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Modeling students' voice for enhanced quality in online management education

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A B S T R A C T
This article proposes a transferable model for online learning, based on the principles of social constructivism. The findings have been collected through 'end-of-course feedback surveys', and concern a student-sample of 170 nationalities, residing in 154 countries. All students were registered in cohorts of the same postgraduate programme over a period of four years. The findings throw light on learners' difficulties in different parts of the world; along with practical implications for University decision-makers and instructors. The article's contribution is encapsulated in an eight-pillar learning model, aiming to facilitate educational inclusion, quality enhancement, and promote the benefit of learners.

A R T I C L E I N F O
Keywords:
Online learning, Management education, Business learning, Instructional design, Student surveys
Social constructivism, International cohorts, Learning analytics, Educational inclusion

1. Introduction

While the types and models for online learning vary, this article focuses on formal, quality learning for Business and Management students, in the context of social constructivism (Dewey, 1938). The constructivist model of online learning usually involves interaction with instructors and peers in forum activities, which result to a positive attitude and greater learning experiences (Desai, Hart, & Richards, 2009; Efthymiou, Epaminondas, & Ktoridou, 2020; Mooney, 2008), whereas, peers receive and offer feedback systematically (Boling, Hough, Krinsky, Saleem, & Stevens, 2012). Although the environment is instructor-led, the instructor is a facilitator rather than a surrogate teacher or conveyor of information (Smolin & Lawless, 2003).

However, how effective is formal and fully engaging learning in taking into consideration the difficulties of international cohorts; and what practices can add to the benefit of learners? Developing (or converting) material intended for online learning may require instructional designers to put themselves in the shoes of learners located far afield and espouse a distance education mindset. Developing online courses might necessitate adaptations in instructional design (Desai et al., 2009; Koehler & Mishra, 2009), whereas, online learning may require a different pedagogy and unique set of skills compared to traditional classroom teaching. This research throws light on learners' difficulties in different parts of the world. The authors employ feedback expressions of online learners, as these were submitted in the module's 'end-of-course feedback questionnaire'. Learners are located in 154 different countries - all of them registered in cohorts of the same post-graduate business-management program. Although many of the practices discussed in the article are not new, the findings are discussed along with existing best practices to propose an eight-pillar pedagogy model.

In terms of organization, the rest of this article is divided into four parts. The next section presents a review of the literature. Then, we discuss the research process and methods. After that, the analysis presents the findings, along with existing best practices, which contribute to the development of an eight-pillar learning model. The final section summarises the article's contribution as well as future implications for theory and practice.

2. Literature review

The origins of 'Distance education' can be traced in the mid-19th century (Spector, Merrill, Merrienboer, & Driscoll, 2008) when postal services and railway networks enabled an early form of course delivery via correspondence (Keegan, 1996; Moore & Kearsley, 2011). Gradually, distance learning evolved to include mail, cable television, satellite, videotapes and CDs (Whiteley, 2006). Then, computers and the Internet became involved in the delivery of learning and quickly, education entered a phase of time-space compression. 'Distance' was no longer an obstacle (Guilar & Loring, 2008; Moore, Dickson-Deane, & Galyen, 2011). The educational process entered the learner's space, pace and time (Anastasiades, 2002). From this time forward, various names were assigned to distance education, such as eLearning (Harasim, 2000; Tham & Werner, 2005; Triacca, Bolchini, Botturi, & Inversini, 2004) technology mediated learning, online collaborative learning, virtual learning and web-based learning (Conrad, 2006), all of them encompassing electronic and digital characteristics.

The types of distance education for business and management students vary, depending on learning objectives, access, tools and techniques used, the technology employed, type of content and the targeted learner market. For example, Massive Open Online Courses (MOOCs), which initially appeared in 2008 (Leontyev & Baranov, 2013), offer self-regulated learning to massive numbers of learners. Learning outcomes are often abstract and not measurable (Lin, Cantoni, & Murphy, 2018), peer interaction may be low, whereby, learners may have no obligation to complete the course (Alraimi, Zo, & Ciganek, 2015; Chen & Chen, 2015; Imlawi, Gregg, & Karimi, 2015). Other models are characterized by the so-called airline budget analogy, where the base price might simply be delivery of material and any more, such as instructor feedback, comes at additional cost. Some programs still share the characteristics of self-study 'correspondence learning', inasmuch as students receive study guides, textbooks, assignments and other study materials through the post, but make use of technology to invigilate final exams remotely (IATA, 2018). Also, regardless of the model, online learning usually takes place on a specific web-based area, which is often identified as digital platform; a Learning Management System (LMS); a Course Management System (CMS); a Virtual Learning Environment (VLE); a Virtual Classroom Setting (VCS); or an Online Learning Environment (OLE), to mention just a few (e.g. Spector et al., 2008; Whiteley, 2006; Zhang & Kenny, 2010).

While the types and models for online learning vary, the current article focuses on formal, quality learning for Business and Management students, in the context of social constructivism (Dewey, 1938). As part of social constructivism, online learning requires the technology, resources, instructors and students to come together successfully. Despite the benefits of flexibility, access from around the world and lower cost; student engagement, satisfaction and retention are not guaranteed. There are a variety of approaches to optimise online learning which do not always make the same recommendations. However, they usually cover the common factors of the student experience online, peer to peer engagement and the feedback. Therefore, the literature review firstly covers the student's experience and secondly the role of the university. Finally, informed by these two sides, models of online delivery that emphasise social constructivism are discussed and the gaps in our understanding are identified.

2.1. Student experience online and peer to peer engagement

The student's experience online is that of a technology user of e-learning platforms, a person collaborating online and a learner. It is important to appreciate that there are management students that are comfortable working online and enjoy it, while there are others that may have limited skills and do not enjoy the online experience (Xiao et al., 2020).

While the technology used to deliver online modules such as Virtual Learning Platforms like Moodle and Blackboard are not new, the role of technology is evolving with Simulations (e.g. (Brown, Robson, & Charity, 2020), Artificial Intelligence (AI) and deep learning used increasingly (Cheng, Sun, & Zarifis, 2020). AI is also helping make customised recommendations for the students on which module to choose based on their personal preferences (Sun et al., 2020), whereby, it is linked to sustainable development (Goralski & Tan, 2020). There are, however, limitations to how far Simulations and AI can be used to give an individual experience as modules need to be delivered and evaluated at a consistent standard.

However, while technology advances, it often fails to consider the appropriateness or applicability of this technology in international online cohorts. The online teaching environment often loses some of the intimacy of the physical classroom and campus experience. Online students can also feel loneliness and isolation (Rovai, 2002). When the sense of community is vague, student performance and overall learning (Epp, Phirangee, & Hewitt, 2017) are influence negatively. Therefore, one of the objectives in this article is to explore the use of technology in management learning. Furthermore, as online students can live in different countries creating a shared culture in the cohort can be harder than face to face. As we explain below, instructors encourage and, in some cases, require more peer to peer engagement.

