Motteram & Forrester 2005, 281-298; Alias & Rahman 2005, 1-14).

Most of the studies referred to high quality of interaction in e-learning:

"No interaction and communication at all from the lecturer. Where can I get hold of the instructor anytime?" (Supportive learning) (1:8)

The above statement is one of the examples of the cry for instructor support and interest in online learners' studies. The self-esteem of e-learners and tutors was further tarnished

because of the difficulty of the e-learning programs in this study. Regarding

synchronous learning, one of the studies reported as follows:

"Assessing the synchronous environment, lack of adequate feedback and difficulty to

work in groups... What could be done in 10 minutes F2F could take 30 minutes or more

online." (3:246)

In the same study the participants referred to feedback:

"Quicker and more in depth feedback would have been appreciated" (3:246)

In another study participants referred to human factors and interaction in e-learning

environments:

 "I feel access to a human tutor is the greatest need... We need a tutor that cares about

students. We need to be in contact, just not to feel isolated." (4:287-288)

 "Picking up on the small points you get through informal conversations with classmates

or dropping into the professor's office after class." (5:10)

 "It was pretty important to know that there were people out there who were feeling the

same thing... It was a bit scary, I was thinking can I do it; can't I do it?... but it was

reassuring to know that other people were feeling the same thing; that it was quite

normal." (4:288)

The pain of e-learning was evident and was expressed as follows:

        "I don't like, I have to say, I don't really like turning on the computer and finding

that I have eleven messages on my e-mail. It's a pain. I mean to answer that many

things, just talking in conversation would be so much easier, rather than replying and

doing all the stuff, you have to do. So, that is time consuming, but part of at a distance. I

think if you are doing that, you have to be aware that you're gonna be spending more

time with computer problems, not getting on-line, software freaking out, whatever it's

gonna happen, it gonna take you longer, waiting in a line at a lab. There are so many

things that make it kind of difficult to do." (2:11-12)

Conversely, some of the e-learners were satisfied and found the online learning

experience enjoyable. Learners made positive comments on online learning:

"Satisfied, enjoyed, valuable, learned a lot, wonderful, best experience, loved it and

effective" (3:245)

 "(For e-learning you have to have) an up to date study skill" and fast and hassle free...

no barrier, no traffic jam, no yarning in the class listening to certain dry subjects by

certain fatigue lecturers ect. and lastly no extra monies incurred to attend the class."

(1:7)

Insert Table 6

Metatheory

The metatheory part of the study involved the analysis of the six primary studies for the

implications of their theoretical orientations. I started the metatheory by reading the

research reports thoroughly, noting the theoretical perspectives used and which

emergent theories were developed and, lastly, deciding which theories could be

significantly influenced by the research.

The major paradigms underlying the theoretical frameworks on student support in e-

learning were concepts such as human factors, course content, leadership, pedagogy,

technical factors and success and quality factors (Menchaca & Bekele 2008, 236). Alias

and Rahman (2005, 2) describe their conceptual framework, using concepts such as

thoughtful selection of students and orientation, well-suited teachers, purposeful learner

interaction and learner support, which included a wide range of aspects such as course

choice, planning activities to study and embedded support within the course content.

The framework of Garrison (2006) is described in Strodel et al. (2006, 2-3) and

emphasises that learning occurs through interaction of social presence, cognitive

presence and teaching presence. Four phases of practical enquiry from the student's

point of view are identified by Strodel et al. (2006, 2-3), namely a trigger event,

exploration, integration and resolution. The other studies in the metasynthesis did not

clearly reflect on theoretical frameworks and were therefore not discussed in the

metatheory.

The conceptual frameworks discussed in this metasynthesis revealed a simple but highly

interactive model for e-learning. This research found that higher education institutions

must provide a whole range of support strategies to online learners to ensure successful

e-learning. A pedagogy of panic attacks should not be the norm in e-learning courses.

When online learners receive sufficient support from ODL institutions, they will relax

and enjoy the technology of e-learning. This will put them at ease and they will

therefore be more open to successful learning.

When we look at Figure 2 we realise that this support framework is student centred and

all the activities and learning strategies must be planned with the student at the centre.

