



What are Some Key Attributes of Effective Online Teachers?

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Abstract

This article explores some key attributes of effective online tertiary educators. Using qualitative research methods, data were collected via semi-structured interviews which were conducted with a small sample of university academics in New Zealand and Australia, and analysed using an inductive approach and open and closed coding techniques. In this particular study, the term “attribute” was interpreted broadly to include any quality, feature, or pedagogical action attributed to an effective online tertiary educator. Results from the analysis identified the following five attributes: effective online teachers avoid a didactic approach, vary their pedagogy, use productive failure, facilitate the learning process and provide a seamless structure. Given the limitations of the study (small sample size, lack of student views), the findings cannot be generalised without further work, but do provide some information about key elements which may support innovative adaptations to the teaching and learning process in an online space.

Keywords: online teaching and learning; quality teaching; effective teaching

Introduction

According to Hightower et al. (2011), “few topics in education have captured as much attention . . . as the connection between teaching quality and student achievement” (p. 2). As a consequence, there is an overwhelming body of research which highlights the fact that high-quality teaching has a profound, positive and transformational impact on the teaching and learning process (Adams et al., 2015; Belsito, 2016; Blömeke, Olsen, & Suhl, 2016; Decristan et al., 2015; Göllner, Wagner, Eccles, & Trautwein, 2018; Gordon, 2012; Henard & Roseveare, 2012; Ustunluoglu, 2017). In fact, after decades of research Hattie (2003) concludes that “excellence in teaching is the single most powerful influence on achievement” (p. 4). Stronge (2010) argues, too, that “of all the factors within our control in the educational enterprise, teacher quality matters most” (p. 85). According to scholarly research, effective teachers enhance student educational outcomes (Blazar, 2015; Condon, 2016; Gordon, 2012; Nilsen & Gustafsson, 2016), encourage thinking skills of a higher order such as the ability to critique and to think outside the box, move beyond surface learning, and focus on deep and long-lasting learning (Abrami et al., 2015; Berger, Woodfin, & Vilen, 2016; Wang, Pascarella, Nelson Laird, & Ribera, 2015). And they have greater student satisfaction as a result (Bobe & Cooper, 2018; Oolbekkink-Marchand, Van Driel, & Verloop, 2014). Research also links quality learning experiences with higher retention rates at tertiary level (Hu, McCormick, & Gonyea, 2012). According to Tinto (2006), when teachers make the effort to do all they can to support students in their academic endeavours and to ensure they feel a sense of belonging at a given institute, the students more often than not persevere in their studies and make it to graduation. If quality teaching matters, therefore, what does it look like? And if tertiary level teaching and learning is moving rapidly into the online environment (Allen & Seaman, 2014; Crawford-Ferre & Wiest, 2012; Lee, 2017; Scheg, 2014; Serdyukov, 2015), what does quality online teaching look like?

Review of literature: Effective online teaching

Key aspects that emerged from a review of literature include the fact that effective online teachers foster student relationships (Barbour & Bennett, 2013; Garrison, Anderson, & Archer, 2001; Hoyle, 2010; Lai, 2017; Stroet, Opdenakker, & Minnaert, 2013; Velasquez, Graham, & Osguthorpe, 2013). That is to say, right at the very start of a course they attempt to connect with students online (Brinthaupt, Fisher, Raffo, Woodard, & Gardner, 2011). According to empirical studies, this connection can take the form of posting introductory tasks in which students are invited to introduce themselves, making efforts to contribute regularly via discussion postings, and/or providing weekly updates by means of a video file (Bangert, 2008; Garrison et al., 2001). Bangert (2008) calls this fostering an online “teacher presence”. Bailey & Card (2009) argue that effective online teachers show understanding and compassion, and Hoyle (2010) maintains that lecturers even need to “go the extra mile and do some hand holding and advising should it be needed” (p. 39).