2.2. Feedback, evaluation and resources

As with peer to peer engagement, feedback and evaluations need to be more regular online. These regular evaluations can be either formative or summative. There are several approaches to peer feedback, with some of them being more effective than others (Saeed, Omid, Javad, & Harm, 2019). Some universities use two or three assignments a week with a summative evaluation. One approach is to

require a certain number of posts that respond to other students' posts (Salmon, 2004). Assignments can include making posts in the discussion forum, short reports on key concepts, longer assignment and requiring students to reflect on their learning once or twice during the module. Commentators argue that sometimes, peer judgements are even more important than instructor appraisals (Boud, Cohen, & Sampson, 2014). Also, scholars have shown that peer feedback can improve the quality of students' writing (Noroozi & Hatami, 2019) and relevant topic knowledge (Valero Haro, Noroozi, Biemans, & Mulder, 2019b).

Moreover, the flipped classroom, where students review the material on their own and then put questions to the instructor is also effective. It has been found to be beneficial if the instructors response can be in real time to offer a different channel of engagement (Dixson, 2010). AI driven automation is also gradually being used to provide feedback to students online (Fu, Gu, & Yang, 2020).

However, peer feedback is not without its challenges. For instance, one concern relates to students' limited knowledge, experience and language ability, which may influence the quality of peer feedback negatively (Noroozi, Kirschner, Biemans, & Mulder, 2018). In addition, there are concerns about emotional and psychological interplay of giving and receiving critical feedback (Andriessen, 2006).

By the same token, helpful to the process of collecting and analysing feedback, is the use of analytics. The collection, measurement, analysis and reporting of data about learners, also known as Learning Analytics (Elias, 2011; Leitner, Khalil, & Ebner, 2017), have proven to be very useful in online learning (Mazza & Dimitrova, 2007; Park, Yu, & Jo, 2016). Although analytics may not be directly related to students' learning outcomes, they enable a deeper understanding of students' learning experiences (Viberg, Hatakka, Ba¨lter, & Mavroudi, 2018). Based on student-generated data, they help educators examine, understand and support students' study behaviour (Rubel & Jones, 2016). Learning analytics help refine institutional, operational, and financial decision-making processes (Lawson, Beer, Dolene, Moore, & Fleming, 2016), whereas, the benefits for the students, is that education can be tailored to their needs (Junco & Clem, 2015).

2.3. Models of online delivery in business as part of social constructivism

The literature review has shown a variety of factors in online teaching and how to approach them. Based on the factors that are outlined in the previous sections, several models of online delivery exist that attempt to bring together complementary features in an optimised way. Drawing on the work of major educational theorists, such as Dewey (1938), these models encourage a social constructivist approach inasmuch as they emphasising social interaction. The constructivist model of online learning usually involves interaction with instructors and peers in forum activities. Student participation in social interactions is a key component of the learning process and knowledge generation. High levels of interaction among learners result to a positive attitude, greater satisfaction and therefore, successful distance education (Desai et al., 2009; Mooney, 2008). In addition, the environment is instructor-led where learners are guided through the content and learning activities at specified times (Rhode, 2009). Often, the instructor is a facilitator rather than a surrogate teacher or conveyor of information (Smolin & Lawless, 2003). Instructors as well as peers, systematically receive and offer feedback, which is an essential component of effective teaching and learning (Boling et al., 2012).

One popular approach is to separate the delivery into five stages, each with different priorities (Salmon, 2004). The five stages are access and motivation, online socialisation, information exchange, knowledge construction and development. The benefit of this model is that it gives the instructor a clear plan of what to focus on during each stage of a module. It also makes it clear that the instructor's role online is different to face to face with more emphasis on socializing the group.

Despite the effectiveness of these models the retention, engagement and satisfaction in online modules is still often lower than the online equivalent. The literature review of current factors in online education and models of delivery illustrate that there are still challenges. Each model needs to be tested in its context and the cultures involved to customise and optimise it.

3. Method

The findings of the study have been extracted by anonymous student questionnaires and analytics collected by various departments in the University. The student questionnaires have been filled-in online as 'end-of-course evaluation surveys' and cover the period between November 2015 and October 2019. The study's population size is 5,237, which is the number of completed student feedback-questionnaires. Most of the students were between 25 and 44 years old (Table 1), whereas the population includes students of 170 nationalities, residing in 154 different countries, all of them at the same postgraduate level and programme.

With the margin for error at 5% and confidence level at 95% we calculated that reviewing 358 feedback questionnaires would be an appropriate number for reflecting the views of the overall population size and at the same time be statistically significant. The selection of questionnaires took into consideration various behavioural and demographic components. The sex distribution of the population

Table 1
Age range of the Study's population size.

Age Range	# of student Questionnaires	%
18–24 years old	147	3
25–34 years old	2424	46
35–44 years old	1964	38
45–54 years old	599	11
55–64 years old	98	2
65–74 years old	5	0
Total	5237	100%

size was nearly equal (male: 50.3%; female: 49.7%). The same gender percentage has been applied in the selection of the sample to achieve a balanced representativeness. 78.2% of the students in the feedback sample were employed at the time of the feedback survey – this is an important element in this model as students are asked to complete reflective tasks (e.g. Pillar 4).

The student feedback questionnaire was comprised by ten qualitative open-ended questions, plus one 'final thoughts' and suggestions link. The findings are student expressions of ongoing learning experiences, submitted on a completely voluntary basis, unbiased and carried out anonymously. Notably, students' qualitative responses in most questionnaires were unexpectedly long and thorough (especially compared to authors' experience with student surveys in face-to-face environments). Does this mean that student evaluation surveys are just another way for online students to recover the lack of physical presence that is central in face-to-face programs? This is a phenomenon that needs to be explored further, maybe in a separate paper.

Each student-answer in the course evaluation survey was examined carefully through the 'first cycle coding' (Miles, Huberman, & Saldan˜a, 2013). The first cycle included categorising and labelling student responses and matching recurring opinions under key themes, which have been used to formulate the model's pillars. The process then entered the second-cycle coding, which helped reanalyse and reorganise the material produced through first cycle coding; and findings were discussed together with existing literature and best practices to formulate small paragraphs. It worth mentioning that until that point, the number of the model's pillars were not finalized. The 'meta-code' method (Saldan˜a, 2009) was employed to produce deeper reflections of similar data and patterns. The process included developing longer, analytical pieces of text to be integrated in the article's analyzable units (Efthymiou, 2018). Findings were then linked back to existing literature and formulated the final version of the eight-pillar model, which is presented immediately below.