This framework for online support in higher education advocates a pedagogy of student

centredness. The students must be enthused by the activities and triggering events in

online learning. They must be motivated to want to explore the course content and

beyond. The online course must be structured so that the course content is knowledge

centred and the online student is guided through the knowledge in a way that the student is active and motivated all the time. There needs to be integration across activities all the time. The online lecturer must ensure that teaching and assessment are in constructive alignment with the outcomes and assessment criteria.

The student profile must be known by the lecturer so that the special needs and cultural aspects of the students are recognised during the course and learning experience. The learning material and tasks must be age appropriate and the online lecturer must ensure that there is no gender or cultural bias in the learning material.

If we look at the middle of the framework we see that technology is there for online lecturers to access and to use. On the left-hand side of the framework we see the technology aspects which we as online learning providers must weigh and select to obtain the best match for our environment. We need to decide whether to use multiple tools in our course or just one or two, and how we will introduce the tools. We also need to decide how technologically inclined both we and our students are. Should we plan a course for online learning for our lecturers and for the students? Another aspect to consider is how the network and outages will affect the course. What are the cultural implications of studying online for our students? Do we have the political will to make a success of online learning?

We see the human factor in our framework in the middle. What level of reskilling of staff is needed for online learning to be successful? Do we need to develop an introductory course for our online students to familiarise them with new technology? The level of support needed by the staff to make online learning a valuable experience

for lecturers and students needs to be established right at the beginning of the planning

of online learning. Online learning providers must provide structured learning

opportunities to academic staff involved in online learning about best practices for

online learning, course design and development through formal institutional centres for

teaching and learning.

Tallent-Runnels et al. (2006 in Marek (2009, 275-292) provide best practices from

research. The authors also evaluate the quality of research available on online learning

in higher education and they found that very few universities have written guidelines or

policies for online learning. Their research confirmed the lack of technical support for

both academic staff members and students engaged in online learning. Academics want

training and course development assistance as well as rewards for preparing courses

online. It seems that the digital reform has happened so quickly in higher education that

little or no academic consultation has been done.

Also, we need to think about the continuous support the staff would need in newly

established online learning courses. We need to consider the levels of interaction that

will be employed in the courses. What support will there be for lecturers and students

that get panic attacks and are stressed out because of online learning?

Online learning courses need some level of social interaction (community-centredness)

with other students and face-to-face interventions. We need to think about this carefully

and not see it as an add on, but as an integral part of our planning and offerings in online

learning. How will we stimulate the students to take part in critical thinking? Problem-

based learning and the case study method could be used in online learning with great

rewards (Naidu 2003, 355-365; Damoense 2003, 5-16; Anderson 2008, 246-276; Rovai et al. 2008, 1-28).

Insert Figure 2

Implications for e-learning at higher education institutions

This metastudy has inspired me to continue enquiring into e-learning and support practices in higher education and in other educational and human directions. Such a metastudy can lead to important practice guidelines for e-learning courses. Furthermore, the findings of the metastudy will inform the curriculum of the master's in ODL development at the University of South Africa.

From this study it has emerged that we need to select e-learning students carefully and students need to fit the paradigm of online learning. According to the findings, prospective e-learning students must be technically inclined to be able to make the most of online learning. A stable network and orientation to e-learning would be an asset for students in online learning. Students need to be familiar with the technology and they also need to have the finances to access the technology needed for online learning, the programs and the hardware as well as the Internet.

In addition, e-learners need to be orientated to this teaching mode to ensure that they do not get lost and give up because they cannot manage the technology of e-learning. Therefore, like good face-to-face teaching, the learning experience needs to be planned and structured; simply providing masses of digital resources is just NOT e-learning - it is lazy teaching.

Many difficulties regarding e-learning courses are facing higher education institutions in Africa in particular (Damoense 2003, 9; Uys, Nleya & Molelu 2004, 75). To start with, the networks in Africa are extremely unstable and learners must log on repeatedly because the Internet fails. In addition, Africa is experiencing an electrical supply crisis, with daily power failures and power-sharing regulations which affect the economy and computer services. Many learners in Africa are still using candlelight to study and e-learning is thus not yet a practicable learning application for many (Damoense 2003, 9-16). Online providers need to ensure that they offer blended learning approaches as well to be able to accommodate all students.

