

● Joe Cullen y Cristina Castellanos
London (United Kingdom)

Cloud Cuckoo Land: evidence from a study of student drop-out

Cloud Cuckoo Land: evidencia de un estudio de los estudiantes de deserción

ABSTRACT

This paper considers some of the issues around the migration of higher education services to 'the cloud', selecting MOOCs as an example of one element of service delivery that is being seen as an example of how new forms of distributed services can revolutionise higher education – in particular by opening up access to more people from diverse backgrounds. The paper presents some counter-arguments to this view, and explores whether these new technologies of teaching and learning are able to preserve the integrity of 'reflexive dialogue' that seems to reflect the core value of our higher education institutions. It presents evidence from an EU-funded project – STAY IN – which is researching student drop out and how it can be reduced through on-line services – as a contribution to these debates.

KEYWORDS

Higher education, Social inclusion, Cloud, MOOC, Drop out, Learning, On-line services, Organisation.

SOBRE EL AUTOR/ES

Dr. Joe Cullen. Tavistock Institute of Human Relations, Arcola Research LLP (United Kingdom) (jcullen@arcola-research.co.uk).
Dra. Cristina Castellanos. Tavistock Institute of Human Relations (United Kingdom) (c.castellanos@tavinstitute.org).

1. Introduction

The accelerating pace of the 'cloud campus' bandwagon in recent years has been given impetus by a parallel proliferation of interest in the potential of massive open online courses (MOOCs) to deliver higher education programmes. In a nutshell, MOOCs are 'open classes'. They enable a video recording of a lecture – often given by a renowned academic – to be posted on-line for anyone to look at it and learn from it. This means that, potentially, anyone can have access to higher education content and it means that the number of learners accessing the content is not restricted by class size. The emergence of MOOCs has shifted the focus of cloud computing in higher education from a rather narrow preoccupation with the cloud's potential as a platform for research to a much broader interest in what cloud computing can contribute to objectives like widening access, delivering smart and personalised learning pathways and improving the efficiency and effectiveness of assessment. The research benefits of cloud computing for higher education institutions (HEI) have long been recognised, since the multi-level security functionalities of the different cloud models enable different networks and partnerships to be connected across disciplines and allows these networks and partners to share data and content securely (Watson, 2012). In addition, it is argued, cloud computing offers HEI's the advantages of cost savings, flexibility, access to data and services from any location and replicability of experimentation. Similar arguments are now being advanced to support the widespread use of MOOCs via cloud platforms. MOOCs make it possible to provide education services that can be much more customised and 'user-focused' than traditional 'lecture-based' approaches, with delivery of services at a much lower cost.

For the cloud champions, the compelling argument for migrating HEI services to the cloud, and for the widespread use of MOOCs in higher education can be summed up in one phrase 'open access'. The argument can be broken down into three components. Firstly, the massification of higher education is stated. Since most MOOCs are free, then in principle they make high quality education available to anyone, anywhere. Secondly, there is the benefit of increased accessibility and efficiency in assessment and accreditation. With MOOCs, students can study at a 'low grade' HEI and then take examinations at a 'high grade' HEI, thereby acquiring a certificate from a prestigious university without having to go to all the trouble and expense of attending one. Thirdly, MOOCs offer labour substitution advantages. For many years on-line learning and e-learning have been touted as the answer to the perennial problem HEI's face of increasing their productivity. On-line learning content can act as a substitute for face-to-face learning. But there has always been strong resistance to this idea – not least from students themselves, who feel they are getting a poor financial deal in the transaction. With MOOCs, however, practically anyone can get access to the star academics from the top universities.