4. Results and discussion: proposed pedagogy model

4.1. The digital social core

Our findings reconfirm that social presence is a major motivation factor in online classes (Robb & Sutton, 2014). It's not too long in the past that the sense of belonging and social presence in traditional classroom environments, according to online learning critics, could not be replicated on computers and the Internet (Revi & Babu, 2017). It seems, however, that this is no longer the case. A 'Digital Social Core' exists in a context where most people live automated and networked lives through a social transformation that does not stop at nation-state borders (Castells, 2001). The global average time spent on social networking sites like Facebook, WhatsApp, and WeChat, to mention a few, is almost 5 h a day with some standout countries such as Britain being a staggering of 10 h every day (Smith, 2017). The world sends on average about 270 billion emails a day (Tschabitscher, 2018). Students today rely on computers, the Internet and mobile devices to stay socially connected. Similarly, our findings suggest that the majority of students access the online learning platform through smartphones and computers whereas tablets are falling out of favour (Table 2).

Interestingly, students use different devices for different tasks. While the majority of students use smartphones to read and/or navigate the platform, when it comes to writing up and submitting a summative essay, the use of smartphones is reduced to 25.82% whereas the use of desktop rises to 67.66%.

It is in this context that online learning takes place. Central element in the digitization of human behaviour is the need to socialise and interact, hence the 'Digital Social Core'. Socialisation is no longer restricted to physical classrooms and cafeterias in campuses. A new global social structure is in the making and it is no wonder why some online programs are even more popular than traditional learning (Gates, 2018). However, the social context alone is not enough to ensure student motivation and successful learning. A number of strategies and best practices should be used to enhance quality learning experiences. In this article, quality enhancement concerns a deliberate effort to focus on, and improve students' learning. It is defined as 'taking deliberate steps to bring about continual improvement in the effectiveness of the learning experience of students' (QAA, 2003). This effort is reflected in the eight-pillar model, which is presented in the following analysis.

4.2. Pillar 1: online platform communities

The study's findings (Table 3) suggest that platforms should rely on and, at the same time, expand students' need to socialise and communicate. This can be achieved through a wide range of shared activities and group operations on the platform (this is discussed in more depth in the analysis for Pillar 2). Platforms should be used as virtual spaces enabling students to interact, network, co-produce, negotiate, lead, and establish beneficial relationships. Indicative of the peer relationships that can be shaped is the following statement: ***Firstly, I'd like to thank the most amazing peer who has been so supportive and helpful throughout the module. I am so lucky to have had her to help me throughout the module. She is a super intelligent and hardworking individual and i hope i get to work with***

Table 2
Use of device according to task.

Use of devices for Reading/Navigating		Use of devices for Writing and Submitting Essays	
Smartphone/Mobile	76.32%	Smartphone/Mobile	25.82%
Desktop/Laptop	19.51%	Desktop/Laptop	67.66%
Tablet	4.17%	Tablet	6.51%

Source: Log data analytics provided by the IT.

Table 3
Student expressions on the importance of online communities.

To the whole class group your contribution to the forum made a huge impact, keep it up.
I realize now that learning lies in community.
I never expected this kind of collaborative effort, the knowledge and experiences shared in the course.
I have been challenged to the extent that I had to contact other students to help me out with understanding what is expected of me especially during the second assessment.
To my peer, that is how it is done, thanks for being always present throughout the course. We would discuss everything, not only peer work, but also other sections of the course and life in general, bravo!
Prior to this class, I had never thought of education as a learning community. I had heard of the term before, but not in the same context as I have come to understand it in these last few weeks. I now believe that learning is not a one-person show.
Probably the most important aspect of this distance online class has been learning about what defines a learning community.
Even though I was not able to comment on every forum post, I gained a great deal from all classmates contributions.

her again. This module has really helped in creating a special lifetime bond with her even though I have never met her. Working together as part of a community provides members with enhanced cohesion and sense of identity, both in the individual sense and in a contextual sense, that is, how the individual relates to the community as a whole. To use the words of Lesser and Storck (2001), a sense of identity is important because it determines how an individual directs his or her attention. In other words, what one pays attention to, is in turn a primary factor in learning. Therefore, identity shapes the learning process.

On the other hand, in one of the courses where members' interaction was minimum, 83.5% of the students expressed dissatisfaction. A student, for instance, mentioned: ***I want to see more engagement and group discussions in my next module.*** In a similar vein, a student commented ***[t]he course should be more interactive***. Teamwork and student-led tasks, of course, are not free of challenges (e.g. Doukanari, Ktoridou, Efthymiou, & Epaminonda, 2020). In the same course, some students admitted that peer work was demanding whereas individual tasks enabled a more flexible mode of work:

- ***The individual tasks helped us work at our own pace and not slowed down by a non-responsive peer member.***
- ***The work was individually done, as such removing the challenges of group or peer work making it more flexible.***
- ***Peer engagement was difficult due to short timing and high work pressures.***
- ***The aspect of peer tasks did not work well for me as my partner was not readily available so even i ended up not attempting which affected my understanding and feedback***
- ***The peer review tasks tend to become difficult if one is paired with a peer who is not forthcoming.***
- ***Peer formative tasks bring about a lot of pressure. One struggles to balance the limited time available to complete both the weekly tasks and the assignments.***

Quotations such as these reveal how important it is for instructors to monitor student activity through analytics and be aware of the various difficulties occurring in each cohort.

Our findings resemble previous research in the field, suggesting that successful online learning is not simply about developing passive, correspondence material. Drawing on the work of major educational theorists, such as Dewey (1938), this model supports the social-constructivist view inasmuch as the process of learning is facilitated through individual participation in social interactions. Similarly, the first pillar is called 'Online Communities' and it essentially expands the digital social core.

Following the constructivism paradigm, online learning abounds with community features and social interconnection where knowledge is constructed through social negotiation (Aviv, Erlich, Ravid, & Geva, 2003; De Laat, Lally, Lipponen, & Simons, 2006). Learning occurs while individuals interact "with more knowledgeable members of a community within specific social, cultural, and historical contexts" (Kong & Pearson, 2002, p. 2, cited in Boling et al., 2012, p. 119). Hence, pedagogical tools should be designed to cultivate a sense of community (Desai et al., 2009). Linking back to our literature review, the benefit for learners is that, fostering a sense of community in online courses helps minimize feelings of isolation (Rovai, 2002), improve student performance (Drouin, 2008) and lead to deeper as well as better learning (Epp et al., 2017). The sense of belonging in a vibrant community serves as glue that holds all students, faculty and University personnel together in the long journey of learning.

Moreover, other than supporting constructive bonding and knowledge transfer, online platforms result in knowledge retention inasmuch as they serve as databases. Instructor feedback and students' contributions, be it a suggestion, idea, formative peer commentary, remain stored in the platform until a course ends. Many students expressed positive statements for being able to return and make use of previously submitted feedback while working on their summative work. In a traditional brick and mortar classroom, a missed lecture (either because a student woke up sick or missed the bus) is missed forever. With online learning, nevertheless, students can always return to the platform to double check or reconfirm their understanding on specific theoretical models, unfamiliar terminology, workplace examples and/or reconsider instructor feedback. In this way, a learning platform is considered to be a mean of developing and maintaining long-term scholarship memory, or to use the words of Badawy (2012: 138), it could be a 'running archive'.