Another aspect that was emphasised in the literature was the notion of an online community of learners (Archard, 2014; Bryant & Bates, 2015; Budu, 2018; del Rosal, Ware, & Montgomery, 2016; Khoo, Forret, & Cowie, 2010; Sun & Chen, 2016; Yuan & Kim, 2014). Ouzts (2006) defines this term as “a group of learners who have a sense of belonging” (p. 2). Central to this theme was the concept of an online “social presence” (Howard, 2015; Huang, Law, & Lee, 2018; Wei, Chen, & Kinshuk, 2012; Weinel, Bannert, Zumbach, Hoppe, & Malzahn, 2011), which entails a combination of interaction and communication between peers and between students and instructors; the concept of an online teacher presence (Ke, 2010); and the concept of a “cognitive presence” which Garrison et al. (2001) define as “the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry” (p. 11). When online teachers devote themselves to fostering an online social presence and teacher presence, the end result is a more advanced cognitive presence (Bangert, 2008).

Yuan and Kim (2014) maintain that it is crucial for online teachers to begin building a community of learners right from the very start of a course, and that students need to understand the term and the importance of such a community for enhanced learning outcomes. In terms of fostering a community of learners thereafter, Pytash, Hicks, and Ferdig (2016) advise reaching out to experts so that students can learn from, and communicate and interact with, “elite” members in their field. Yuan and Kim (2014) suggest posting tasks which require students to discuss thought-provoking topics and collaborate, and Khoo et al. (2010) maintain that students benefit from regular face-to-face sessions. According to Yuan and Kim (2014) such social interaction “enhances learning interaction, fosters the development of critical thinking skills, improves learning performance and leads to greater satisfaction with a course” (p. 223).

Finally, in a study conducted in the United States, Young (2006) surveyed a select sample of students, at both undergraduate and postgraduate level, to elicit their views on effective online practices in higher education. The result of the survey produced seven distinct characteristics which, according to Young (2006), embody effective online teaching. It is important to note that each characteristic could link to similar studies on effective online teaching. The seven characteristics were “adapting to student needs” (Young, 2006, p. 7; Cargile Cook & Grant-Davie, 2016), “providing meaningful examples” (Young, 2006, p. 73; Dyer et al., 2015), “motivating students to do their best” (Young, 2006, p. 73; Lehman & Conceição, 2014), “facilitating the course effectively” (Young, 2006, p. 73; Yuan & Kim, 2014), “delivering a valuable course” (Young, 2006, p. 73; Keengwe & Kidd, 2010; Rao & Tanners, 2011), “communicating effectively” (Young, 2006, p. 73; Crichton & McDaid, 2016), and “showing concern for student learning” (Young, 2006, p. 73; Lehman & Conceição, 2014).

The results of a broad review of national and international literature lead to the surmise that effective online teachers foster student relationships and make efforts to establish a community of online learners by encouraging a social presence and a teacher presence. As has been argued, this leads to a higher cognitive presence. Key pedagogical practices for effective online teaching were also uncovered. Given that there is a substantial body of evidence to suggest that quality teaching does matter, uncovering the precise nature of how this is achieved in an online space in Australasia has wide-ranging benefits.

Purpose statement

The aim of this inquiry was to identify some key attributes of effective online educators. The following research question was used to guide the research project: “What are some key attributes of effective online tertiary teachers?” The term “attribute” was interpreted broadly as any quality, feature, or pedagogical action attributed to an effective online tertiary educator, and the term “effective” was defined as maximising student educational outcomes.