2. The value paradox

Not everyone is convinced by these assertions. In a recent article, Peter Scott of the Institute of Education in London posted a persuasive case to support the argument that MOOCs – and beyond them the cloud itself – can be seen as another encroachment by the neo-liberal project into education (1). Scott suggests that MOOCs provide an effective smoke-screen for the real higher education agenda that is going on in the background. This agenda – being carried out in many European states – is aimed at making higher education even more elitist than it already is – by cutting government financial support to universities, by reinforcing the divisions between 'high grade' and 'low grade' institutions through devices like league tables, and by radically increasing fees so that only the better-off can afford a university education. As Scott argues, whilst all this is going on, MOOCs provide a perfect decoy by supplying a cover story about 'bringing higher education to the masses'. The reality is that it doesn't matter if elite higher education networks like the Russell Group or the Coimbra Group toss a few of their star turns up into the cloud. The fact is that these networks still exert rigid control over what matters – the business of certification and credentials. This will remain as restricted as it ever was. Indeed, as noted above, universities like Massachusetts Institute of Technology (MIT) are already using MOOCs as a lure to enlist a wider spectrum of 'middling' students to do a 'low level' course in the cloud and then take their exam with the elite institution.

Another diversion has been the illusion of 'free access'. Although many MOOCs are currently public and

don't cost anything, this situation is not going to last forever. A number of commentators have observed that the business model behind MOOCs and behind the 'cloud campus' is still being worked out. They point out that the 'cost-free' model is routinely used in business to attract early adopters. Once a critical mass of consumers has been established, then the services rapidly become cost-free no longer. There is already some evidence that this is beginning to happen in the case of MOOCs and in the adoption of cloud computing in the higher education sector, as universities begin to look for heavyweight commercial partners to develop their services. (Yuan and Powell, 2013). It is virtually inevitable that MOOCs will incur escalating consumer costs in the near future – whether through direct charging or through bundling with other services such as certification – for the simple reason that they are subject to market forces. The question is how expensive this is likely to be and whether students will buy into the selling proposition of MOOCs allowing access to the *crème de la crème* of higher education.

What evidence there is on the uptake of tools and content services sited in the cloud suggests a pattern of free provision for the general public and early adopters. However, many of these tools and services have subsequently ended up costly when their user base has become large and they became taken for granted. This transition from cost-free to costly has been reflected mainly in the levying of costs for later users or the addition of 'higher end' services to the basic product. In the higher education context, it's possible that free services could continue to be delivered to a large user base in the form of master classes and related documentation, but it is far less likely that HEIs will be able to deliver an 'enriched learning experience' at no cost. Teachers, content developers, researchers, delivery hardware, and all the other human and material elements that together are required to deliver high quality learning experiences still have to be on site, even if it is a digital site.

Another reason why MOOCs are unlikely to remain cost-free for long, apart from the increasing encroachment of the market into education, is the 'cost-value paradox' inherent in open access education. Some commentators have suggested that because most MOOCs are free, there is little motivation to complete an on-line course, since there is no financial penalty for dropping out. This has the effect of undermining both the extrinsic value of MOOCs – since non-completion will lead to non-certification – as well as their intrinsic value, since the zero financial cost of MOOCs render them value-free. Yet this raises complex issues around value attribution. There is plenty of evidence to suggest that whilst on the one hand things that incur no financial cost may be attributed as spiritually or emotionally worthless (Weiner, 1990), on the other hand some individuals manage to reconcile the cognitive dissonance of being given something for free that is nonetheless construed as symbolically highly valuable (Festinger, 1957). This begs the old Aristotelian question of whether 'virtue is its own reward' – whether the act of learning something is intrinsically worth-while no matter what costs, rewards or punishments are associated with the act of learning. There are many studies which suggest that people expecting to receive a reward for completing a task (or for doing it successfully) do not perform as well as those who expect nothing (Kohn, 1993). As Kohn puts it: "In general, the more cognitive sophistication and open-ended thinking that is required for a task, the worse people tend to do when they have been led to perform that task for a reward". In this context, it's possible to think of MOOCs as offering the worst of all worlds. They hand out sophisticated knowledge on a plate without the recipient of that knowledge having to flex their cognitive muscles to engage with it, and at the same time they provide a kind of reward (no financial outlay) for not having to work to acquire that knowledge.

Other conceptual approaches offer additional insights into the attributional relationship between value, price and products. "Knowledge" could be described as a "public good" in economic terms (Stiglitz, 1999). Its consumption does not exhaust its existence. An on-line master class could be downloaded, in theory, by as many students as wanted to access it, so it may be considered as a non-rival good. However, this characteristic could be nuanced in a twofold way. First, the technological constraints, both for suppliers and or consumers, allow a wider or narrower access to the on-line content or services. Is the digital gap even considered when talking about "massive" and "open"? Second, the learning collective experience "in real time" although through digital means is still a rival product. Space and time are contingent and finite, and the reflexive dialogue is not freely replicable. In this context, the MOOC becomes more a common good, assuming that knowledge is non-excludable, that a proper public good (Hess and Ostrom, 2007).