Overall, a learning platform is a vehicle through which individual students work as part of a community to improve their performance. It is a space in which the interaction of its members is used to address learning outcomes and goals. The communication and interaction within the community should be based on three mainstays: a) interaction between learner and the learning material (as discussed in the following analysis on Pillar 6); b) interaction between learners and instructors (as discussed in the analysis for Pillars 2 and; c) interaction between learners themselves (peer interaction as per the discussion on Pillars 4 and 5). As discussed in the second pillar below, these levels of interaction are not very different from what is expected in contemporary global workplaces, especially

those with geographically dispersed workforces.

4.3. Pillar 2: simulating a workplace environment

A question that should be posed alongside every online offering is: does an online learning programme prepare business students for the industry? In other words, how does a particular MBA programme benefit students by helping them develop the right skills for their future working life? One way to address this requirement (other than the Employer engagement that is discussed in Pillar 8; and the team simulations discussed in the Literature Review - e.g. Brown et al., 2020), is to use the platform and online community to replicate a professional workplace environment.

Asked to discuss three aspects they liked most about the course, 76.3% of the students commented positively on how their online studies replicated aspects of their daily life at work. Some of those responses are presented in Table 4.

As mentioned in the 'Method' section earlier, 78.2% of the students in the feedback sample were employed at the time of the feedback survey. For these students, a typical day at work includes frequent communication with colleagues, responding to emails and using various electronic means to complete tasks. Many of those students are familiar with electronic platforms, such as wikis and intranets, or even project management software on which employees share knowledge and updates on the progress of various tasks. This kind of virtual work is part of a wider digitization, where organisations in various sectors, operate through electronic platforms. Some examples include traders (Borch, 2016), fin-tech organisations (B´atiz-Lazo & Efthymiou, 2016a, 2016b, 2016c), government-let operations (Efthymiou & Michael, 2013), cruise companies (Sdoukopoulos et al., 2021), as well as hotels and other tourist organisations (Efthymiou, Orphanidou, & Panayiotou, 2019), among others. Virtual meetings are also common, especially for geographically dispersed workforces, whereas employees often participate in virtual/distributed Communities of Practice (CoPs) through communication media such as discussion groups or chat rooms as support mechanisms (Lesser & Storck, 2001).

Similarly, the online learning community enables students to work on the electronic platform, respond to emails, address tasks, offer peer feedback to formative tasks, upload material, socialise and more. This kind of community interaction, replicated a workplace environment, as if management students are part of a 'Community of Practice' in a workplace. As presented in Table 4, the principle remains the same with a daily workplace: a group whose members regularly engage in sharing and learning against accomplishing set targets. This model suggested that learning online should not be different from daily life at work. Online learning and the educational inclusion that comes with it, favours the development of a diversified environment, which is so much sought by contemporary organisations. The student benefit here is the mix of experience for people with different cultures, ideas, national backgrounds, religions, genders, abilities, disabilities, sexual orientations, socioeconomic backgrounds, personality types and learning styles – all of them coexisting within shared virtual boundaries.

Moreover, group conference calls and webinars are also helpful in promoting a workplace environment where students learn and exchange ideas. They also offer a psychological advantage as members of the community can interact in real time. Some students expressed a preference towards synchronous discussions. As some of the students explained:

- ***I would have appreciated more real time online classroom for discussion purposes to better grasp concepts and their applications in more pragmatic terms, as I find I learn better that way.***
- ***A virtual face to face session would enhance my understanding of the subject matter.***
- ***To see our lecturers and tutors on webinars discussing or giving general feedback on topics in the VLE would make a difference.***

Synchronous connections, however, are not always successful as students may live in areas of the world with poor connectivity. Also, students located in different time zones may be at work or may have to wake up in the middle of the night to attend. Besides, if poor connectivity, different time zones and other technical issues can happen in an international workplace environment, they can also happen in an online studying environment. While it is important to familiarise students with the intricacies of a workplace environment, if webinars are used, they should be recorded and transcripts should be added to them for those students who missed them.

Table 4
Student Expressions on the analogy to a workplace environment.

I have learned practical ways of communicating as part of my job role.
Communication, teamwork and peering was necessary during this course class, just as it is in the workplace. I couldn't always "do it alone," just as I cannot always do it alone at my job.
Everyone was randomly assigned with his peer, gaining experience, different background & culture is unique during a small time frame.
I never imagined that working in a police station in another country could be so different from home.
Weekly forum in which students made references to their country was useful to my daily work.
The workplace-like communication is very engaging.
Another think I learned is how to properly team plan in my daily work.
Working as a unit with all different colleagues to achieve one goal is among the skills I improved.
Platform's scheduling helped me improve my busy day-to-day schedule.
The way it works helped me improve my punctuality, responsibility and teamwork to address mutual goals.
Working on the platform helped me consider the cultures of the people in the class to ensure communication is most effective.

4.4. Pillar 3: discussion forums

The vast majority of students' expressed themselves positively (93.7%) on the use and usefulness of discussion forums:

- ***Forum discussions really help us focus.***
- ***Having a peer discussion, it was a new, constructive experience.***
- ***I felt easy to receive scientific material through discussion.***
- ***Discussion forums enhanced innovation and development.***

In addition, on some occasions, students were selective through suggestions on specific discussions: ***[w]e could talk a bit more on design thinking*** and ***[t]here was no interactive peer discussion forum on performance measurement unfortunately.***

Unlike the objectivist model, where instructors answer students' questions directly, the constructivism model benefits the students through social interaction in discussion forums (Piccoli, Ahmad, & Ives, 2001). A classroom discussion signifies that students' role is more active, compared to passively taking in information. There are various types of classroom discussions, varying from purpose, content and format. Student discussions and the creation of meaning through talking have always been helpful within the confines of brick-and-mortar classrooms (e.g. Halliday, 1975, cited in; Larson & Keiper, 2016). With the progress of technology, discussion forums became an integral part of online classes too, both synchronous and asynchronous. In fact, online discussion forums signify the evolution of correspondence education to online learning through the diffusion of computers and the Internet.

However, other than the usual benefits of classroom discussions (e.g. Jeong, 2003), what is important in the current article is evidence suggesting that some learners voice their annoyance with discussion forums. Such findings resemble Chiu and Hew (2018), who suggest that discussion forums are not necessarily everyone's preferred way of learning. While trying to adopt a balanced approach - and avoid over-emphasising the strengths of each practice – we share the consensus that students prefer discussion forums when they are meaningful and authentic. They should have a clear purpose and be able to provide students with experiences at various levels of cognitive processing (Chiu & Mok, 2017) and behavioural actions that challenge their higher-order cognitive skills (Gillespie, 1998), as explained in the next pillar.

