An analysis of the implications of Maslow's Hierarchy of Needs for networked learning design and delivery

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Abstract - *The Hierarchy of Needs proposed by Abraham Maslow has been adopted by many groups of practitioners as a way to understand their customers and users. It argues that there are universal human needs, namely physiological, security/safety, social, self-esteem/ego and self-actualisation. Maslow contests that unless the former of these are met, the latter cannot be. This paper demonstrates the need for the continual review and modification of teaching and learning plans to meet the changing needs of learners, which in this case relates to considering the impact of networked learning.*

Keywords: Abraham Maslow, hierarchy of needs, education theory, networked learning, learning stratefies

1 Introduction

These The Hierarchy of Needs theory provided by Abraham Maslow [1, 2] has been argued to be one of the simplest ways of understanding human behaviour [3], but in the digital age a greater degree of complexity is needed to understand the place humans in contemporary societies [4]. Maslow's model is a popular motivation theory in social science, but has been criticised as untestable with insufficient empirical evidence [5]. As can be seen from Fig. 1, Maslow's hierarchy is often illustrated in the shape of a pyramid, with the principle that the 'deficit needs' that are most essential to life are at the bottom, and the 'esteem needs,' which he deems least essential are at the top [6].

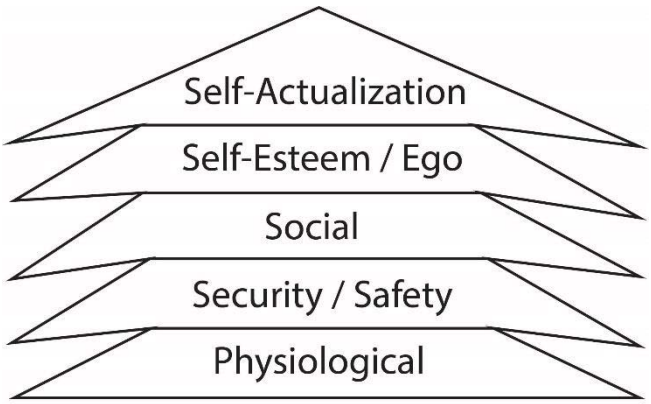

Fig. 1 Maslow's Hierarchy of Needs

It has been said that in online environments that Maslow's hierarchy cannot apply, especially in the case of those with digital addiction, as they will often give up their so-called basic needs to focus on their so-called esteem needs [7]. Equally it has been found that in intense offline environments where people are absent of basic needs, such as concentration camps, the sense of solidarity and compassion between humans associated with the esteem needs is still evident [8].

Even so, with current government policy around the provision of free school meals to improve learning outcomes [9-12] and the drive for greater use of ICTs in education at all levels [13], including where distance learning might be preferred [14], it is clear Maslow's hierarchy deserves another inspection.

Networked learning as a concept that has existed since the 1990s, which refers to new ways of using information systems to influence teaching and learning [15]. A means of enabling e-learning, networked learning makes use of not only knowledge around computer science, but social science also, which jointly put in in the context of information systems and human-computer interaction. The contribution of motivational theories to learning design in such environment has been significant [16, 17]. Indeed, Scholars in this area have said the 'hierarchy of needs,' proposed by Abraham Maslow [1, 2], is suited to the design of information systems because it is "orderly" [18]. Others have said it is suitable for the design of online communities [19, 20], and others still have said it has application in gaming in terms of understanding "clans" [21]. The societal implications of such 'received wisdom' needs to be verified in order to prevent the development of erroneous practice due to misinterpretations in Maslow's hierarchy, including those that have resulted from scholars mixing and matching the original model for their own purposes. It has already been shown prior to the advent of social media that this hierarchy is unsuited to virtual environments [7]. Even though this is almost without doubt, this paper takes another look at Maslow's hierarchy of needs to assess its suitability for design and delivery of learning in networked learning environments, and educational contexts in general.