In addition, it should be remembered that e-learners are human beings with security and social needs. Face-to-face interactions need to be part of the e-learning paradigm and lecturers in online learning should plan properly for interaction and structured synchronous discussions with students. "Interaction has long been a defining and critical component of education processes and context" (Anderson 2008, 54).

Holmberg (1981 in Anderson 2008, 55) introduced the idea of simulated interaction, which defines the writing style appropriate for independent study models of distance education. Garrison and Shale (1990 in Anderson 2008, 55) define all forms of education as essentially interactions between content, students and teachers. The web affords interaction in many modalities such as face to face, video conferencing, audio conferencing and computer conferencing, to name a few. Student-student interaction has traditionally been downplayed as a requirement of distance education, owing to constraints on availability of technology, but it could be used in online learning which could facilitate a higher order of learning. Student-content interaction has always been

a major component of formal education. The web supports this passive form of student-content interaction, but also provides a host of new opportunities such as immersion in microenvironments, virtual exercises and online tutorials. Student-teacher interaction is supported in online learning in a large number of formats in asynchronous and synchronous communication in text, audio and video communications. Best practices in online learning recognise the flow of communication now to be much less teacher centred than in a traditional classroom. Teacher-content interaction focuses on the teacher's creation of content; teacher-teacher interaction sustains professional development of teachers and content-content interaction is a new developing mode of education in which content is programmed to interact with other automated information (Anderson 2008, 54-59).

From the metasynthesis, clearly the pedagogy in e-learning requires serious attention. It is important to keep e-learners active and interested. In e-learning, we need to inform our students on aspects such as learning outcomes for each course, time frames and important dates for assignments and other learning or assessment events. Online learners, just like traditional learners, need information on their achievements, and feedback on assignments and tests (Matera & Forrester 2005, 281-298).

A typical e-learning course should include aspects such as announcements, facilitators' profiles, course information, timetables, course material, lists and learning modules, discussion classes, conferences, self-assessments, links to applicable websites, communication tools and a digital drop-box to post assignments and tests.

Limitations of the study

This study reflected on articles from different contexts worldwide. There were no qualitative research articles from the African context because of lack of rigor in the articles. In fact the rigor in most of the studies on e-learning was not of a high standard although the data sources were published in peer-reviewed journals. Another limitation was that the data sources did not describe the theoretical frameworks used in their research clearly.

Conclusion

Learner support in e-learning courses comprises three main themes, namely human contact, panic attacks which are caused by e-learning pedagogy and technical problems. It is relatively easy to register for online courses, but the technology is problematic and may prove to be a stumbling block for the student. Online students want face-to-face contact and interaction, and the pedagogy used in e-learning can cause so much stress and anxiety to some students that they then give up. E-learning providers of academic courses need to think much more creatively if they want to make a success of online learning in higher education institutions. Figure 2 could assist online lecturers in their creative thinking when they plan interactive and supportive online learning courses.

References

Alias, A.N. & Rahman, N.S.A.N. 2005. (Online). The supportive distance-learning
environment: A study on the-learning support needs of Malaysian online
learners. *European Journal of Open, Distance and E-learning,* 1-14.
http://www.eurodl.org/materials/contrib/2005/Alias_Rahman.htm
(accessed on 27 May 2009).

Anderson, T. 2008. *The theory and practice of online learning*. 2nd edition. Athabasca:
AU Press.

Caplan, D. & Graham, R. 2008. The development of online courses. In *The theory
and practice of online learning*. 2nd edition. Ed. T. Anderson. Athabasca: AU
Press.

Damoense, M.Y. 2003. Online learning: Implications for effective learning for higher
education in South Africa. *Australian Journal of Educational Technology,*
19(1):25-45.

Fink, A. 2005. *Conducting research literature reviews from the Internet to paper.*
Thousand Oaks: Sage.