Method of data collection

Given the nature of the topic and the limitations connected with such a small-scale research project, semi-structured elite interviews were conducted with a small sample of experienced senior university academics (Gillham, 2003). This was done for a few reasons. Firstly, interviewing elite persons (i.e., opting to interview experts in the field of effective online instruction at tertiary level) meant that the researcher was “in a privileged position” (Gillham, 2003, p. 81) to collect data from those considered to be well informed and well versed in the area. All participants were considered experts in the field of online teaching and learning, technology-enhanced learning, and research by their educational institute—and all held the title of Doctor, Associate Professor, or Professor. Secondly, opting for semi-structured interviews and open-ended questions meant that participants were free to elaborate on a number of issues without constraint (Galletta, 2013). Thirdly, opting for an open conversational framework meant that the researcher could pose additional questions and seek further clarification, particularly in terms of how theoretical concepts could be practically realised in real-life contexts. In regard to the data collection process, letters were sent to seven institutions via email. Five participants from four institutions responded and agreed to participate in this study. New Zealand represented 20% of the sample size and Australia 80%. All interviews lasted 50 to 60 minutes. Three interviews were conducted via Skype and two interviews were conducted face to face. At the start of each interview, all participants agreed to the interview being recorded for data analysis purposes only.

The following questions were used to guide the interview.

- Could you tell me a bit about yourself? Your work? Your research? Your experience? Your credentials?
- What does quality teaching look like to you?
- Drawing from your own experience and expertise, particularly in Australasia, what attributes or qualities would you say contribute to effective online lecturing?
- Describe a situation, in as much detail as possible, in which you demonstrated effective online lecturing.
- What have you learnt over the years in terms of effective online pedagogical practices?
- What else would you like to say regarding our topic of conversation before we end the interview?

All participants gave informed consent to the researcher, in adherence with the Massey University Human Ethics Code (Massey University, 2015). A human ethics risk assessment was

carried out and approval for the research project was obtained from the Massey University Human Ethics Committee (Southern B, Application 14/05). Due to the political sensitivity of the topic, and bearing in mind institutional competition, names of participants and institutions were not identified and pseudonyms were used in all places. The researcher also considered possible conflicts of interest relating to this study and thus made a diligent effort to ensure that all participants were not known to the interviewer, either personally or professionally.

Method of data analysis

All audio recordings were transcribed verbatim and member-checked by each of the participants to guarantee the accuracy and the credibility of the resulting findings (Birt, Scott, Cavers, Campbell, & Walter, 2016). Data were analysed using an inductive or bottom-up approach. This involves allowing patterns, themes, and general conclusions to emerge from the data (Schulz, 2012). As part of this process a content analysis was carried out; that is, chunks of data were taken and linked with key ideas and concepts using a technique called open coding (Schulz, 2012). Open coding was done by hand and then closed coding was used to confirm overall themes and conclusions (Schulz, 2012). Direct quotations were used to further enhance the credibility of findings and to align with the fact that, in the case of elite interviews, qualitative data should be reported in full via “extensive direct quotation” (Gillham, 2003, p. 83).

Findings

Five key themes emerged which are directly related to the research question: “What are some key attributes of effective online teachers?” Each is shown in more depth below.

Attribute 1: Effective online teachers avoid a didactic approach

One recurring theme was that effective online teaching and learning is not just about conveying information, presenting large chunks of material to students, and/or simply transmitting knowledge from the teacher to the learner. In fact, participants were almost unanimous in their negative views regarding the lecture-based approach (as can be seen below):

lecturing is not what a lot of good online teachers do . . . because [that is] transmission mode and it is not the most effective way to teach online at all (Associate Professor Ryan)

I think often what happens with a lot of online teaching is it becomes textbooks online or lectures online and is didactic and it doesn't necessarily deepen understanding (Dr Young)

a textbook online . . . I really think that is a real danger in the space, you just replace the didactic approach in real time with whole chunks of data as opposed to allowing opportunities for interaction and ideas, sharing/swapping (Dr Young)

Expounding on why a didactic approach is not effective, participants gave the following observations.

I always remember this video in the 80s, where they interviewed people about to graduate with 3 years of lectures in a science degree, and their conceptual knowledge of basic concepts like the eclipses and moon phases was lacking. They had just regurgitated the stuff, short recall, quizzes, and exams, and got high distinction (Associate Professor Anderson)

if you actually ask them questions where they need to explain how and why they might propose a certain solution . . . you find students who had the lecture approach initially, really struggle and I would argue often fail at those assessments (Professor White)

how often do people say, you know a company, we hired the top students from the very best universities and it takes 2 or 3 years before they can do anything useful for the company.