4.5. Pillar 4: learning by doing

Table 5 reports interesting student expressions, which reveal how students benefit through 'learning by doing'.

As with the Discussion forums discussed in the previous pillar, a series of formative tasks should be in place to leverage hands-on learning. The benefit here is that students learn in more breadth and depth when they participate and do things (Barton, 1995). Towards this end, a series of structured formative tasks should be offered to students on a weekly basis, asking them to do things. With formative tasks, students are busy formulating their own policies, inventing their own product solutions, starting up companies from scratch, adopting the role of a psychologist, a lawyer or an educator, always depending on the program they have selected. Also, students may be asked to complete reflective tasks, where they are expected to explore and integrate theories, models and tools in their own cultural contexts and workplaces. While the external and global environment changes endlessly, each theory is approved or disapproved differently in diverse parts of the world.

Interestingly, many students were performing certain tasks at their workplace without knowing their scientific name. A student said: ***I have been part of CoPs [a Community of Practice] at my work without labelling it as such.*** Another student mentioned: ***I should admit that the second assessment has forced me to consult with other students but at the end of the day it all came to draw me back to what I am doing at my work on a daily basis.*** One other student said: ***the course has been an eye opener as to the theory behind many of my daily business practices.*** So another benefit here is that learners reflect on, and construct their own meaning and knowledge from their own life and workplace experiences (Jonassen, 2004).

Reflective tasks enable students to test established theories and practices to new environments. It is a practice through which the learning material enters the students' world. It penetrates their daily life at work; their daily environmental bubble and asks students to test universal theories in their own profession, workplace, sector and micro-environment. A student mentioned:

Table 5
Student expressions on learning by doing.

Reflective work helped me pay particular attention to the interactions and dynamics within the organization
I see myself as a better manager at end of this course going forward. I am one manager who will advocate for the lessons learnt in the course at my workplace.
The module has succeeded in reshaping my organizational practices. It has greatly enhanced my capacity to develop from managership into leadership.
The practical nature of the course where theory was related to case studies and own organization practical experiences was of great benefit to me.
Strategy as Practice has opened my professional eyes as well as answer some questions in my current work environment. I was able to quickly identify the gaps in my own practice, lacking or those that need improvement.
Community of practice is one such area where I need to engage more as I had no idea of its contribution to organizational success.
The material got me in a deeper reflective mood on the current practice at work and how we can imbed these from a functional to organizational level.
I have just been appointed to a new and challenging role within my organization and the key learnings will enable me deliver on my objectives.
The most exciting part to me was that I got promoted to act as Managing Director for a big organization where I immediately put my acquired knowledge into use.
Key critical concepts were learned and applied in real time managerial decision making.
I seize this opportunity to appreciate my team members who regardless of our conflicting time-zones and priorities as regards work and other engagements collaborated with me in brainstorming to produce very quality and outstanding peer tasks.

My awareness of the concepts of Intellectual capital and explicit and tacit knowledge will help me as I go forward in mentoring young engineers. Similarly, a student stated: ***[b]y using my organization as to apply my chosen theory I was able to see how better things could be done in the organization***.

This process leads to relevant education. It is about what is relevant to industry expectations, student aspirations and national welfare (e.g. Efthymiou, Epaminondas, & Ktoridou, 2020).

This process ensures that the learning offering is interactive, project-based, and collaborative (Partlow & Gibbs, 2003). Then, students are expected to upload and discuss their findings with the other members of the cohort on the learning platform. Uploading their work on the platform is important as motivation increases when students realize that their work will be displayed (Bonk, 1999). As discussed in the next pillar, this is the point where knowledge is generated, shared with and retained among the members of the online community.

4.6. Pillar 5: continuous feedback

In the findings we collected, students' expressions of appreciation were widespread, as with the student quotations appearing in Table 6:

The current study re-confirms the value of constructive critique. While students accumulate knowledge through working on tasks (Pillar 4), it is important to offer and receive feedback systematically. In this analysis, feedback is divided into two categories. The first category is a) peer feedback to all those tasks that are student-led and b) continuous feedback by instructors, who are committed to offering detailed commentary on all students' formative and summative contributions. In the first category, the benefits of peer feedback have long been explored and theorized by various researchers (Gielen, Peeters, Dochy, Onghena, & Struyven, 2010; Hanrahan & Isaacs, 2001). As we mentioned in the literature review, commentators often argue that peer judgements are sometimes more important than instructor appraisals (Boud et al., 2014).

Furthermore, in one of the courses, there was a complete lack of teamwork and peer feedback. The lack was identified by students who, in turn, came up with relevant recommendations: **[a]nother much desired feature that wasn't present is teamwork** or **'[p]eer feedback and assignments do have a way of helping to harness the strengths of individual members and enhancing the understanding of the course content.** However, not all students were comfortable with peer feedback at the beginning. A student, for example, stated: ***Initially there was some hesitation in providing peer feedback on tasks as members feared bruising each other's egos.*** Another student mentioned that ***it took some time for members to appreciate each other's effort, weaknesses and strengths.*** These quotations point to existing literature suggesting that peer feedback is not always positive. Cheng, Liang, and Tsai (2015) explain that negative peer judgments may evoke negative emotional responses and affect participation. Similarly, Shute (2008) communicates that negative peer feedback may disrupt student performance. In other words, the type, content and style of peer feedback is decisive in students' overall leaning experience (Cho & MacArthur, 2010; Gielen et al., 2010). Towards this end, Cheng et al. (2015) make a distinction between the various feedback types to conclude that cognitive feedback (e.g. direct correction) is often more helpful than was affective feedback (e.g. praising comments) and metacognitive feedback (e.g. reflecting comments).

The essence here is that students (in the same way as instructors), should be aware of, or receive training (ideally during the online induction) on the proper way of offering as well as accepting peer feedback. Although this extra effort is likely to prolong the students' induction process, the long-term benefits will surpass the time invested. In addition, based on the responses we collected in student-evaluations, instructors should always keep an eye on peer-feedback exchange and intervene to offer their own informal evaluations on the quality of peer feedback.

The second category, namely 'systematic instructor feedback', is an equally essential element of the learning process. Instructor feedback should be offered to all students' contributions, both formative and summative, both assessed and not assessed. Offering feedback at the end of the course simply to inform students where they have gone wrong is unlikely to enhance student quality learning (Grosjean & Sork, 2007). Feedback should be continuous; a motivating two-way dialogue; in the form of constructive critique rather than criticism. Often, formative evaluations are the only opportunity for students to receive Instructor feedback and improve their weaknesses prior to submitting a summative assessment. Ongoing feedback help keep students updated on their progress and serves as a foundation for formal assessments. A student for example shared that: [t]***he course instructor gave timely feedback to a number of my submissions, which invariably gave the much needed guidance for future assignments.*** Another student said: ***[t]he course leader***

Table 6
Students' expressions on Tutor and Peer Feedback.