Hara, N. & Kling, R. 2000. Student's distress with an e-learning distance education
course: An ethnographic study of participants' experiences. *Information,
Communication & Society,* 3(4):557-579.

Kinuthia, W. & Dagada, R. 2008. E-learning incorporation: An exploratory study
of three South African higher educational institutions. *International Journal
of E-learning,* 7(4):623-639.

Macedo-Rouet, M., Ney, M. & Charles, S. 2009. Students' performance and satisfaction
with Web vs. paper-based practice quizzes and lecture notes. *Computers and
Education,* 53:375-384.

Marek, K. 2009. Learning to teach online: Creating a culture of support for faculty. *Journal of Education for Library and Information Science,* 50(4):275-292.

Matera, G. & Forrester, G. 2005. Becoming an online distance learner: What can be learned from students' experiences of induction to distance programmes? *Distance Education,* 26(3):281-298.

McGreal, R. & Elliot, M. 2008. Technologies of online learning (e-learning). In *The theory and practice of online learning*. 2nd edition. Ed. T. Anderson. Athabasca: AU Press.

Menchaca, M.P. & Bekele, T.A. 2008. Learner and instructor identified success factors in distance education. *Distance Education,* 29(3):231-252.

Motteram, G. & Forrester, G. 2005. Becoming an online distance learner: What can be learned from students' experiences of induction to distance programmes? *Distance Education,* 26(3):281-298.

Naidu, S. 2003. Designing instruction for e-learning environments. In *Handbook of distance education.* Eds. M.G. Moore & W.G. Anderson. New York: Erlbaum.

Paterson, B.L., Thorne, S.E., Canam, C. & Jillings, C. 2001. *Meta-study of qualitative health research: A practical guide to meta-analysis and meta-synthesis.* Thousand Oaks: Sage.

Rovai, A.P., Ponton, M.K. & Baker, J.D. 2008. *Distance learning in higher education.* New York: Teachers College Press.

Sandelowski, M., Trimble, F.M., Woodard, E.K. & Barroso, J. 2006. From synthesis to script: Transforming qualitative research findings for use in practice. *Qualitative Health Research*, 16(10):1350-1370.

Strodel, E.J., Thomson, T.L. & MacDonald, C.J. 2006. Learners' perceptions on what is missing from e-learning: Interpretations through the community of inquiry

framework. *International Review of Research in Open and Distance-learning,* 7(3):1-24.

Thorne, S., Paterson, B., Acorn, S., Canam, C., Joachim, G. & Jillings, C. 2002. Chronic illness experience: Insights from a metasynthesis. *Qualitative Health Research,* 12(4):437-452.

Uys, P.M., Nleya, P. & Molelu, G.B. 2004. Technological innovations and management strategies for higher education in Africa: Harmonizing reality and idealism. *Education Media International*, 41(1):67-80.

Van Niekerk, L. & Mays, T. 2009. (Online). The ironies of presence: The role of the invisible teacher in ODL. http://www.ou.nl/docs/campagnes/ICDE2009/papers/final-paper-043niekerk.pdf (accessed on 25 August 2010).

Zhao, J., McConnell, D. & Jiang, Y. 2009. Teachers' conceptions of e learning in Chinese higher education, a phenomenographic analysis. *Campus-Wide Information Systems,* 26(2):90-97.

Table 1:   Screening criteria used to select the articles

No.	Criteria for screening and inclusion	Yes 2	No 0	N/A 1
1	Research question stated clearly and followed through the research			
2	Design clearly described (variety of qualitative designs)			
3	Aims of the study clearly identified			
4	Sampling clearly described (variety of sampling)			
5	Data collection setting identified			
6	How were data collected?			
7	Specific data collection strategy described and why the specific strategy, why was it applicable to the specific study?			
8	How were data recorded and ethical aspects described and taken care of?			
9	Data analysis described with transferability			
10	How were themes and categories identified?			
11	Credibility (member checks, validation of data)			
12	Clear statement of findings			
13	Justification of data interpretation			
14	Clear demarcation between data and researcher's interpretations			

15	General transferability of the research			
16	Was research useful and relevant?			
17	Will the results help?			

Adapted from Paterson et al. (2001, 1-10); Fink (2005, 30)