2 The development of learning theory from psychological traditions

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This section explores the complexities of the psychological foundations of teaching and learning on the basis that Maslow's

hierarchy of needs cannot be considered in isolation of the historical and contemporary psychological developments in the context of practice that existed the time it was formed, nor those contemporary practices that exist today. By critically analysing the relationship between competing psychological perspectives in the context of learning with Maslow's hierarchy, then is role in contemporary learning environments can be defined.

It has been argued that when one thinks about educational psychology in an historical context, one should focus on the scientific and empirical study of education [22]. According to Abraham Maslow himself, new developments in psychology have always generated a revolutionising many theoretical developments in psychology have been later found to have been based on insecure empirical foundations [23], something that will be discussed in this article in relation to Maslow's hierarchy of needs.

Maslow's work is not the only one that has considered the impact of the environment on intrinsic motivations. Gestalt psychology, for instance, is based on the premise that the mind translates external stimuli holistically rather than the sum of their parts [24]. On the other hand, behaviourist psychology suggests the opposite [25, 26]. The battle between Gestalt and behaviourist visions of psychological function and competence marked the early years of 20th century, could be considered to be continuing to do so, albeit in modified ways [27]. Whilst behaviourism has had some traction in the design of networked learning systems [28], it is now known that human understanding of reward systems is much more complex [29].

In the past, it had been argued that the learning processes of insight and intellectual development of humans is best explained with Gestalt theory, with behaviourism being more suited to understanding conditioning, such as in contemporary education and training [30]. However, following on from the gestalt-behaviourist battle was the advent of cognitivism, which attempted to resolve the empirical deficit in these theories [31]. Behaviourism depended on a process of trial and error by the person learning was aimed at, with rewards and punishment following as part of the process, lacking objectivity and systematic reliability [30]. However, many of these ignore the role of human memory studies in the learning process, which find stimuli-response connections are more cognitive than was thought by behaviourist [32].

2.1 Maslow's Hierarchy of needs in comparison with other models

Even though Maslow's hierarchy of needs has been regarded to be an important part of introducing motivational theories into education, with it still being popular today [5, 33], but it has consistently been unsupported by evidence from the research community, with many saying it cannot be put in practice or verified by empirical research [5, 33]. Indeed, even Maslow himself a decade after the first publication of his theory, expressed reservations about the application of it to work motivation and similar contexts [34].

3 Limitations of the Hierarchy of Needs for design and delivery of networked learning

It has been argued that Maslow's Hierarchy of Needs theory can form part of teaching, learning social strategies in diverse occupational settings, including among online community managers [19, 20, 35, 36]. As can be seen from Table 1, Kim has linked essential user requirements in using online communities to the five levels of the Hierarchy of Needs.

Table 1 Kim's linking between Maslow's hierarchy of needs and user requirements

Hierarchical Stage	Manifestations in online environments
Physiological	System access: the ability to maintain one's identity, and participate in a Web community
Security and Safety	Protection from hacking and personal attacks, the sense of having a "level playing field"
Social	Belonging to a community as a whole, and sub-groups within the community
Self-esteem	The ability to contribute to the community, and be recognised for those contributions
Self-actualization	The ability to take on a new community role that develops skills and opens up new opportunities

The advent of social media as a form of mass communication has the opinions of those once in the public sphere controlled by the media, now form part of the 'public square' where they can self-publish [37, 38]. With networked learning concepts like Classroom 2.0 [12, 39-41], the suggestions of Kim in Table 1 seems dated when it comes to devising strategies to promote teaching and learning in online environments.

A weakness of Maslow's hierarchy of needs is that it assumes everyone has the same drivers, meaning it therefore lacks the capacity to take account of individual differences. As has been shown in research on the Classroom 2.0 initiative [12, 39-41] educators and e-learning systems need to demonstrate an awareness of the preferences of learning in the learning situation. Such e-learning systems can take account of the various social contexts in learning environments, including varying intelligences. For instance, it has been shown that e-learning systems can be adapted to take account of attainment levels so that the content delivered is at an appropriate level of challenge [40]. Such approaches can be seen as justified because they allow for each learner to have their individual differences accommodated in a way not provided for in Maslow's model. Learning activities used through Classroom 2.0 can include interacting with learners from other educational establishments, taking part in a class where generic questions are tailored to each person's interests and abilities [40]. If Maslow's model were to be applied here, then it would suggest that a learner would be unable to be motivated away from the

more solitary tasks. However, the intention of the Classroom 2.0 approach to network learning is that the self-esteem generated in the abler learners will result in them helping the less able learners after they have completed their own work. A problem of mixed ability classes has been that the abler speed ahead in group tasks, leaving the less able falling behind. This problem does not exist with Classroom 2.0, as each student has their own terminal, where they can rely on the system to take account of their differences, meaning the abler are occupied and do not take over.

