

The background features three blue 3D spheres of varying sizes. Two thin blue diagonal lines cross the page. One line starts from the top left and passes behind the top two spheres. The other line starts from the top right and passes behind the bottom sphere.

Trends in eLearning

Annotated Bibliography

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This article explores several virtual digital assistant, which are Nina – Siri – Lexee – Sophia, telephone applications. They are voice activated systems via telephone and can be used to book flights, make hotel reservations, retrieve bank balance, produce sales report and then be instructed to take notes via speech recognition or connect a telephone call to a sales person. In the article Kate Leggett, Forrester Research senior analyst, is quoted saying that speech recognition is a hard nut crack. It details how accents, variation in speech patterns and background noise increase the chance of humorous mistakes. At present all understand English in various accents, UK – US – Australian, and the race is on to develop in Spanish and Japanese versions. Industries that are using or have expressed an interest are banking, financial, travel, insurance and business consulting.

The advantages to the organisation include a more personal interaction for the customer without having to navigate a complex telephone menu system, i.e. press 1 for X press 2 for Y. Advantages to the customer is that they do not have to read text on small screens, do not have use small keyboards, have a hands off experience and can complete tasks while stuck in traffic.

This article reminded me of Bajarin's (2014) article called 'Tech Finds Its Voice: The Future of Virtual Assistants' where it proposes that smartphones in the future will not only respond to our requests but will make decisions based on information provided. For example, in the above article the assistant will book flights but no hotel if not instructed. Bajarin's article proposes that in the future the digital assistant will recognise accommodation is needed and suggest hotels based on previous criteria. This will take digital assistants to the next level.

The time where a digital assistant can replace an actual real person is a long time away in my opinion but there are proven merits already with digital assistants. I had a recent experience with my energy supplier, Electric Ireland, where I was asked to speak at intervals to assist the system to navigate my call to the correct operator, i.e. is it say gas or electricity you are enquiring about. This was better than the press 1 for electricity, press 2 for gas in my experience.

This article details how smart phone are not really that smart. They process data we give them OK but they do not make decisions based on it, for example they are smart enough to give driving direction if a location is input in to your calendar but if you are driving around lunch time a truly smart phone would suggest places to eat en-route.

This article also states that technology in the future will have a brain and also a voice. It would attract your attention by speaking to you and giving suggestions verbally, for instance when driving, to allow you to make a decision.

I believe there is merit in the argument that at the moment smartphones are not that smart. However in time they will progress to being able to process certain information and make suggestions as the one quoted above from the article where the phone will decide I need to stop for

lunch between meetings as it already is aware of what time I eat lunch and will make recommendations.

Barber M., Donnelly K., Rizvi S. (2013), An avalanche is coming: Higher education and the revolution ahead, http://www.ippr.org/images/media/files/publication/2013/04/avalanche-is-coming_Mar2013_10432.pdf

What I got out of the article was as follows:

Globalisation and Technology is fuelling change

The ubiquity of data, proliferation of the internet and mobile connectivity are making the world an increasingly smaller place. Anyone can search for a course online, see the content and even see what current or past students thought of the course. The more information there is in the market place the tougher the competition.

Students are no longer geographically bound either, they can weigh up the merits of Universities all over the world and may choose one on a different continent. There may be political barriers such as visa and work permit, however the internet also provides a great deal of information on how to overcome these barriers as well.

High Education is failing students and the labour market

The article proposes that third level education is failing both students and the labour as it does not give them the desired skill set to function in the workplace. Employers find it hard to fill entry level or menial jobs at times of high unemployment, conversely graduate find it hard to get employment. I believe that if someone goes studies for four years and obtains a degree that they will look for employment above entry level as their degree should give them a boost up the ladder. Not a lot of graduates, in my opinion, would be willing to start at the bottom and work their way up, however this is how it should happen.

Curricula needs to be changed so that graduates are ready for the employment market. There will always be the elite few who will be able to dictate terms and conditions from an employer but the majority will need to take what is available. As little as 10 years ago a degree was prestigious, however today it is seen as the norm and is required as a starting point. Third level institution may need to tailor their courses so that students get real life experiences while studying to prepare them for the labour market. It should be emphasised that started at the bottom and working up allows them to see the structure of an organisation from the roots up. When they get in the door they will be able to show their value to the organisations and graduates will probably rise up the corporate ladder quicker than those who do not have a third level qualification.

Students are combining work with study

The traditional model of leaving second level education, going to college for four years and then entering the labour market is being challenged. Students are getting older and combining work with studies. Students on three or four year programmes are increasingly working while studying so they can afford college. Others are taking up full time employment and returning to education as a

mature student. As students work they gain additional life experiences that will reflect in their college experience and will be able to bring more value to their learning.