 Score: /17 * 100 =   %

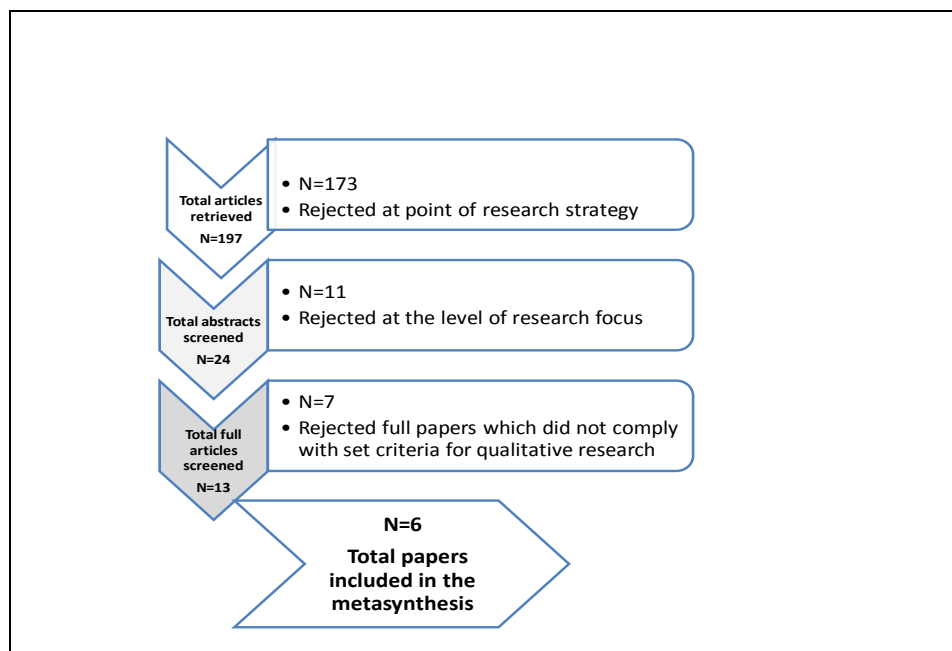Generated in MSWord

Figure 1:   **Summary of research study screening and selection process**

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Table 2: List of articles included in the metasynthesis

1. Alias, A.N. & Rahman, N.S.A.N. 2005. The supportive distance-learning environment: A study on the-learning support needs of Malaysian online learners. *European Journal of Open, Distance and E-learning,* 1-14. http://www.eurodl.org/materials/contrib/2005/Alias_Rahman.htm (accessed 27 May 2009).

2. Hara, N. & Kling, R. 2000. Student's distress with an e-learning distance education course: An ethnographic study of participants' experiences. *Information, Communication & Society,* 3(4):557-579.

3. Menchaca, M.P. & Bekele, T. A. 2008. Learner and instructor identified success factors in distance education. *Distance Education,* 29(3):231-252.

4. Motteram, G. & Forrester, G. 2005. Becoming an online distance learner: What can be learned from students' experiences of induction to distance programmes? *Distance Education,* 26(3):281-298.

5. Strodel, E.J., Thomson, T.L. & MacDonald, C.J. 2006. Learners' perceptions on what is missing from e-learning: Interpretations through the community of inquiry framework. *International Review of Research in Open and Distance-learning,* 7(3):1-24.

6. Zhao, J., McConnell, D. & Jiang, Y. 2009. Teachers' conceptions of e-learning in Chinese higher education, a phenomenographic analysis. *Campus-Wide Information Systems*, 26(2):90-97.