On the other hand, MOOCs as a learning tool may become an excludable public good through direct pricing, as it happens with other content and service tools on the cloud, or through a lack of recognition and certification of learning outcomes, which reduces the value of the learning experience. Thus, if MOOCs may become excludable and competing in the current and future economic context, they may become private goods, reducing the opportunity of access to higher education for people with less income. Another possible development is the introduction of price discrimination in the delivery of higher education. Different experiences of learning in a HEI may be differently priced. Again, this potentially penalises people from poorer backgrounds, driving potential HEI students to the cloud campus, where their learning experience is likely to be less enriched, less rewarding and less effective. In any case, the broader background shows that, like conventional HEI's, the on-line learning world is less likely to be populated by disadvantaged and 'at risk' groups. According to EC statistics (2013) people doing on-line courses in the EU are more likely to come from higher income groups, and they are likely to have had a higher level of formal education, as Figures 1 and 2 show.

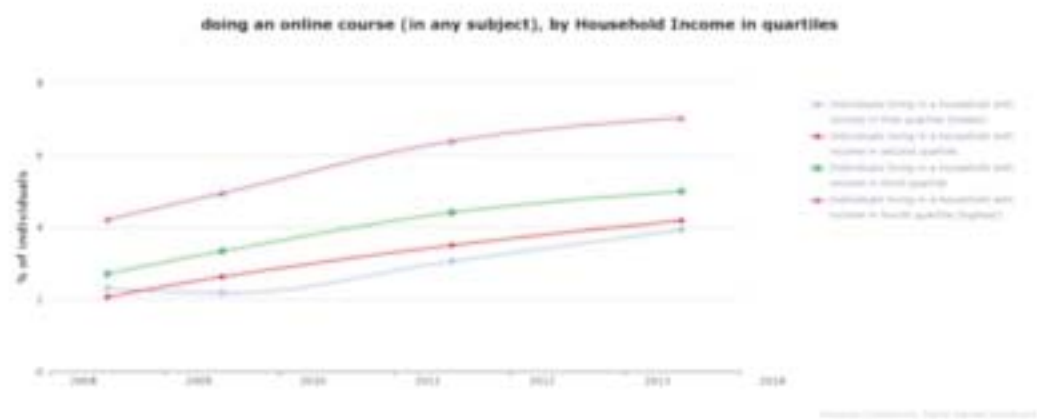


Figure 1: % people doing on-line courses by household income.

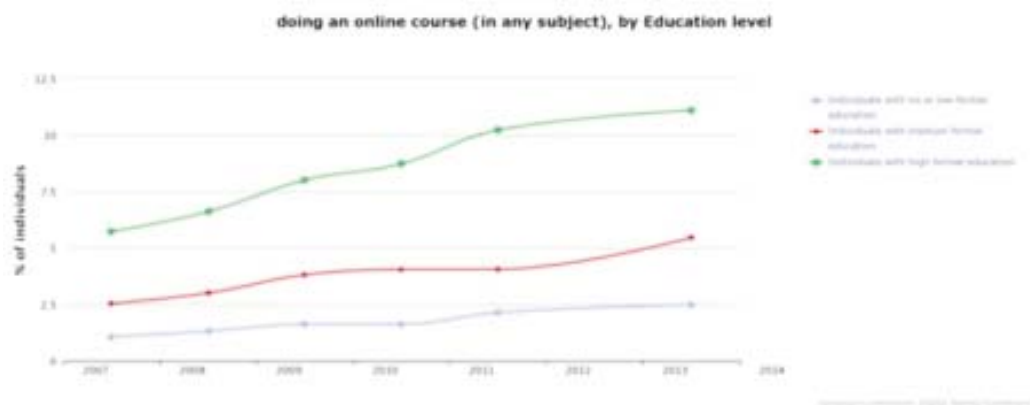


Figure 2: % people doing on-line courses by education level.

