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Abstract: Higher education (HE) in Scotland has some very specific characteristics: a relatively small number of HE institutions (HEIs), nineteen at the time of writing; a strong college sector, which makes a significant contribution to the provision of HE; an all through credit and qualifications framework, designed to support transitions between different parts of the education system and through the lifecourse; no fees for full-time HE and more than fifteen years of policy initiatives aimed at (WP). Despite all this, unequal access between different socio-economic groups has remained stubbornly persistent. Moreover, the numbers of mature and part-time students in both the university and college sectors have declined. This paper looks at some of the evidence from the Opening Educational Practices in Scotland project, which is exploring the interface between open education and WP. In the context of the widespread availability of digital devices and the rapid increase in free, open online resources, are there new strategies to promote WP and lifelong learning?

Key terms: widening participation; lifelong learning; open educational resources; OERs; open educational practices; (OEPs); non-traditional learners; free online resources; collaboration; higher education.

Introduction and background

The rapid increase in the availability of good quality, free online educational resources (OER) is often heralded as the beginning of a new era of opportunity in which traditional boundaries to participation are reduced or eliminated (D'Antoni, 2013; Welsh Government, 2014). However, in the Scottish, UK and European context there is relatively little evidence to support these claims (Falconer et al, 2013). The availability of OER is part of an emerging movement that the Cape Town Open Education Declaration (2007) describes as combining

> '… the established tradition of sharing good ideas with fellow educators and the collaborative, interactive culture of the Internet. It is built on the belief that everyone should have the freedom to use, customize, improve and redistribute educational resources without constraint. Educators, learners and others who share this belief are gathering together as part of a worldwide effort to make education both more accessible and more effective.'

D'Antoni (2009) discusses the origins of the open education movement and the impetus given to it by the launch in 2002 of MIT's Open Courseware initiative. She also notes the importance of the OECD report on OER (2007: 11), which highlights the potential of OER to widen participation in HE through reaching non-traditional learners, promote lifelong learning and bridge the gap between formal, informal and non-formal learning. As the OER movement has developed different emphases have emerged. In the global south and in the USA there has been considerable effort invested in the development of open textbooks as a means to widen participation (Garcia et al, 2013); in the UK, however, attention has tended to focus on learning objects (Koppi et al, 2005) and the development of repositories for OER such as Jorum and OpenLearn[1]. Around the world the advent of Massive Open Online Courses (MOOCS) (Yuan and Powell, 2013) has further influenced the ways in which the affordances of open education are understood and put into practice.

Explicit links between open education issues and WP have been relatively rare (Lane, 2013). However, there are some indications that this may be changing, and in this paper we explore some examples of developing practice in Scotland that suggest that a reorientation on 'open practice' that brings the worlds of open education and WP closer together, may enable more effective use of OER.

We draw on experience of Open University in Scotland (OUiS) WP partnerships that span more than a decade, and on some of the early findings from the Opening Educational Practices in Scotland (OEPS) project[2]. These two strands share common roots in a set of specific circumstances: firstly a policy and funding framework that encouraged the OUiS to develop a partnership-based approach to WP practice (Cannell and Hewitt, 2010a); and secondly the Open University's commitment to the development of OER since 2007 (McAndrew et al, 2009).

OEPS is an open education project that has an emphasis on adult learners and a remit to focus on WP, transitions and partnership. It also aims to increase the capacity of the Scottish HE sector to develop and utilise high quality OER. The explicit link between OER and WP draws on OUiS practice and is currently distinctive in Scottish HE. Five Scottish HE institutions (HEIs) are involved in MOOC production and some of this activity has an interest in widening the reach of HE. For example Edinburgh University have worked with Unite the Union to engage union members in learning through their football MOOC (Macleod et al, 2015). However, there is less activity in the sphere of OER and the use of OER courses in WP partnerships is unique to the OUiS. OER courses developed by the OUiS such as *The Reflection Toolkit*, *Caring Counts: a self-reflection*

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[1] www.open.edu/openlearn/
[2] www.oepscotland.org

and planning course for carers and *Foundations of Self Directed Support* have achieved significant reach, with users numbered in the thousands. The OEPS project aims to reach similar levels of participation across a much broader range of learning opportunities and to increase the number of HEIs engaged with OER. Currently OEPS is working with a wide range of partners including universities, colleges, schools, trade unions, third sector and government organisations in order to meet these goals.