As a mature student I believe that this is correct. I left school at 16 and went to work. In my current job there was a need for a third level qualification if I was to be promoted so I returned to education as a mature student. It is a difficult balancing act of work, family and study but I am enjoying the experience. I believe I have made significant contribution to discussions and receive invaluable information from the course and other students, these experiences are drawn from real life examples.

I do not believe the three/four year model is under threat as 18 year old school leavers are expected to go to college and get a degree before entering the labour market. However more flexible undergraduate and post graduate are required for the mature student to study while also working. MOOC could play an important role in this, however the campus experience is also very valuable.

Some students are skipping college altogether

As stated above I do not believe the three/four model of third level education is under threat. However the elite of the student population are being skimmed off before they even go to University. Fellowships, such as Thiel and [E]nterprise as mentioned in the article, are giving the brightest school leavers the opportunity to work in environments where they have access to mentors, finance and learn from the experiences of others. Some companies offer internships, accelerated programmes or apprenticeships allowing someone to work from the bottom up. Entrepreneur programmes allow an individual to set up their own companies by providing seed capital. The philosophy is that even if they fail they will have gained a valuable life experience not available on a college campus.

Access to this type of learning allows school leavers to earn while they learn, gain relevant experience and build a network of professional contacts. The Department of Social Protection introduced a scheme in 2011 called JobBridge to allow companies to employ Job Seekers as interns. Entrepreneurships in my opinion are very important as that style of person would probably not settle into college life, they are always striving for the next big thing. Famous entrepreneurs that did not go to or finish college include Steve Jobs (Apple), Mark Zuckerberg (Facebook), Bill Gates (Microsoft), Michael Dell (Dell Computers), Richard Branson (Virgin) and Simon Cowell (Television). These would be self started, get up and go types who are always questioned why things are done.

Content and information is ubiquitous on the internet

As information becomes more freely available over the internet Universities have to adapt to suit it. Once only big universities had the finance and the physical resources to hold large amounts of data, normally written in books, papers and journals. These were large buildings with well organised sections with shelf after shelf of literature. However with the internet that structure can be replicated digitally and stored on computer hard drives that can be recalled when needed. As the demand for information increases then more and more providers will be available online.

When I started my degree course in 2006 I would have relied on the library to search books and journals, even online, for the information. However as the University library now has access to so many online journals and electronic books I can sit anywhere on my laptop and get the information I require. I still use the library as a quiet place to escape the demands of everyday life though.

Value of a degree is falling

As stated above the norm today is that school leaver must go to college and get a degree before they join the work force. In the article the authors argue that due to this type situation the value of a degree is decreasing generally. There will always be extra value for studying at certain colleges such as Harvard, MIT (Massachusetts Institute of Technology) or Oxford. This also has a knock on effect in post graduate education as well, for example someone with a degree today may want to do a Masters so they are a step ahead of the posse. However this means that more people are graduating with a Post Graduate qualification devaluing that level also.

When I was in school, many years ago!!, anyone that went to University and got a degree was really intelligent, very few actually managed it. However today it is expected student acquire a third level qualification. I agree with the authors that the value of a degree has decreased in recent times.

Incumbents will always have the power

The articles states that the incumbents have advantages - not least endowments, famous alumni and active alumni committed to ensuring that their alma mater's reputation. The regulatory regimes in many countries still reflect the model of the traditional university and are stacked in favour of incumbents and against newcomers. A degree from Harvard, Oxford, Cambridge or MIT have influence in themselves and this can not be replicated.

However new Universities bucking the tradition trends of large student body, large well regarded faculty and bigger buildings are getting a foot hold. The results of these changes are improved quality, increased student numbers and lower cost. As the article states historically in any market, competitors who achieve these outcomes soon overcome complacent incumbents.

I believe that if the incumbents do not embrace the changes brought about by the digital revolution they will loose ground. Evidence is showing that larger Universities are changing, for example the provision of MOOCs is growing with Udacity, Coursera and edX all being affiliated to large universities. The UK Open University is also changings it business model to survive. It is my believe that the incumbents have rode the waves of change on many occation and have survived for so long because they can adapt to change.

Five models for the future

The article states that to survive institution will have to change to one of the following models:

1. Elite

Set up for the elite students and offer incentive for them to join. Currently Harvard, Oxford, Cambridge and Stanford.

2. Mass

Turn out courses for 1000's of students to keep the cost down.

3. Niche (include research)

Find a niche market, such as financial, engineering, law or research and only offer those courses.

4. Local

The prosperity of town can be enhanced with a good university so working closely with local civic leaders could be beneficial.

5. Life long learning

Keep a database of who has learnt what and recall at anytime. This model is not geographically tied so can be moved around as required.

Carr N. (2008), Is Google Making us Stupid?, Atlantic Magazine, July-August, Vol. 302 Issue 1, p56-63.