This is an example of what I would call inert knowledge problem—they did learn stuff in university from all their lectures but they didn't learn it in a way that was cognitively available for them in flexible means and apply in a situation (Professor White)

Attribute 2: Effective online teachers vary their pedagogy

Another clear key theme that emerged from the qualitative data was the fact that effective online teachers vary their pedagogy. As one participant put it:

teaching is so exciting now . . . you have all these wonderful tools at your disposal to create some magic for your students (Associate Professor Anderson)

Explaining why such an approach is necessary, another participant remarked:

students in the tertiary space are very time poor, you need to make sure that there are short chunks of learning that are pitched exactly at what you want the students to learn (Dr Young)

Going into more detail on this point, two participants commented that:

people make content videos and put them up on line—sometimes they are far too long, 15–20 minutes is too long, you need to make sure there are little chunks of learning (Dr Young)

I think the chunks idea is good . . . a lot of students are looking at things in a cafe or on a train or on a mobile device, so they probably won't have 50 mins, that is just the way the world works now, they will be engaging with these materials at MacDonald's or on a train, hopefully not watching T.V. They probably won't be at a desk in a quiet room (Associate Professor Anderson)

When elaborating on how pedagogy could be varied in practice on an online environment, participants recommended:

there are a whole range of learning opportunities that are available online—a short introductory lecture, it might be an interesting website, it might then move to a couple of key questions, a chat forum (Dr Young)

so you might have students for example responding to a film prompt one week, it might be a resource you have provided with a little chunk of digital content, it might be a reading. I think that enabling students to come together using a Google Hangout or something like that is very effective (Dr Young)

collaborative and cooperative learning, we know there is good evidence that you can have quality learning outcomes through working in teams and in pairs . . . they might be making something, making a video in teams, there are cloud-based video editing spaces (Associate Professor Anderson)

I would definitely advocate a face-to-face meeting of the whole group at a central location up front—at a mutually agreeable time/location—it's a necessary way to start an online course (Dr Young)

Connecting and engaging with experts, beyond the teacher, was another point mentioned by two participants.

each week for nine weeks for half an hour I would link up, via video conference, to other teachers in other parts of Australia, other English teachers, to share their practice. For example, I connected them to the Australian Poets' Society and we had a wonderful half-hour session with the President of the Australian Poets' Society . . . I think reaching out to experts . . . is critical (Dr Young)

I think the global connections thing is really exciting—you know—the ability to connect globally with other students and with other peers and to experts (Associate Professor Anderson)

Attribute 3: Effective online teachers use productive failure

A prominent theme throughout the data was the notion of a problem-based framework for online teaching and learning called productive failure. In direct contrast to lecture-based approaches, one participant expanded on productive failure in the following way:

the essence of productive failure is to have students initially engaged in activities prior to having any instruction at all . . . working on problems . . . giving it a go, coming up with their own ideas (Professor White)

you want the students to come up with the wrong ideas, and you are expecting it. That is why it is called productive failure. You have the failure first, then comes productive opportunities for deeper learning (Professor White)

when you require students to do more difficult open-ended problem solving and you give them new problems to solve, that haven't been directly covered, this is when you start to see dramatically different learning outcomes (Professor White)

the initial phase is for them to explore, generate ideas and explore—and then the teacher is doing the consolidation where the teacher is working out a more authentic expert-like solution to the problem, while also then explaining your targeted ideas . . . so the consolidation phase is when you have the actual teaching goal, that is about 10–15 mins, then we have enough time for students to work on a subsequent problem (Professor White)