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Table 3:   **Demographic data of the study population**

	Alias & Rahman (2005) 1	Hara & Kling (2000) 2	Menchaca & Bekele (2008) 3	Motteram & Forrester (2005) 4	Strodel et al. (2006) 5	Zhao et al. (2009) 6
Sample	6 students	8 master's students	72 students and 6 teachers	27 students	23 learners	24 Chinese learners
Support	Instructor support	Learners are distressed	Multiple tools available	Constraints	Peer support	Traditional teaching
Country	Malaysia	Indiana, USA	Hawaii, USA and Norway	UK	Canada	Chinese
Characteristics	Final year	Graduates	Master's	Master's	MEd	Age 28 - 49

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Table 4:   Summary of aspects under investigation in the metamethod

Articles	Alias & Rahman (2005) 1	Hara & Kling (2000) 2	Menchaca & Bekele (2008) 3	Motteram & Forrester (2005) 4	Strodel et al.(2006) 5	Zhao et al. (2009) 6
Research questions	Four questions	One question	Three	None stated	None stated	None stated
Aims of the study	To identify learners' support needs	To understand the experiences of an internet-enabled course	To determine the experiences and perceptions of individuals in online education	To identify students' needs	To identify learners' perceptions	To examine Chinese teaching to understand e-learning

Research design	Phenomenology	Small-scale case study	Focus groups	Explorative qualitative research	Constructivist qualitative research	Phenomenology
Data collection	E-mail interviews	Observation, interviews, document review	Focus groups	Open-ended questions	In-depth semi-structured interviews	Interviews
Data analysis	Content analysis	No method mentioned	Constant comparative coding	NVivo	Constant comparative method	NVivo and grounded theory
Rigor	Verified transcripts	Validated transcripts	Researchers revised transcripts	A follow-up telephone call	Validated by participants	Double-checked with participants

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Table 5:   **Metadata analysis: Rigor of the primary qualitative articles used in the metasynthesis**

	Alias & Rahman (2005) 1	Hara & Kling (2000) 2	Menchaca & Bekele (2008) 3	Motteram & Forrester (2005) 4	Strodel et al. (2006) 5	Zhao et al. (2009) 6
Clear statement of the findings Yes/No	Yes Three main findings	Yes	Yes Three categories	Yes Three themes	Yes Five themes	Yes Five categories
Justification of interpretations Yes/No	Yes	Yes	Yes	Yes	Yes	No
Links between data and findings Yes/No	Yes	Yes	Yes	Yes	Yes	Not clear
Usefulness of results	High	High	High	High	High	High

High/Med/Low						
Transferability **Yes/No**	Not clear	Not clear	Yes, clear	Yes	Yes	No
Relevance to ODL **High/Med/Low**	High	High	High	High	High	High
Are the results important? **Yes/No**	Yes	Yes	Yes	Yes	Yes	Yes
Values	Support, self-efficacy	Distress, communica-tion breakdown	Technology Pedagogy	Technology Human needs Community of learners	Interpersonal communication online	Conceptions of learning
Preference of researcher **clearly delineated** **Yes/No**	Yes	Yes	Yes	Yes	Yes	Yes

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Table 6: **Metadata analysis: The three new metaphors, authors and original concepts**

No.	New metaphor	Authors	Original concepts
1	**Technical problems**	**Menchaca & Bekele (2008)** **Zhao et al. (2009)** **Motteram & Forrester (2005)**	1. Multiple tools 2. Technical proficiency 3. Asynchronised and synchronised tools 4. Stable vs. non-stable networks 5. Cultural and political issues and technology 6. Orientation to technological tools 7. Wide range of resources 8. Information before inception of course regarding hardware and software, technical skills needed
2	**A panic attack**	**Menchaca & Bekele (2008)**	1. Situated learning 2. F2F and change

No.	New metaphor	Authors	Original concepts
		Strodel et al. (2006)	3. Faculty support and knowledge
			4. E-learning is uncomfortable
			5. Worry about what others think
			6. Wish for F2F sessions
			7. No one available to ask
			8. No human contact
		Zhao et al. (2009)	9. Panic attack and fearfulness
			10. Want to be "fed"
			11. Slow process
			12. F2F and prefer lectures
			13. No identification with e-learning
			14. E-learning is an add-on only
			15. Excites students
			16. Poor participation
No.	**New metaphor**	**Authors**	**Original concepts**