4 Changes to learning and instruction needed in the digital age

The Classroom 2.0 approach to networked learning involves the joining up of each learner's device and provides a custom experience, is not the only contemporary mode of delivering teaching and training that challenge's Maslow's hierarchy. New approaches to learning, using tablet devices like iPads, mean the relevance of Maslow's hierarchy and other traditional theories of motivation is diminishing.

The distinction between what Maslow calls 'physiological' and 'social' is becoming less relevant. Those part of Generation Next are going through school at a time where they are multitasking not by sitting in front of a PC, but by walking and using their smart device at the same time, meaning their physical coordination will be as strong as their capacity to communicate, unlike with earlier generations [42]. The behaviourist and cognitivist approaches to the design of learning and construction of learning plans are therefore irrelevant, and post-cognitivist ones based on accounting for environmental and ecological factors are therefore needed [43]. Maslow on the other hand argues that the environment influences only one's physiology and sense of security. It is in fact the case that the extent to which one feels capable of being social and having a sense of self-esteem is dependent on one's surroundings.

However, it has been argued that even if behaviourist reinforcement theories have been discredited, this does not mean that stimulus-response learning understood through these theories are non-existent [44]. Indeed, even in post-cognitivist models, which represent latest thinking, a stimulus is what a human receives and a response what they produce [17].

4.1 Changes needed to teaching and learning strategies and modes of delivery

It has been established by this paper that Maslow's hierarchy of needs is not suited as a teaching and learning strategy in a range of online contexts, such as networked learning. This section will explore how the benefits sought by those who like Maslow's model for its simplicity [18], can be achieved with a more recent post-cognitivist model design for the digital age, namely ecological cognition [17, 45]. To do this the use of a range of 'e-tivites' [46] will be deployed and evaluated, including their advantages and disadvantages as delivery modes in contrast with those typically used to apply Maslow's hierarchy. Whilst Gilly Salmon says there are 5 levels of providing e-tivities this section will focus on the first, namely 'access and motivation.' The reason for this is that the original basis of Maslow's hierarchy was to understand human motivation. The processes used in Transactional Analysis, namely activities, and the "Learn, Create, Communicate" (LCC) approach to teaching [40, 47, 48], will also be used to show how these occur in specific settings.

4.1.1 Activities for the "Learn" stage

The learn component of the LLC model advocates that acquiring knowledge should be the first stage of taking on a new topic [40, 47, 48]. Relevant e-tivities at this stage are ice-breakers, quizzes, and the 'my brand' activity [46].

"Ice-breakers" are activities for encouraging participation of newcomers to a course, which involves increasing their involvement over two to three weeks [46]. A process known as 'delurking,' these activities encourage users who might be afraid of saying something wrong or not fitting in – called lurkers – to get the confidence to take part [49-51]. Lurking in the context of Transactional Analysis can be seen to be the activity of 'Withdrawal' [52] and delurking is the process of avoiding or reversing such withdrawal. Whilst organisations deploying Maslow's hierarchy use ice-breakers in their training, the model has been criticised for its usefulness in this regard because of how it focuses on the individual existing outside of a group [53]. Ice-breakers are inherently social activities [54], meaning Maslow's model is unsuitable as it assumes being social is not an essential part of learning, but additional.

The "Quiz" form of e-tivity is where learners are asked to tell others about themselves, such as their job and personal interests, and in some cases a prize is awarded for contributions [46]. This is evident in the TA activity of 'rituals,' which is where participants know the socially acceptable things to say and what not to [52]. Quizzes are known to help in learning environments based on Maslow's hierarchy, where they have been used throughout courses to engage difficult to educate groups [55]. Despite the fact that quizzes are usually done on an individual basis, one might question whether the lack of priority of being social in Maslow's model would make learners more goal-driven than they need to be when doing informal quizzes.