One participant went into more depth about teachers' feedback:

it is the kind of feedback that an expert has, somebody who has got deep disciplinary expertise . . . you demonstrate some real fundamental differences and how true experts think about and conceptualise and solve problems than what students do . . . (as a result) students themselves start to construct these schema, these ways of thinking that are going in the direction of being expert-like, setting the foundations for over time . . . they will have higher levels of understanding (Professor White)

Other participants agreed with the principles of this approach in their own professional contexts.

if you do a problem-solving or an inquiry approach you have projects that are meaningful and authentic . . . present them with some difficult challenging concepts (Associate Professor Anderson)

the first step in the week is what I call the entry; the entry is basically a situation in society . . . and it raises questions and I am not telling people how I will exactly deal with that . . . so people are exposed to a problem (Dr Rahier)

Explaining the challenges associated with such an approach to learning, one participant said:

it is an uphill battle, people are so used to teaching the kids first, and then have them do something, give them a lecture and then you give them a tutorial . . . the idea that you would turn that around, I would say really flipping the classroom, just seems so counterintuitive to people (Professor White)

Explaining how such a theory could present itself in practice in the online environment, the following was noted:

The key is really to ask the students to come up with as many ideas as they can about the problem or issue . . . you could make small groups of three or four . . . and each person in the

group is making comments, then the teacher can inspect what the different groups have been putting online, you have an online paper trail, and then from that the teacher has access to the ideas that they have come up with related to the problem, different groups may come up with different ideas. If you are doing an online presentation as the consolidation phase . . . talk through the problem, pointing out relevant ideas that you want to be stressing (Professor White)

Asked whether productive failure could be recommended as a model every time one enters the online learning environment, the same participant noted:

it is not going to be productive failure for every single thing but I think it can be a very powerful way to do learning (Professor White)

Attribute 4: Effective online teachers facilitate the learning

Facilitating the learning was another strong theme. One participant succinctly summarised this idea as “being able to keep a finger on the pulse of learning” (Associate Professor Ryan). When prompted to elaborate on the principles related to this theme, the following comments were made:

facilitation is about trying to include everybody, trying to know and understand your students, being an effective communicator . . . keeping communication going (Associate Professor Ryan)

there is also an element of content delivery or communication . . . an element of engaging students so the student presence is brought into the online environment, the student should be actively engaged (Associate Professor Ryan)

student presence, the online presence, is a really important thing . . . you can find quite a lot about that in the literature because there is social presence and online presence and again it depends on what the objectives and the teaching style of your course are— which ones are important but . . . learner presence is an important thing (Associate Professor Ryan)

The concept of a social presence online and the importance of the presence of the teacher was also mentioned by another participant.

there are some lovely terms about social presence, cognitive presence of the teacher . . . I really like that (Associate Professor Anderson)

the idea of putting a PowerPoint up online and pretending students are going to magically learn. I think that the teacher is possibly more important in these online spaces (Associate Professor Anderson)

When asked how facilitating the learning process could present itself in practice, the following participant gave an example in which colleagues successfully facilitated a MOOC (a massive open online course). Here are pertinent extracts from the interview:

those teachers . . . had a particular way, two of them . . . which was quite different, it wasn't quite revolutionary but it was getting towards that (Associate Professor Ryan)

they had online discussion forums, where students could answer each other's questions, they could ask questions, they could talk about what they understood and what they didn't understand, the idea being that a lot of students will help each other, but at the same time the lecturers were looking in all the time and deciding when they should intervene, so that might be if the conversation between students was going off track, they would intervene and bring it back on track. If there was something that people were just not getting or getting wrong they would intervene . . . it was generally well supported and there were the sort of weekly emails from the lecturers . . . in addition to the weekly tasks and instructions so it wasn't

information overload but it was enough information and those weekly emails were really based on what they saw the students talking about and struggling with. And so it was really targeted to what those learners needed at that point in time (Associate Professor Ryan)

Attribute 5: Effective online teachers provide seamless structure

The final key theme that emerged from the data was the idea of a seamless organised online structure. Speaking about this point, one participant said:

one of the things that the students tell me that they like about one of the main subjects I teach, is the fact that it is very systematic, very clear, and it is very logical and predictable . . . very clear structure and very explicit learning objectives (Dr Rahier)

Expounding on this particular point, Dr Rahier suggested an organised set of microsystems within one weekly macrosystem or module. Referring to the microsystems, he suggested first posing a problem and the learning objectives; then following with key readings, a video, quiz and activity; and, finally, consolidating the new learning by referring back to the problem and offering extension activities, which may be in the form of a critical reflection, a fun video or further readings.