Source: European Commission, Digital agenda Scoreboard.

3. Universities as 'defences against anxiety'

Peter Scott suggests that at the heart of this paradox is the 'irreducible uncertainty' of teaching and learning in tertiary education. Scott argues that university teaching has remained 'stubbornly traditional' and has resisted previous attempts to impose radical technical solutions on its organisational and pedagogic practice, preferring instead to adopt minor technology-based modifications to enrich traditional teaching and learning. This, he suggests, is because the best teaching has to be 'communal and reflexive', to allow for 'permanent dialogue'. If this is true, then moving the university to the cloud risks rupturing the reflexive umbilical cord between the university as an institution and its members. In classical systems psychodynamic theory, organisations act as 'defences against anxiety' (Bion, 1961; Miller, 1996). On the surface, organisations appear to function logically and rationally, developing and applying explicit tasks; systems of operation; rules and mechanisms to resolve conflict; strategies to meet challenges and strategies to innovate. Under the surface, organisations also operate in irrational ways. This 'underground' behaviour is often driven by 'unconscious' processes, associated with the loss of boundaries people experience in their transition from child to adulthood. Organisations provide protection against this loss of boundaries. They provide a definition of selfhood – the 'me in relation to the not-me' (Kaplan, 1978). When faced with changes to these organisational defences, members of the organisation often adopt strategies of resistance, and strive to maintain the status quo in order to avoid the new anxieties that accompany change. It's possible to argue that universities exhibit more strongly developed boundary-setting functions than most organisations – for many complex reasons. One reason is that they anchor knowledge in a spatially concentrated framework. Another is that this architectural construction then provides a protected space in which a continuous dialogue of reflexive (Socratic) questioning can be conducted – what Winnicott (1965) would call a 'holding environment'. This protected space is particularly important in view of the core task of universities – to provide a safe and nurturing environment to enable young people to make sense of who they are and what they could become or, as the interactionists would say, to enable young people to learn to understand, interpret and apply the meanings and symbols that allow them to function as social animals (Garfinkel, 2006). Do the migration of the university to the cloud and the widespread adoption of MOOCs compromise this fundamental task?

4. Evidence from research on student drop out

In order to explore these complex issues below are presented some findings from a current project in which the authors are involved. Funded under the EU 'Lifelong Learning Programme', the 'STAY-IN' project is researching the causes and implications of student 'drop-out' and in particular the role that on-line services – especially counselling services – can play in reducing drop-out. Why this is relevant for the debates around the cloud campus and the role of MOOCs is because the research focuses on two central themes: first, the extent to which institutional 'embeddedness' plays a part in contributing to or reducing student drop-out and, secondly, the extent to which students see the migration of higher education services on-line in positive or negative terms.

The STAY-IN project focuses on reducing student drop out in higher education institutions by exploring ways of developing innovative guidance and counselling services including 'e-counselling'. The broader background to the project reviews the factors that contribute to student drop-out from higher education institutions. The overall methodology adopted for the background research is based on a 'Scientific Realist Review' approach (Pawson, et al, 2005). This combines three methods of data collection and analysis: a set of Key Informant Interviews; a Literature Review of theory, research and practice on student drop-out, guidance and counselling, and a Student Survey. The key informant interviews entailed semi-structured interviews with key experts in the field of student drop out and student counselling. The literature review entailed content analysis of 27 key texts in the field. The Student Survey involved a total of 546 students studying at different universities from a wide spectrum of countries, though most were located in Spain, Italy, France and Hungary. The survey included questions on student profile, higher education history, experiences of student life, issues and problems experienced and attitudes towards utilising on-line counselling services.

The research results from STAY IN do reinforce the notion that universities potentially play a pivotal role

in providing a defence against anxieties – particularly in helping new arrivals to manage the turbulence and uncertainty surrounding their transition from the protected cocoon of the home and the community to a situation where their identity is challenged. A number of commentators, for example Giddens (1999), have argued that as the old institutions of industrial society are undermined by globalization, young people must learn to navigate the new 'risk society' for themselves. This has created both uncertainty for young people around what education is for as well as new anxieties for students that need to be addressed as they study. The experts interviewed suggested that school simply does not prepare young people for these risks nor the new challenges they create. The data from the STAY IN student survey bear out these arguments. As Figure 3 shows, a significant proportion of the students sampled present with problems associated with adjusting to a new psychological, social and cultural environment.