3	**Human contact**	**Alias & Rahman (2005)**	1. Support from instructor
			2. Learning tools and resources available
			3. Peer support
		Hara & Kling (2000)	4. Complexities of working alone at night
			5. Interactive communication
			6. Technological problems and distress
		Motteram & Forrester (2005)	7. Student needs and relationships
			8. Role of tutor
			9. Honesty concerns and look person in the eye
			10. Portray oneself
			11. Praise bordering on ridiculous
			12. Time consuming
			13. F2F meetings and orientation
		Strodel et al. (2006)	14. Little socialisation

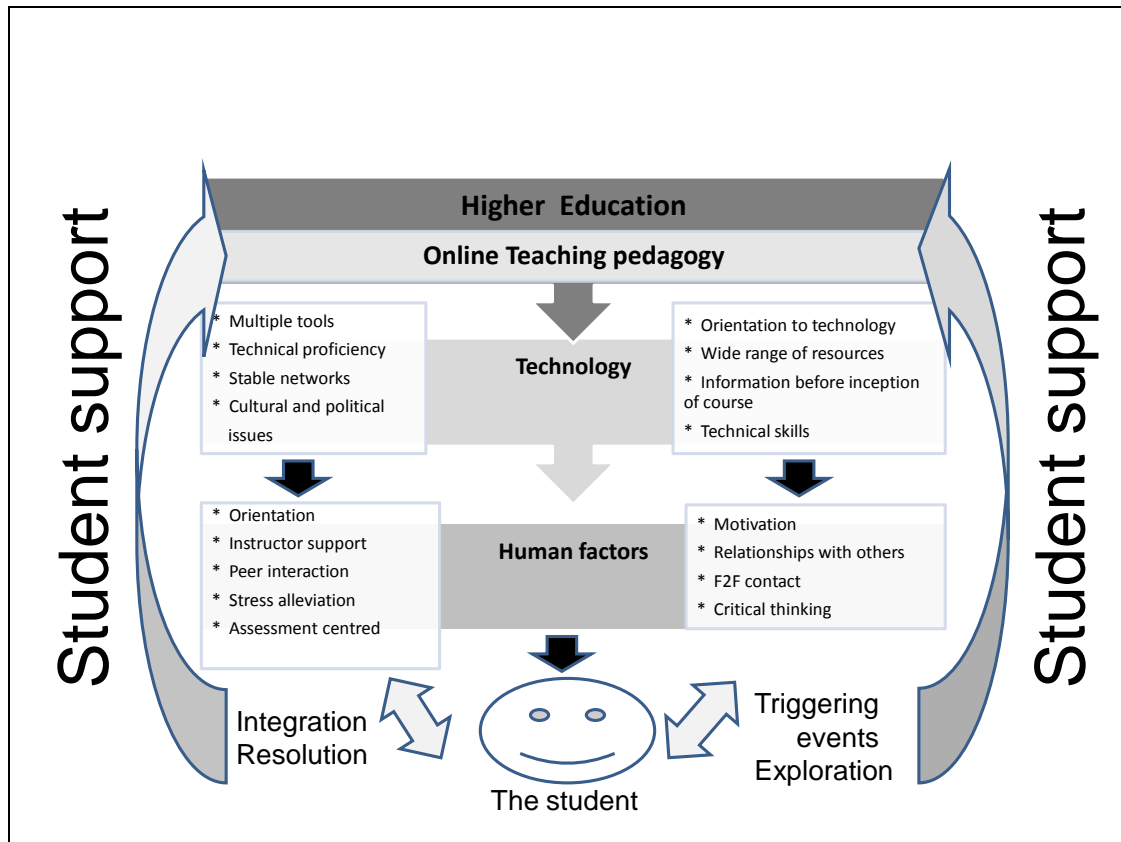|			
		15.	No critical thinking
		16.	Online dialogue no control
	Zhao et al. (2009)	17.	Lack of spontaneity
		18.	Frustrations and waiting time
		19.	Misunderstandings and helplessness
		20.	Disconcerting experience
		21.	The value is questionable
	Menchaca & Bekele (2008)	22.	PDF files with resources
		23.	Community development
		24.	Scepticism over quality
		25.	To get course material
		26.	Positive
		27.	Easy to enrol
		28.	Programs are difficult

Figure 2:   **E-learning support framework for best practices in higher education**

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