Another point raised in relation to this particular theme, is the fact that technology plays an important part in the learning process. In two interviews it was emphasised that “technology in online learning needs to work seamlessly” (Dr Young) because “students do expect a high quality now because that is what they are exposed to” (Associate Professor Anderson).

Discussion

A common concern mentioned by nearly all participants was avoiding a didactic approach to online teaching and learning. To be more precise, this is a “teaching by telling approach” (Freeman et al., 2014, p. 8410), where the instructor gives a lecture or discourse in the online space and the students are passive receptors. Why is this to be avoided? Bajak (2014) argues that it is not only boring, it is ineffective. And there is empirical evidence to support this claim. Freeman et al. (2014) analysed 225 scholarly studies which compared student achievement in classes that had a dominant traditional lecture-based style of teaching, with classes that used a more active learning style to engage students in the learning process. Results revealed that those in lecture-based classes “were 1.5 times more likely to fail” (Freeman et al., 2014, p. 8410), thus confirming the opinion of one of the participants in the study who said:

you find students who had the lecture approach initially, really struggle and I would argue often fail at those assessments (Professor White).

Speaking of the disadvantages connected with this educational approach, Chuang (2017) argues that when a lecture-based model of teaching is implemented, students are rarely given opportunities to interact and learn from peers and, as a consequence, the learning process is difficult to measure. McLoughlin and Lee (2008) maintain that this is due to the fact that learning is seen in terms of an end product rather than a developmental learning process.

The next theme, varying the pedagogy, clearly supports a more active or student-centred approach to learning. According to Chuang (2017) active learning embodies problem-based learning, collaborative learning, and interactive learning. All of these approaches encourage a variety of short activities which engage students in the learning process. Activities may include students solving problems independently or collaboratively, discussing and sharing thoughts with one another, producing new ideas, conversing with experts, and engaging with dynamic digital content. Reflecting the opinion of two participants in this study who referred to students as time-poor, Serdyokov (2015) argues that short activities are more effective these days because more

and more university students seem to have shorter attention spans and a disinclination to educational work in general. Furthermore, there is also an overwhelming body of research connected with active learning which gives evidence of maximising student educational outcomes (Awan, 2017; Chiu & Cheng, 2017; Çukurbaşı & Kıyıcı, 2017; Walker, Cotner, Baepler, & Decker, 2008). According to scholarly research, active learning approaches encourage students to think creatively, critically, and more deeply (Awan, 2017; Gholami et al., 2016; Ulger, 2018); help students to understand concepts more easily and in a way which lasts longer than just short recall (Mandeville & Stoner, 2015; Markant, Ruggeri, Gureckis, & Xu, 2016); increase student satisfaction and engagement (Awan, 2017; Çukurbaşı & Kıyıcı, 2017); and promote social skills (Mandeville & Stoner, 2015; Ng, Bridges, Law, & Whitehill, 2014).