The title of this article is thought provoking, when I initially read it I thought NO. As far as I can read the author is arguing that with the internet, not just Google, so readily available to use on computers and mobile devices we do not have to think for ourselves anymore. If we need an answer to a question, given the ubiquity of the internet, we just pick up our smart phone, tablet or log on to a laptop/PC and Google the question. As little as 10 years ago we may have had to spend days or weeks researching in libraries; now we can find the information in a matter of seconds. I would agree with his assertion that the internet has altered our mental habits; he has noticed it in himself and his friends have also noticed it in themselves.

It reminded me of Blooms Taxonomy and the lower tiers where we just need to recall knowledge and do not have to comprehend or synthesise the information. However we still need to analyse and evaluate the data returned to ensure it is what we are looking for.

I personally always found it difficult to sit down and read books or articles from cover to cover but the author recalls this is how he researched in the past. Reading the pieces more than once to ensure he fully understood the text and the arguments. However in recent times he states he now just skims them or power browses to see what is contained. He regularly hops from one source to another printing, but not necessarily reading, different articles. He described himself once like a deep sea diver searching the ocean of information; whereas now he feels like he is jet-skiing across the surface.

I don't agree with the author that the internet is reprogramming our brains but believe that our brains and minds are adapting to a new way of storing, presenting and retrieving information that is the internet. Yes our brains can be likened to a processing unit in a computer but the computer is mimicking the brain not the other way around. We are required to analyse and evaluate the information as the scatter of information can diffuse our concentration.

I found the reference to Fredrick Winslow Taylor very exciting, I studied Taylorism (or the Science of Management) as part of my primary degree in Human Resource. Taylor looked at the operations carried out by working in a Seattle steel factory to see why one worker was more productive than another. He found that if a simple process was instigated and each worker used the same tools for the task at hand they would perform better. In the article the author states that Google is breaking down our thought processes and giving us the tools to find information stating that what Taylor did for the hand Google is doing for the mind, I think this is a good analogy. Google does this by examining the crumbs of data we leave in the wake of our online activity.

I found the reference to Plato's Phaedrus interesting where it states Socrates feared that with the invention of the written word it would substitute knowledge in peoples head and they would become forgetful. Different developments over time, such as development of the printing press and television, has caused debates about intellectual laziness and weakening of the mind. I believe that with every new medium to transmit information we need to learn how to use it store and recall information. We do not need to rely on storing the information in individual's heads that only they can recall. The information can be stored, and backed up, electronically and accessed as required. This can be done on both an individual or organisational level.

Kaplan, R. (2013). Beyond the GUI: It's Time for a Conversational User Interface. WIRED.

In this article the author highlights how the Graphical User Interface (GUI) revolutionised personal computing. However it has become so complex trying to display too much information, this coupled with smaller screen sizes of mobile devices is causing serious problems. It is time for the Conversational User Interface (CUI) i.e. for users to converse with their devices to get the result they seek.

These devices will not just react to direct commands but will have artificial intelligence supplied by contextual awareness and perceptive listening. With contextual awareness the device will not only know what words we are speaking but judge what other words are used in conjunction with each other. Perceptive listening will always be listening for our specific voice patterns and awaken when it hears them, probably with a command word.

The writers of Star trek – 'The Next Generation' use a CUI for interaction between the human crew and the computer. When Captain Picard requires a hot beverage he orders tea – earl grey – hot, however the CUI of the future will know that if a he said tea please the machine would know he likes earl grey hot.

The first generation of assistants are in common use but only react in a pre-programmed manner to prompts and do not think for themselves. Aquino (2012) and Bajarin (2014) articles go into some detail about different applications and how they will not only respond but think for themselves.

I believe that we are a long way off CUI as there are many language problems to overcome. Not only is English dependant on the country you live but also the part of that country, Donegal accents differ greatly from Dublin, Galway, Kerry or Cork accents. Current speech recognition device require a lot of training, where the user sits down for at least an hour to train the device to their specific voice. This would not be practical on a large commercial basis unless they store individuals' speech patterns as part of a biometric database, but that is a whole new dimension.

Martin, S., Diaz, G., Sancristobal, E., Gil, R., Castro, M., & Peire, J. (2011). New technology trends in education: Seven years of forecasts and convergence. Computers & Education, 57(3), P1893-1906.

This article looks at the trends identified over a 10 year period in seven Horizon reports on technology. See Post on 2014 Horizon Report for Higher Education for details about the report.

The trends identified over the 10 year period were not always accurate but were not far off the mark. Some cases they were spot on and others they were not in the ball park but generally they were good.