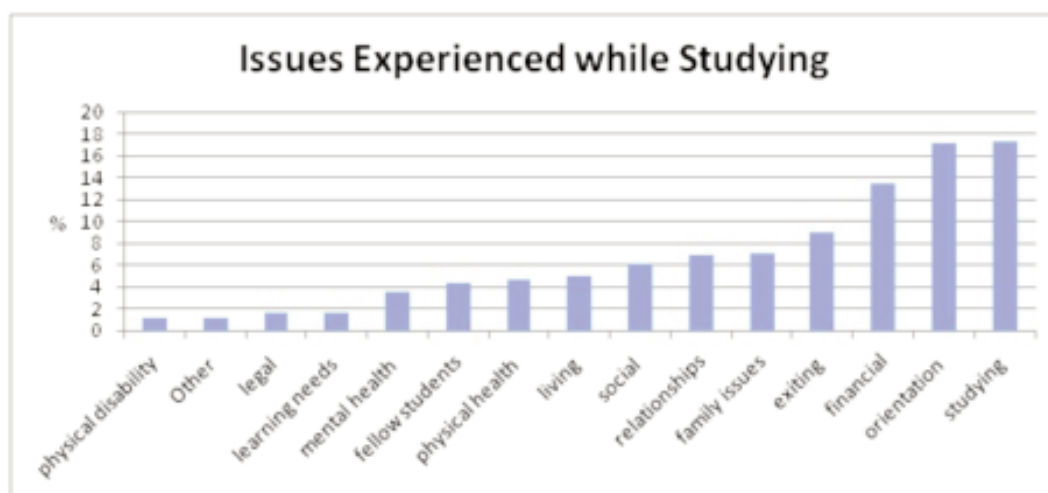


Figure3: Issues reported by students whilst studying. Source: STAY IN Student Survey.

The three biggest problems, in terms of the volume reported by the sample, are problems related to studying (like timetable issues and examination issues) – cited by 17% of the sample – 'orientation' problems (like finding information on where to go on first arrival) – cited by 17% of the sample – and financial issues (for example paying tuition fees and paying for books) – which affected 13% of the sample. Other significant issues cited were issues around 'exiting' study (lack of careers advice, for example); family issues; relationship issues and social problems (for example feeling isolated).

As Figure 4 shows, the students most likely to seek help for a problem are those with a long-term physical disability. Although numerically this is a very small group, over 60% of those who reported a physical disability received help for the problem. Students were more likely to receive help for problems around orientation, mental health issues and studying issues – situations in which around 50% of those who reported problems received help for these problems. Students with 'social' issues, relationship issues and students experiencing problems with fellow students were much less likely to receive help for these problems.



Figure 4: Utilisation of student support services. Source: STAY IN Student Survey.

Against this background, there is in general a big gap between student support needs and support provision. This is particularly the case with support for 'social' issues – for example coping with isolation, and relationship issues (both with fellow students and outside the campus), support for mental health issues; support for specific learning needs. Similarly, with regard to financial issues, specific learning needs and living issues (for example getting accommodation) the level of need appears to significantly outweigh the level of support provided. There is also a gap between the supply of support and perceptions of the utility and usefulness of the support provided. Essentially, across all sectors of counselling and guidance, there is room for improvement in the quality, relevance and effectiveness of support provided - 67% of the survey sample thought services could be improved. This is particularly the case with support for 'social' issues, relationship issues and problems with fellow students.

More significantly, the data suggest that the likelihood of problems experienced, the extent to which these problems are then addressed, and ultimately the likelihood of non-resolved problems leading to disruption in the student study path – including drop-out from University – are related to three key factors: the closeness of fit between the student's cultural background and the university environment they arrive in; the extent to which the university supports emotional and cultural 'embedding', and the level of physical and cultural interaction the student engages in within the institution. Analysis of variance of the survey data suggested that the level of problems experienced by students was statistically correlated with the student socio-cultural and socio-economic profile. Students not studying at an institution in the same country as their country of origin experienced three times more problems than 'indigenous' students. Students from an ethnic minority background experienced twice as many problems than students from non-ethnic backgrounds. Students from working class backgrounds were more likely to experience problems than students from higher status backgrounds.