Another approach which fits the category of active learning and was strongly highlighted in the findings is the theoretical framework of productive failure. This is aligned with problem-based learning, but diverges in the following way. While problem-based learning looks at “students solving ill-structured problems with the provision of various structures and scaffolds”, productive failure involves “students solving complex, ill-structured problems without the provision of any external support structures” (Kapur & Bielaczyc, 2012, p. 47). According to Jacobson et al. (2017) productive failure has two key phases. Firstly, the “Generation and Exploration” (Jacobson et al., 2017, p. 3) phase, in which students are actively engaged in solving a complex problem at a level that is challenging but not exasperating. Although students will fail in their attempt to solve the complex problem or set of problems (this is the very core of the approach), nonetheless, in the process they will have the opportunity to “activate prior knowledge and generate multiple Representations and Solution Methods (RSMs)” (Jacobson et al., 2017, p. 3). The second phase consists of a “Consolidation and Knowledge Assembly” (Jacobson et al., 2017, p. 3) in which support is given by the teacher in such a way that students are able to see for themselves where they went wrong and why. In the words of Kapur and Bielaczyc (2012), this second phase provides “opportunities to compare and contrast the affordances and constraints of failed or suboptimal RSMs and the assembly of canonical RSMs” (p. 49).

While the concept of failure as a teaching and learning tool is an area that is definitely under-researched (Kapur & Bielaczyc, 2012), particularly in Australasia and in higher education, there is empirical evidence to suggest that it is a powerful tool for learning. In a study conducted in Singapore, three schools, selected on the basis of three different academic abilities (low, average, and high ability), compared and contrasted a productive failure approach (fail first, then support), with a teacher-led instructional approach (teach first, then provide support). Results revealed that in all cases students in productive failure classes outperformed those in direct instruction classes (Kapur & Bielaczyc, 2012). The same results were seen in a similar study conducted in India (Kapur, 2014) and Australia (Jacobson et al., 2017). According to Van Lehn, Siler, Murray, Yamauchi, and Baggett (2003), this is because more advanced long-lasting learning occurs when students reach a difficult point, or impasse, which they cannot overcome by themselves.

One key finding which emerged from the study and links with the results of the study conducted by Young (2006), is the idea of effectively facilitating the learning process. Elaborating on just how teachers can effectively facilitate online learning, Merrill (2003) identifies four distinct roles. The first role is that of a “content and resource expert” (Merrill, 2003, p. 14). The idea here is not one of a “talking head” (Merrill, 2003, p. 14), which is linked to the notion of students being passive receptors. On the contrary, an effective facilitator is one who provides the subject matter, yet encourages students to engage and interact with it in ways which encourage new learning and new insights. Students have the opportunity to discuss topics and problems and pose questions themselves. During the learning process, the facilitator is there as a guide and “content consultant” (Merrill, 2003, p. 14) rather than as an authoritative figure. As was mentioned in one particular interview, effective facilitators don’t dominate discussions but they do jump in when conversations are heading off in different directions or when students are missing the plot

completely, and they provide expert-like feedback in the form of weekly messages or personal posts. As one participant mentioned, this strategy really is centred on the learners.

The second role is that of an “online social process expert” (Merrill, 2003, p. 14). This idea links with the idea of a social presence and fostering an online “learning community”, both of which were identified in the literature review and in the qualitative data and embody effective online facilitation. According to Merrill (2003), effective facilitators create engaging environments in which students interact with one another, design tasks and activities to encourage group interaction, post thought-provoking questions, and empower students so “the student presence is brought into the online environment” (Associate Professor Ryan, 2017). Discussion forums are an excellent way to promote social presence and build a community of learners because they promote peer-to-peer interaction as well as peer-to-facilitator interaction—this was often mentioned in the findings. However Whiteside, Dikkers, and Swan (2017) also provide other means of communication such as digital storytelling and social networking sites like Facebook and Twitter. In regard to the latter, this is a whole new world opening up and researchers advise prudence and caution—using student social-networking platforms for academic purposes is still an under-researched area and many students might not feel comfortable blending personal use with study (Whiteside, Dikkers, & Swan, 2017).

