# Copernicus Revisited



<u>The Copernican principle and the transformational power of ideas</u>

Nicolaus Copernicus lived 1473-1543.  He was a reluctant innovator.  Copernicus changed the way that the world was viewed, challenged dominant beliefs and opened opportunities for the development of new ideas.  Our world view is now Copernican, but it was not always thus.  That which appears obvious is only obvious when viewed from the correct perspective. It may, for example, take a shift in thinking to drive new developments and to properly realise the benefits of learner mobility.

In his work "On the revolutions of the celestial spheres" (1543), Copernicus made an 'incredible' observation (Assumption 3).  This was a consequence of years of detailed research into the movement of planets and the inevitable conclusion "…therefore the sun is at the centre of the universe" was revolutionary.

This idea was not just controversial, it was downright dangerous.  Copernicus' conclusion challenged orthodoxy & scripture and to do so 500 years ago was to challenge authority, both spiritual and temporal.  So afraid was Copernicus of the implications of his findings that he delayed publication of 'On the revolutions of celestial spheres' until after his death.  As his ideas took hold so the Vatican took action to suppress the 'heresy' which contradicted much of their teaching.  Galileo was one such early adherent to be imprisoned for "following the position of Copernicus".

The problem for the authorities (which was also the tipping point into the enlightenment and subsequent industrial revolution) was that the Copernican idea changed the way in which everything was viewed; it literally inspired a wholly different world view. Thus ideas can have a transformational power.  We could usefully invoke the spirit of Copernicus in 'redefining the digital educational data ecosystem'.

Re-defining the digital educational data ecosystem

So how best to apply the Copernican principle to learner mobility and the frameworks within which they function?  What do we 'observe' in relation to learner mobility?  Significant growth:
- UNESCO reported 2.5m 'mobile learners' in 2009
- OECD reported 3.7m 'mobile learners' in 2011
- UNESCO estimate 7m 'mobile learners' by 2020

The 'educational ecosystem' in which this learning is undertaken is increasingly reliant upon and facilitated by digital technologies.  But is 'digitising' enough?  Learner mobility requires a combination of flexibility and rigour.  Underpinning the movement of learners is the need for a reliable, verifiable and authoritative source of information about their attainments and qualifications.  Such information may be articulated within an array of documents.

Handled badly (inefficiently, inappropriately) the reliance on credentials may appear as a barrier to learner mobility.  Mobility needs to be planned (therefore based on solid foundations) also flexible (therefore responsive and replicable in different contexts).  Handled well, the verifiable and secure presentation of credentials can facilitate and energise the digital educational ecosystem.

Daniel Defoe in 1724 wrote of 'cottage industries':
*"The spinning work is performed by the poor people who live in villages and scattered houses. The clothiers, who generally live in the towns, send out the wool weekly to the spinners. At the same time, the clothiers' servants and horses bring back the yarn that they the spinners have spun and finished"*

Inconsistent, localised, small, inefficient, unsuitable… does this describe our existing infrastructure for the management of credentials?  It appears unlikely that current (let alone future) demand for the verification of credentials to support learner mobility can be sustained with the existing infrastructure.  In the global village a new approach is required to the removal of barriers via new technology and philosophy of digital learner data.  In Copernican terms this new approach will challenge long-held views about the purposes and possession of 'credentials', but will also provide opportunities facilitated by technological solutions suitable for the digital age.


Toward a new paradigm?

In which processes are adapted to utilise available data. Institutions are custodians of data and provide authentication in respect of learner achievement. The learner is the owner of their data, in control of access to that data by third parties and empowered by technology with discretion to determine access.  Credentials in the form of documents are not the 'sole property' of institutions, but are shared between the institution (controlling data) and the learner (controlling access).  The issuing authority is no longer at the centre of their universe; the student is.

For this model to work we need to change the way that we think about credentials, from static paper-based repositories to dynamic, digital data.  Such information has long been static, but in the longer-term view of learner mobility such mechanisms fall short of what is required.  So do mobile learners need mobile data?  No.  The principle of mobile data is that it is moved, taken, transported.  Thus static data become mobile without ever changing their nature.  What is required to redefine the digital educational data ecosystem is ubiquitous data portraying secure and verifiable learner credentials.  Forget static or mobile credentials, these data are everywhere.  But how to make this a reality?

DARE

The UK Higher Education Funding Council sponsored a number of initiatives to promote cloud-based services for UK education and research via a Universities Modernisation Fund. This allowed a consortium of universities and a commercial partner to develop and implement the Digital Academic Record Exchange (DARE) project and resulting service. DARE enables institutions to electronically certify, deliver and authenticate academic records. The service is governed by a Service Advisory Board comprising a number of UK HE institutions and sector stakeholders. It is a highly secure, resilient, environmentally friendly service that releases administrative staff to focus on higher value tasks, thereby helping institutions to meet the demands of the ever changing administrative landscape.

We feel that Copernicus would approve.

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For further information see: http://www.digitary.net/dare