Thanks for your peer guidance and timely responses to our questions. Thumbs up to Team P members ... (names removed to maintain anonymity) for their support, dedication and motivation. All the best to my fellow group members, together we will achieve. See you in the next course.
Also thanking my peer ... (name removed to maintain anonymity) for the nice time we had together in reviewing each other's work. It made the whole course more rewarding and enjoyable. Hoping to work with you again in later courses. Thank you (name removed to maintain anonymity).
To my team's group members ... (names removed to maintain anonymity), thanks for all your support beside the challenge of time in different countries and I hope you guys are proud of yourselves, because we've done incredible work together.
I particularly appreciated the peer pairings as it prompted me to ensure to get tasks done on time, because if i did not, someone else would get affected. Secondly it allowed me to get an alternative perspective on the topic discussions. It was a pleasure working with (name removed to maintain anonymity).
The course team members had developed closeness and friendship. This experience has improved my teamwork skills at work.
Before participating in this course, I never gave too much thought to peer feedback. I find this approach much more effective as it leads to greater accountability and participation on both our parts.
Feedback from module tutor and colleagues were very encouraging when I doubted myself at times.

consistently provided important feedback that clarified important aspects and deepened my understanding of theory.

At the same time, lack of systematic feedback in one of the courses, generated several negative expressions. Here we present a few:

- ***There was no feedback for the weekly tasks and that was quite discouraging.***
- ***I did not get much feedback from the instructor unlike other courses. The feedback actually helps to guide my thoughts in the right direction.***
- ***Regular feedback from the instructor would have been more encouraging.***
- ***I would love to have weekly feedback from the course lecturer. This was one obvious downside which in many ways affected enthusiasm and attending to tasks promptly.***
- **In all fairness feedback is vital.**
- **Any feedback across my participations would be more beneficial to gain more skills in my professional and personal life.**
- **The down side was the lack of feedback from the instructor which left me guessing on whether I was on the right track or not.**

Also, if students' formative work is evaluated regularly, there should be no surprises during summative assessment. Positively balanced feedback is an opportunity to recognize and build on successes whereas at the same time it is helpful in minimising cheating and plagiarism. This is because instructors get to know the work of their students through a mutually active role in continuous assessment. Additionally, systematic feedback should be offered against specific targets. Grading rubrics and marking criteria (for both formative and summative tasks) should always accompany assessment-briefs and be used as benchmarks. Vague feedback, on the other hand, is likely to be of no value.

Additionally, feedback to submitted summative assessments should be offered prior to the deadline of another summative work. In one course, a second summative assessment was due without feedback being offered on the previous one. Many students expressed their dissatisfaction: **[i]n *writing my essay for Summative Assignment #2, I would like to have received some feedback on Summative Assignment #1, so that I could have identified any areas for improvement and ensured that they were not repeated in Summative Assignment #2.*** Similarly, one student described that ***[a]fter submitting assignment 1, no feedback was given so it was not possible to determine if improvements needed to be made to improve on assignment 2.*** Another student explained that ***[i]t was not clear when feedback will be provided***. These quotations are not irrelevant to previous research reporting a frequent dissatisfaction of students with the feedback they receive (Gibbs & Simpson, 2004; Mulliner & Tucker, 2015). The findings reconfirm that promptness, transparent processes and set timeframes are also critical. Overdue feedback and unclear timeframes are unlikely to contribute to learning through continuous assessment (as discussed in Pillar 4).

In the same vein, students expressed frustration about a course that was assessed with a single summative essay. The essay was due by the end of the module, counting 100% towards the final grade. It seems that relying on a single summative assessment involves a high risk factor in online education. Not to mention that it adds unnecessary stress: ***It was a challenging unit especially because all the marks came from the final assignment.*** Another student said, ***[i]t was a great experience but unfortunately the final grade determines it all'.*** A student mentioned: ***The single summative report was quite a challenge but thankfully I started early so I finish just on time.***

Overall, ongoing feedback is a worthy investment for both students and instructors. It is a deliberate attempt to move from Quality Assurance to Quality Enhancement in a systematic manner. Students will enhance their academic performance whereas instructors will see the cohort's completion and success rates rise. It increases everyone's self-awareness and enables continuous improvement. It is a transformation process where knowledge is generated, shared and retained (also see platform serving as a database for future assessments in Pillar 1). Pillar 6 below explores the specifics of developing online learning material and other resources.

4.7. Pillar 6: resources

It is not too long since books, handouts and assignments used to be boxed and shipped to students around the world. In fact, some Universities are still doing it. This is not surprising of course. Sending learning material by mail has been a set component of teaching via correspondence that dates back to the early 19th century (Bates, 2016). With the introduction of the computer and the Internet nevertheless, posting material via mail vanishes quickly. Resources are now available immediately to students who often use their mobile devices to access course readings, communicate with instructors and fellow students, conduct research and submit assignments. Indicatively, a recent study communicates that in a sample of 1500 online students, two thirds conduct their studies through smartphones and tablets (Schaffhauser, 2018). Similarly, the findings we presented earlier suggest that the majority of students access the online learning platform through smartphones whereas tablets increasingly become less popular (Table 2).

Moreover, the quality and variety of the latest digital resources are remarkable. Publisher resources these days vary from simple electronic textbooks to fully interactive learning platforms, combining audiovisual learning experiences through high quality videos, animations, self-assessment exercises, discussion forums and more. All this is great, until we consider that this type of resource is often

out of reach for many student-markets across the globe. Recent statistics suggest that vast areas of the world have no access to the Internet (Luxton, 2016). In Africa, for example, Internet users are vastly outnumbered by those with unpredictable electricity, no Internet access, or extremely poor connection speeds. In the findings we collected through student surveys, references to these kind of difficulties were widespread. The authors were surprised when students mentioned that for reasons relating to global copyright agreements, the same e-textbook was available in Europe but unavailable in some African and Asian countries. Also, students explained that they often had to travel to neighboring towns with electricity to upload their work on the platform. Some of their responses can be found in Table 2.2. Until these inequalities are addressed by the ever-expanding network as well as the local infrastructure, those expensive and fully interactive learning resources may be deemed as inappropriate for specific parts of the world.