The survey also suggested that the likelihood of problems arising – and the likelihood of ensuing problems being resolved – are correlated with differences in the culture of the hosting institution. Students who described their institution as 'friendly' and 'supportive', with a high level of peer and tutor interaction were less likely to present with problems and were more likely to report a successful problem resolution after using their university's support services. This suggests that institutions with highly developed 'embedding' structures and systems are likely to be more successful in reducing student drop out. This factor is also linked to the level of physical and cultural interaction the student engages in within the institution. The survey results showed significant dif-

ferences in problem reporting, in problem resolution and in disruption to study progression were reported by students studying off campus, and students studying part-time. This suggests that physical and psychological remoteness is a factor in disrupting study and in disengaging from learning.

The STAY IN survey results are backed up in the literature and in interviews with experts. Analysis of the key research literature consistently shows that primary factors influencing premature departure from a higher education course are the student's sense of belonging and embeddedness in a community – or, conversely, the lack of embeddedness; distance to study – (home-sickness; isolation; being off-campus); socio-economic position – some studies suggest that students from working class backgrounds are more likely to drop out; strength of relationships with students and teachers – a number of studies suggest that institutions that adopt peer and mentoring support programmes have lower rates of drop out. For example, the UK HEFCE Report 'Leaving University Early' observes that the key factor in reducing student drop-out is the extent to which institutions project a clear 'identity' and sense of community that students can buy into and in which they feel a sense of belonging. As a systematic review of what works in student retention carried out by UK by the Higher Education Funding Council and the Paul Hamlyn Foundation concludes: "The key to boosting student retention and success lies not in any specific intervention, but stems from a set of key characteristics, underpinning principles and wider institutional culture, all intended to foster student belonging" (HEFCE, 2012). In relation to practical support to foster this sense of belonging, what emerges from the evidence is a need for student guidance and counselling services to understand that the student experience is not simply an educational matter but a significant 'life journey' that needs to be supported. In the words of one of the experts consulted: "The key need is to help students understand what is relevant for them so that they become adults". This explains why, when questioned in the STAY IN survey about their attitudes to on-line services, the majority of students consulted said that, whilst they considered that the migration of student services on-line could in principle be supported, they saw on-line services as a supplementary add-on to core services that retained the 'human' element. So in relation to student counselling, for example, they said what is needed is the provision of one-to-one counselling from a trained professional, reinforced by peer support, mentoring and buddying and made more efficient through on-line services like automated appointments management.

5. Conclusions

This paper has briefly looked at some of the issues around the migration of higher education services to 'the cloud', selecting MOOCs as an example of one element of service delivery that is increasingly being touted as an example of how new forms of distributed services can revolutionise higher education – in particular by opening up access to more people from diverse backgrounds. The paper presented some counter-arguments to this view, among them the argument that, far from presenting an opportunity for bringing new knowledge to the masses, these new forms of tertiary education provision are likely to contribute to the further colonization of higher education by the market. In this regard, the position where higher education stands now, at its latest technological cross-roads, is not that far removed from the one it occupied a decade ago. As was observed then, what can be discerned in debates about the potential of new technologies is a broader debate about the soul of higher education. In one corner is neo-liberalism, with its fixation with 'performativity' - knowledge being valued for the purpose of optimising of efficient performance of the socio-economic system (Ball, 2000) – and for the contribution it can make to 'governmentality' (Cotoi, 2011). In the other corner is the old adversary of critical enquiry, with its focus on enlightenment and personal transformation. What is central to this debate is whether these new technologies of teaching and learning are able to preserve the integrity of reflexive dialogue, the 'irreducible uncertainty' that seems to reflect the core value of our higher education institutions, or whether, under the cloak of 'learning for the masses', the cloud campus and the MOOC add to the further commodification of learning itself.