The third and fourth roles of an effective facilitator are those of “manager of the structure” and “technical” expert (Merrill, 2003, p. 14). These ideas link with the final theme, which is providing a seamless structure. In regard to the former role, Merrill (2003) argues that it involves providing students with a clear path for success, coherent course content, and an easy-to-follow and well-structured online course. One finding which emerged from the data was the idea of an organised set of systems within a course. That is, an organised set of microsystems which include the following in this order: problem, learning objectives, key readings, video, quiz, activity, consolidation, and extension activities—all within a weekly macrosystem. Such a state of affairs is in line with studies conducted in this area. In one study conducted in the US, 77.78% of graduate students strongly agreed that a well-organised online learning platform was vital (Lee, 2014). In another study, also conducted in the US, students highlighted the importance of being able to find course materials easily (Asherian, 2010).

In regard to the latter role, Merrill (2003) stressed the importance of facilitators maintaining a certain degree of competence in relation to personal digital literacy and new technologies in general. This point is very important for effective online teaching and learning as was noted by two participants. Crawford-Ferre and Wiest (2012) suggest regular professional development and training in this area. Would it not be imperative for online teachers to be up to date with the affordances that technology has to offer, to be in the know when it comes to current trends, and should they not have the skills to know what to do when something goes wrong? According to Crawford-Ferre and Wiest (2012), there is a gap to fill here: “most instructors new to online teaching begin with little to no training or preparation specific to this delivery mode” (p. 13).

Conclusion

An immense body of research confirms that quality teaching is important and does make a difference in the lives of our students. Effective teachers have a profound impact on educational outcomes and a positive influence on the outcomes of the student lifecycle. As a consequence, the purpose of this research project was to explore some key attributes of effective online teachers in higher education. Semi-structured interviews were carried out and qualitative data collected from a small sample of senior university academics in Australia and New Zealand. The results of this study identified five key attributes. Firstly, effective online teachers avoid a learning approach which is didactic or lecture-based; that is, they avoid the temptation to think of the educational process simply in terms of “I speak, you listen”. Secondly, effective online

teachers vary their pedagogy and actively engage students in the learning process via a range of diverse activities, problems, or tasks. Thirdly, effective online teachers use productive failure; that is, an innovative teaching and learning tool which involves students tackling complex problems, failing in their attempt to do so but generating solutions they had not thought of before. Fourthly, effective online teachers facilitate the learning process by establishing a learning-oriented social presence online. Finally, effective online teachers provide seamless structure; that is, they ensure courses work well, have clear expectations, and are well-organised and easy to follow.

Implications

The findings from this inquiry have the following implications. Firstly, an innovative new learning design called productive failure was presented as one effective tool for online teaching and learning. It is recommended that teachers thoroughly ground themselves in the principles and practices in a more profound way than is presented here before embarking on implementation. One helpful scholarly resource is Kapur and Bielaczyc's article on "Designing for Productive Failure" (2012). It was noted that teachers involved in this particular study received training before they applied productive failure in the classroom. Secondly, the findings highlight the need for teachers to reflect and to be open to new ways to teach online that would be more effective, and thus perhaps consider changing or modifying existing practices. Thirdly, the findings also highlight the need for online facilitators to have high levels of digital competence given that they are expected to manage, maintain and manoeuvre through an online management system.

Limitations

This research project has the following limitations. Firstly, the significantly small sample of participants has to be taken into account. Secondly, while efforts were made to ensure an even number of participants from Australia and New Zealand, circumstances prevented this from happening, and only one participant from New Zealand was interviewed, compared to four in Australia. Finally, the fact that data was collected only from educators and no other stakeholders has to be taken into account. For example, findings might have been different had the study also included students' perspectives.

Further research

The results of this research project advocate further research in the area of productive failure, particularly at the level of tertiary education. Added to that is the concept of failure as a teaching and learning tool. Further research should also be undertaken to illicit student views on effective online teaching and learning as they are important stakeholders in the educational process. Further research could be conducted into a range of effective pedagogical tools. Furthermore, because few scholarly studies have been carried out in Australia and New Zealand to investigate the characteristics of effective online teachers, would it not be opportune to do further research in this area, particularly on a grand scale? After all, as has been emphasised, effective teachers have an enormously enriching effect on the educational process.

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