The main categories identified were:

- Social Web
- Semantic Web
- Learning Object
- Augmented reality
- Immersive Environments
- Ubiquity of mobile devices

The only one of the above they were not correct about was augmented reality, which has morphed recently into quantified self, in my opinion, in the Higher Education Report. the above topics are broad and have been split into more measurable groups over the years and continue to take shape.

I believe that the article highlights the importance of mobile devices as a new catalyst for these technologies. If we were still stuck to desktop PC that required a wire connection I do not believe that the same penetration would have happened.

NMC Horizon Report: 2014 Higher Education Edition , Johnson, L., Adams Becker, S., Estrada, V., Freeman, A. (2014, Austin, Texas: The New Media Consortium.

The Horizon Report is an internationally recognised report that identifies and describes emerging technologies. The research is done online amongst a panel of 53 experts in many fields including education and technology.

This report identifies key trends, significant challenges and important developments for technology in Higher Education. In the trends category it lists key drivers that will effect change in the next one to two year, three to five years and five or more years. In the significant challenges category it lists challenges that are solvable, difficult and wicked i.e. need a lot of work. The important developments look at the time-to-adoption horizon and which technologies will be adopted in the next one to two year, three to five years and five or more years. There is a significant amount of information in this report and due to word count restriction I will only look at Virtual Assistants as I have based my three minute video project on this area.

Virtual [Digital] Assistants are voice or gesture recognising tools that help users to interact with technology hands free. The devices need to employ a certain level of artificial intelligence to allow interaction. Devices are increasing including speech recognition tools that activate functions, such as Apple's SIRI – Android's JellyBean – Google Now, allowing users to leverage a conversational interface. These applications use a voice controlled widgets that track users suggestions over time and can tailor recommendations based on them, such as mapping request that will avoid tolls if that is the normal. Several other systems are analysed in an article published in Information Today (Aquino, 2012).

The artificial intelligence argument is linked to an article that states it will only be truly intelligent what it can not merely respond to request but can also make decisions (Bajarin, 2014). The example used was when two calendar events are entered for meetings that the device knows the time in-between straddles lunch time and suggests suitable venues en route between the two locations.

I believe that for the digital assistant to be able to replace the real life Virtual Assistant it will require a lot of technological advancements and believe it will be significant more than five years. However the Gartner Hype Cycle for emergent technologies for 2014 states Virtual Assistants will take between two to five years to plateau which concurs with this report.

I have a smartphone but do not use these features. However I also have an XBOX with the Kinects sensor which allows both voice and gesture recognition to perform functions such as navigating menus and even playing games. I was interested in the reference to Microsoft's Richard Rashid demonstration of an interface that not only recognises his speech and converts to text but then translates that into Mandarin Chinese. Both the translation system and the XBOX system are built on Microsoft connect platform.

Wayne T. (2014), The 7-Day Digital Diet,
http://www.nytimes.com/2014/02/09/fashion/digital-detox-email-smartphone-social-media.html?_r=0, *The New York Times, Published FEB. 7 2014, accessed 15 February 2014*

In class discussed on 11 February 2014 Kevin refereed to this article in the New York Times. It was about a journalist who restricted his use of technology, referring to the disconnection model, for a week and I thought it would be interesting.

the author details how he restricted his use of technology for emails, internet browsing, social media and video streaming, although he would not categorise himself as technology dependant. He detailed many examples of others that have had a similar experience. A stress management expert claimed stress comes from managing the future and she set up a retreat for retiring executive to help them plan for now to reduce the stress. A quote by a musician rang true with me "Our generation may be great at getting in touch with the audience, but we're not great at creating the material for the audience" Ho Bynum (2011). To me he is saying is is easy to reach a lot of people and there are those that just put anything out there. n the training field we need to conscious we are providing the right content for the audience.

Another interesting point is he quotes Clay Shirky, a professor in journalism, as saying multitasking is cognitively damaging. We all strive to try and do multiple jobs at once usually end up failing most, in my opinion the best work is done when focus is given to one task. So I would have to agree that multitasking is counter productive most of the time but I did not realise it could be damaging, I will need to examine this further in the literature.

In the author experience he finds himself going back to read longer news articles and book when there is no, or threat of, distractions. This reminded me of Nicholas Carr's 2008 article "Is Google making us Stupid?". Carr argues that our reading patterns are changing and Wayne experience support this is so far as after he started the Digital Diet he went back to deeper reading.

References

Aquino, J. (2012). Virtual Assistants Enter the Enterprise. Information Today Inc, 16, 30-33.

Bajarin, B. (2014). Tech Finds Its Voice: The Future of Virtual Assistants. Time.com.

Carr N. (2008), Is Google Making us Stupid?, Atlantic Magazine, July-August, Vol. 302 Issue 1, p56-63

Ho Bynum (2011), Technological Austerity Manifesto, <http://taylorhobynum.com/technological-austerity-manifesto/>