Cheaply and easily available knowledge is not the same as the rich and embedded learning experience most HEIs can offer their students. Although MOOCs and the cloud campus could be used as learning tools to support learning processes, they are less likely to revolutionise learning itself. Although the cloud could in principle

engage more learners, these learners are more likely not to complete their learning journey.

Data from the STAY IN project seem to reinforce the notion that worth-while higher education is education that cultivates 'embeddedness' – centering young people within a holding environment that helps them to understand who they are and what they can become. There is little evidence that this fundamental attribute of learning has been sufficiently considered by protagonists of the cloud campus, since the migration of learning to the cloud seems destined to sever the physical, emotional and organisational links that allow a learning institution to perform its primary task as a holding environment. There is equally little evidence to support the assertion that the cloud will lead to a new democratisation of learning. Indeed, the evidence suggests that a more plausible solution to elitism in higher education is to make the 'solid' HEI's more accessible through tangible actions like re-instating educational principles over market principles; subsidising fees for those who can't afford it and exploring new ways of accrediting prior learning (APEL).

(1)The Guardian August 5 2013

References

- Ball, S. (2000) Performativities and fabrications in the education economy: towards the performative society?, *The Australian Educational researcher*, 27(2):1-23
- Bion, W. (1961) *Experiences in Groups*. London: Tavistock.
- Cotoi, C. (2011). Neoliberalism: a Foucauldian Perspective. *International Review of Social Research*, 1: 2 109-124
- European Commission (2013) Commission Staff Working Document: Digital Agenda Scoreboard 2013, SWD(2013) 217 final
- European Commission (2013) Digital Agenda Scoreboard Indicators (on-line database)
- Festinger, L. (1957) *A theory of cognitive dissonance*. Stanford: University Press.
- Garfinkel, H. (2006) *Seeing Sociologically: The Routine Grounds of Social Action*. Boulder, CO: Paradigm Publishers
- Giddens, A. (1999). *Runaway world*. London: Profile Books.
- HEFCE (2012). *Leaving University Early: The final research report from the back on course project 'back on course'*. London: HEFCE; UCAS: Open University
- HEFCE (2012). *What works? Report on the Student Retention and Success programme*. London: HEFCE/Paul Hamlyn Foundation
- Hess, C. and Ostrom, E. (2007). *Understanding Knowledge as a Commons – From Theory to Practice*. Cambridge: Massachusetts Institute of Technology
- Kaplan, L. (1978). *Oneness and Separateness: From Infant to Individual*. New York: Simon & Schuster.
- Kohn, A. (1993) *Punished by rewards: the trouble with gold stars, incentive plans, A's, Praise and other bribes*. Boston: Houghton Mifflin.
- Miller, E. (1993) *From Dependency to Autonomy: Studies in Organization and Change*. London: Free Association Books
- Pawson, R., Greenhalgh T, Harvey G, Walshe K. (2005), *Realist review--a new method of systematic review designed for complex policy interventions*. *J Health Serv Res Policy*. 2005 Jul;10 Suppl 1:21-34.
- Stiglitz, J.E. (1999) *Knowledge as a Global Public Good* in Kaul, I., Grunberg, I. and Stern, M.A. (Eds.) *Global Public Goods*. New York: Oxford University Press.
- Watson, P. (2012) A multi-level security model for partitioning workflows over federated clouds, *Jnl. Cloud Computing Advances, Systems and Applications*, July
- Weiner, B. (1990) *Searching for the roots of applied attribution theory* in Graham, S and Folkes, V (Eds.) *Attribution Theory*. Hillsdale: Erlbaum
- Winnicott, D. (1965) *Maturational Processes and the Facilitating Environment: Studies in the Theory of Emotional Development*. International Universities Press
- Yuan, L. and Powell, S. (2013) MOOCs and Open Education: Implications for Higher Education, <http://publications.cetis.ac.uk/2013/667>

Cómo citar este artículo / How to cite this paper

Cullen, J. & Castellanos, C. (2014). Cloud Cuckoo Land: evidencia de un estudio de los estudiantes de deserción. *Campus virtuales*, 3(1), 22-30.

Cullen, J. & Castellanos, C. (2014). Cloud Cuckoo Land: evidence from a study of student drop-out. *Campus virtuales*, 3(1), 22-30.