Based on student feedback, to improve student accessibility, e-learning material should be easily downloadable to student devices. Instructional Design should guide the development of courses capable of running asynchronous and off-line (Andriotis, 2016). Although online learning should ideally combine both synchronous and asynchronous instruction (Boettcher, 2011), as indicated in Table 7, some learners are located in villages and small towns with a single point of Internet access. Others are required to walk several miles prior to reaching the nearest point of digital access. Also, as mentioned earlier, the majority of students registered in this post-graduate online program are full-time employees and have to cope with work related issues. A student mentioned: ***[i]t was initially tough to me considering mining work schedules. In fact, I nearly gave up ... time was against me.*** Another student said: ***I am from Nassau Bahamas. As a Naval Officer in my country's military for the past twenty years, I am often stationed onboard a ship where Internet availability varies. I found downloadable material extremely useful.*** Downloadable material means that students are able to visit the nearest Internet point, download their summative assignment briefs, formative exercises and ample course readings on their mobile device and make the most of it at home or while traveling for work. It is also important to have the material broken down into smaller, manageable course files.

In the interest of the learners, another tool to alleviate poor connectivity is the development of 'Topic Overviews' and evasion of bullet presentations. Bullet point presentations appeared after the replacement of chalk and talk methods in physical classrooms (Baker, D'Mello, Rodrigo, & Graesser, 2010). Bullet presentations are deemed to be inappropriate for online learning as bullet points do not speak for themselves (they are much more useful in brick and mortar classrooms). A 'Topic Overview', on the other hand, is a structured analysis that reads like a narrative. It includes the week's learning outcomes, a proper introduction, a main analysis with key components, corporate cases, self-evaluation exercises, and finally, a conclusion and a further reading sections (among others) – all of the included in a light pdf document. It's the kind of material that promotes interaction between the material and the user; it supports story-telling and sense-making through embedded formative tasks. Last but not least, since they are developed internally, a degree of flexibility is embedded, enabling frequent editing to take into consideration the latest trends and changes in each field.

Similarly, video should include transcripts. Online courses that include video and animations are considered to be high value products. Animations, for example, can make complex problems easier to understand (compared to material with just text and images). Poor connectivity, however, makes video material difficult to watch. Transcripts are necessary so that learners read and still make some sense of the missed video (Andriotis, 2016). If the material includes bullet presentations with a small video window on the top right corner and a lecturer presenting, once again, they should include a transcript to compensate those unable to watch. The same applies to video conferences. They can be saved as audio or written transcripts for downloading for all those who are unable to attend synchronous meetings. Overall, offering easily downloadable material and transcripts puts students in control of their learning schedule, which is so much influenced by fluctuations in electricity and Internet provision.

In addition, students expressed appreciation to material presented in a structured manner as well as those courses being accompanied by a detailed study guide. Structuring the processes and material in a way that makes sense, enables learners navigate more easily, save time, and plan their workload in advance. In other words, course structure allows students to always know what they are doing and what needs to be done next (Sumner & Taylor, 1998).

Overall, it is important to understand the mode of learning for which material is developed. A common mistake with universities going online is the assumption that material developed for face-to-face instruction can simply be uploaded on a platform and become available to learners. In reality, however, the material intended for brick and mortar classrooms is likely to result to student isolation. Although the pedagogy may be similar, instructional design intended for online learning should be breaking away from the old, face-to-face mindset. A good point to start is to have snapshots of patterns and utilization of resource by students. Number of hits per database and access to particular resources will reveal what is useful and accessible to students. Patterns change and often some previously popular resources may not be so helpful. Interest to specific journals, databases and forms of resources shift significantly and access is reduced, leaving a university with a wrong investment and students with less learning opportunities.

Table 7
Global students with local difficulties.

We still have electrical power shortage. This is due to the current political instability in the English speaking part of Cameroon which is limiting power maintenance agents from traveling freely and bringing in supplies repair damages in the electrical lines.
I often travel to the neighboring town with electricity to complete my assignment and upload.
Working with (name removed to maintain anonymity) was an absolute pleasure. We made use of wattsapp and email. There were some challenges as both of us had issues with load-shedding (power outages) affecting when we could be online at the same time.
Time management was crucial for me especially that my current job entails a considerable amount of travels to remote places without connectivity within my country.

Source: End-of-course student evaluation surveys.

4.8. Pillar 7: learning analytics

As discussed in the Literature Review, learning analytics have proven to be very helpful in online learning (Mazza & Dimitrova, 2007; Park et al., 2016). Our findings reconfirm that monitoring the wellbeing and progress of students is extremely important in a mode of learning where most participants are located far afield.

Although students were never asked to comment directly on analytics, the survey findings suggest that students highly appreciate the promptings occurring as a result of Learning Analytics. In their responses, many of them thanked their instructors through phrases like 'thanks for checking on me' and 'checking up on my status and condition'. As mentioned earlier, students in some parts of the world are often subject to increased constraints compared to others. Other than their daily commitments at work, their family obligations and study workload, they also struggle with poor Internet connectivity; lack of technology and frequent electricity outages. So, the benefit for the students here is that they were given a chance to communicate a difficult occasion and/or encouraged them to keep pace.

Essentially, analytics provide instructors and administrators with vital learner-produced data in real time. Based on this information, instructors and administrators make connections and produce assumptions prior to feeding them back to the learning process in the form of advice or feedback. For example, analytics helps instructors understand what is happening in online classes: do all students participate in the weekly tasks? How many students submitted the formative work this week? Did a student disappear for a long period (e.g. for more than a fortnight)? Is there an individual in need of extra support? The answers to these questions will help instructors gain insights and enhance future decision making. In the long-term, learning analytics can help refine institutional, operational, and financial decision-making processes (Lawson et al., 2016), as suggested earlier in the literature review.

Learning Analytics, moreover, are not pedagogy neutral. They are designed to enhance daily learning as well as optimise long-term pedagogical objectives (Ferguson, 2012). Performance should be measured against specific metrics that students are aware of, either because it was part of their induction training or because it was made clear to them through different means such as study guides. If, for instance, the required time spent on a particular task online is minimum of 2 h a week, analytics should measure student performance against this quantifiable requirement (for a model on measuring collaborative learning as part of the social constructivism pedagogy see Efthymiou, Zarifis, & Orphanidou, 2020).

4.9. Pillar 8: opportunities for physical presence and internships

Although online learning is usually characterized by lack of physical presence, the survey findings revealed that students would appreciate opportunities of face-to-face interaction. Student conferences and physical social gatherings are great occasions for reinforcing bonding and building a relationship of trust and collegiality. These events support the wider social-constructivism pedagogy model as they facilitate social interaction, re-emphasise the importance of peer work in accumulating knowledge, and reinforce the social underpinnings of the pedagogy model.

The analytics we collected suggest that students from 25 different countries participated in the university's annual student conference. The benefit for students has to do with their opportunity to understand some of the University processes better, meet with colleagues from all over the world, develop their social skills and build stronger relationships with their instructors. The feedback collected during and after the conference reaffirmed how much students appreciate opportunities for physical presence and socialisation. At the same time, it must not be neglected that any physical gatherings and conferences exclude all those who cannot attend. Therefore, if possible, events should be broadcasted live through Internet channels, such as YouTube. Alternatively, events should be recorded and made available to all those who are physically absent.