The "My brand" e-tivity invites learners to say why they choose certain brands and what it says about them [46]. This reflects the TA activity of 'playing,' because it is about generating ideas as opposed to selecting and excluding robustly [52].

4.1.2 Create

In terms of the 'Create' stage of the LCC model, it is assumed that acquiring knowledge on its own does not mean one shows mastery of the topic, as that knowledge needs to be put into action [40, 47, 48]. To do this online, the e-tivities of 'Images' and Talents' are relevant [46].

With regards to the e-tivities for "Images", it is recommended that learners be invited to share pictures of themselves and their lives by linking to them on the Internet [46]. This is reflected in the TA activity, 'closeness' [52]. The reason for this is that at this stage, learners will have developed sufficient trust to be able to share true feelings and express views candidly [52].

Such 'show and tell' activities are said to promote what Maslow calls 'self-actualisation' as they are meant to help learners develop a psychology of being [56]. It is clear that such activities go beyond one's personal development, showing an appreciation of others also.

An e-tivity called, "Talents," involves learner having an imaginary sum of money and using e-commerce websites to choose the products they would most want, which could be related to the course [46]. This can be seen to be reflected in the TA activity of 'working,' where is where learners participate in order to achieve things together, including reviewing ideas. Maslow's model is not suited to situations where togetherness is a factor [57], with some arguing that it is important at all stages of development, especially in relation to physiological need around, whereas Maslow puts it as an esteem need and therefore not essential [58].

4.2 Communicate

The communicate stage of the LLC model suggests that learning is a social process and that without expressing one's learning it can be difficult to retain it [40, 47, 48]. A number of e-tivities can help with this stage, namely wanderlust and hall of mirrors.

The "Wanderlust" e-tivity involves the educator posting a link to a location relevant to the course and asking learners to post links to other locations that either reflect where they are from or which they think relates to the course in some way [46]. This is reflected in the TA activity of 'pastimes,' as it involves learners discussing things in an informal and more social way, with little reference to the serious elements of the course [52]. In such a context, especially where the course has learners from many cultural backgrounds, it has been argued that Maslow's hierarchy is unsuitable as it only fits one culture of mainly successful White men [59]. Whilst talking about physiological needs might be suitable to those from impoverished backgrounds, to expect others to be forced to fit Maslow's model, would do little to help assist teaching and learning.

The e-tivity named, "Hall of mirrors," involves the educator posting links to five websites reflecting something about the course being taught and invites users to comment on their similarity, why they might use them, which they would be most likely to use, and their emotions using them [46]. This too can be seen to reflect the TA activity of pastime, as learners literally 'pass the time' [52], discussing what they learned on the course in reference to other sources of information. It is argued that by having self-actualisation, humans have a sense of spirituality so that a sense of community is enhanced [60]. However, it is known that learners often have time-pressures, meaning expecting post-class interactions might be unlikely [61].

5 Discussion

This paper has demonstrated comprehension of the need for the continual review and modification of teaching and learning plans to meet the changing needs of learners. This has been done by showing how Maslow's hierarchy of needs is not appropriate in the digital age, where networked learning environments, such as those based on Classroom 2.0, are a core part of teaching and learning.

To assess Maslow's model effectively, its impact on 'e-tivities' (i.e. activities that take part in electronic environments) was discussed, along with how they relate to those activities in Transactional Analysis (TA). This investigation found that Maslow's hierarchy is not suitable as a means to support teaching and learning in networked learning environments, because it puts too much focus on the individual. It was found that time was more of a pressure than deficit needs such as food and safety, and to expect learners to focus on discussing these latter factors during their online learning is not culturally appropriate.

The paper concludes that Maslow's hierarchy 's claim that the drive to be social is a higher one over physiological is not accurate. In networked learning environments social interaction is by far the most important factors that motivates participation, as the evaluation into e-tivities showed.

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