Lastly, other instances of physical expression are the student internships. Although an online programme is offered virtually, the University's relations with the local employers not only provide students with the right skills (as discussed in Pillar 2), but also help students experience the University's local presence. Interesting articles on engaging employers include those of Bolden, Hirsh, Connor, Petrov, and Duquemin (2010), Kettle (2013) and Wilson (2015). Currently, the process of engaging employers is also supported by innovative online tools that are built on the Learning Platform, offering targeted connections between students and potential employers.

5. Conclusion and future implications

The contribution of this article is threefold. First, it throws light on learners' difficulties in different parts of the world. Second, it invites University decision-makers and instructors to consider those difficulties towards taking deliberate steps for quality enhancement. Third, it benefits the students by facilitating learning inclusion. The article's contribution is encapsulated in a transferable model for online learning in business and management, which is based on students' voice and existing best practices. A visual representation

of the suggested model looks like the one appearing in Chart 1.

The eight-pillar model emerged from a truly global sample, that is, Management students from 154 countries, using current technology and online pedagogy methods. Therefore, the pillars are validated on a global stage. Along with the benefit of the students, the model serves as a good segue into the future implications for several stakeholder groups. Unlike previous models, such as Salmon's 'five stages' (2004), where instructors are responsible for each stage of the online module, our eight-pillar model requires the involvement of a wider range of key groups and decision-makers. Among others, instructors, academic leadership, library staff, as well as students (e.g. how they can give each other feedback), need to be in place for a successful online module. For these key-interest groups, there are practical implications (see Fig. 1).

For example, library decision-makers are asked to consider material availability in different parts of the world; and create bespoke instantly accessible content (as suggested in Pillar 6). For lecturers and instructional designers, the proposed model can be combined with existing models, such as Salmon's (2004) popular model of online delivery in five stages. Such an attempt is illustrated in Fig. 2 below. The combined model shows the lecturer what they should focus on in each of the five stages with the eight pillars being incorporated throughout the module.

Moreover, for University decision-makers: without putting at risk the requirements of quality assurance, local sensitivities should be taken into consideration in the instructional design of global online environments. In other words, going global, which is arguably one of Online Learning's best possibilities, is likely to fail unless Universities evaluate and adapt to some key local considerations for developing and delivering successfully online programmes. Therefore, Higher Education institutions should be in constant consultation with students. It is important to promote student feedback surveys through cultivating a feedback culture and mindset. Students

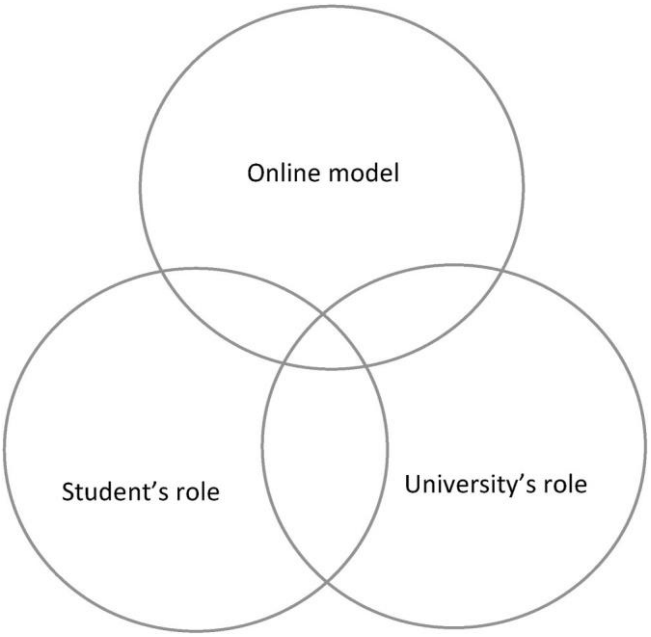

Fig. 1. Venn diagram of the literature.

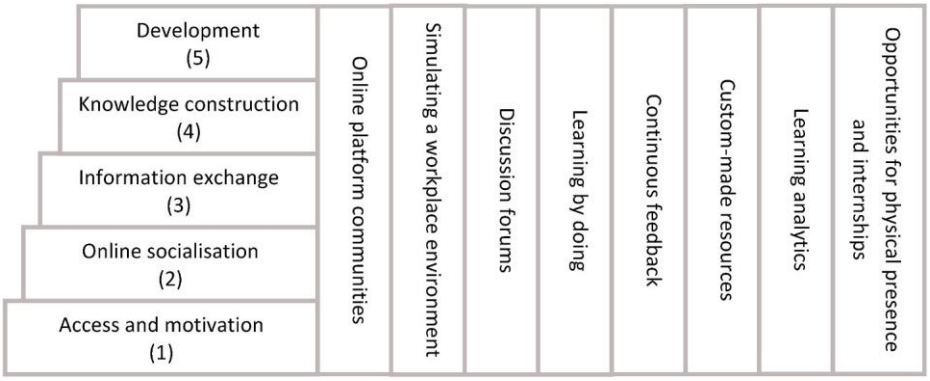

Fig. 2. Model of global online learning combining five stages (Salmon, 2004) and eight pillars.

Chart 1. A visual representation of the 8-pillar online learning model.

should have the opportunity to give teachers feedback on what they have learned so instructors and instructional designers know how learning strategies helped them achieve intended outcomes; and adapt instructional strategizing where necessary. Student feedback is even more critical in online education because of the challenges posed by the distance concerning those involved (Miliam, Voorhees, & Bedard-Voorhees, 2004). Besides, this article would not have been possible without the feedback offered by students at the end of each course.

By the same token, the learning analytics, while only basic, were very beneficial. This is an area where Artificial Intelligence (AI) and automation can contribute (Fu et al., 2020). The findings of this research can be used to increase the use of AI and automation in a way that is in line with the pedagogical goals and does not weaken human relationships. Linking AI and learning analytics, may have a meaningful impact on students' learning outcomes, learning support and teaching – as opposed to typical existing learning analytics (e. g. Viberg et al., 2018).

However, no model is final and no model is static. None of the discussions under each pillar is exhaustive. Also, the pedagogy discussed in the foregoing analysis is not novel. The principles of the pedagogy in the proposed model are not different from some of the methods and best practices used in traditional, face-to-face environments. The origins of some of its supporting literature can be located in the pre-World War II era. What is different, then, is not the pedagogy but the instructional design – that is, the learning strategies and practices, aiming to enhance quality, based on the principles of social constructivism.

Instructional design has a vital role to play in quality enhancement, whereas, students' needs and the wider environment need to be taken into serious consideration. Future research, therefore, should depart from the understanding that each learning model is subject to ever-changing forces, such as changes in technology, infrastructure, learning resources and always in the light of students' and

employers' changing needs. The misconceptions and myths related to the difficulty of teaching and learning online gradually disappear and are replaced by learners' realities – not with a one size fit all product but through quality pedagogical improvements.

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