In considering the specific context of the OEPS project it should be noted that the Scottish education system is historically distinct from that in England (Bryce et al, 2013). The most obvious differences are in the school system and its associated qualifications, the four year university honours degree and an integrated credit and qualifications framework (SCQF). Nevertheless, despite some differences in nomenclature, the development of a mass system of HE had strong similarities both sides of the border. At the end of the 20th century and for the first few years of the 21st,both the English and Scottish HE systems, driven by shared concerns that increased participation in HE was skewed by socio-economic background towards the better off, adopted similar approaches to policy and practice in WP. The newly devolved Scottish Parliament developed policy initiatives that had recognisable similarities across the border. Funds were allocated to targeted projects and there was an emphasis on partnership and collaboration between universities, colleges and other organisations. The creation of Regional Wider Access Forums in 1999 brought together all the Scottish HEIs in regional bodies tasked to collaborate on WP (Osborne, 2003: 44). The forums were tasked to increase the participation in HE of young people and adults from socio-economically deprived backgrounds. Shortly afterwards the college sector, which delivers a significant amount of HE were also included in the forums (SFEFC, 2000). In their first few years the forums tended to work through short-term targeted project funding. Following the publication of the Learning for All report (Scottish Funding Council, 2005) there was a shift to a more strategic and longer-term approach. Until they ended in 2012 the forums provided a catalyst for partnership working between universities, between universities and colleges and with a wide range of external organisations. In this context WP staff working for the OUiS developed approaches to working in partnership that have now evolved over more than a decade (Cannell et al, 2005; Cannell and Hewitt, 2010).

Throughout this period there have been successive changes in the way in which WP provision and student fees were supported. Initially systems across the UK were broadly similar. However, the abolition in 2008 of the graduate endowment by the Scottish Parliament meant that there were no fees for full-time HE in Scotland. The contrast with the fee regime in England became all the greater when the cap on undergraduate fees in England was lifted to £9000 per year. Notwithstanding the fact that both

Westminster and Holyrood continue to talk about the importance of WP to HE, the terrain in which policies are construed and delivered is now radically different each side of the border. Moreover, in discussing adult education and lifelong learning, it is important to note that part-time HE in Scotland continues to attract fees even though full-time HE does not.

In this complex, differentiated and changing landscape the costs associated with access and the curriculum available to support students in transition are both critical factors affecting WP. Six or seven years ago as WP practitioners working for the OUiS we started to find that community-based and trade union partners were becoming interested in free open resources. In an environment where part-time study incurred fees, interest tended to be driven by 'free' rather than 'open'; nevertheless, the range of the curriculum offer on OpenLearn and other similar sites was appealing. Initially, however, despite the interest and the attraction of good quality material that could be accessed without fees, the level of uptake was minimal. In a small number of cases partners noted that there were no suitable resources available as OER. In these cases tentatively, and initially as a set of unconnected projects, we began to work with these organisations to create new content. Examples of the organisations involved and the OER developed are discussed in Cannell (2013). Two processes in particular were critical to the success of these initiatives. The new OER courses were designed and created through a process that involved both the university and the non-university partner sharing and contributing expertise. In addition, we started to think about how the online content would be used in the partner's context. We began to generalise from initially fragmented experience to understand that issues of practice were as important as the design of well-structured content. This emphasis on Open Educational Practices (OEP) mirrors international developments that were highlighted in the Cape Town Declaration (2007) and have informed recent thinking on open education. However, working with partners in a WP context led us to extend the focus beyond practices associated with the design of the learning materials to thinking about the social practices engaged in by learners and those who support or facilitate their engagement with learning. The success of these projects led to the OEPS project being funded by the Scottish Funding Council to explore how the insights obtained in this work can be shared and developed at greater scale.

Opening Educational Practices in Scotland

The OEPS project began in May 2014. Its primary aims are to encourage greater use of OER in Scottish HE and to develop the practices associated with OER that can be used to support WP and transitions between sectors, and between informal and formal learning (Malcom et al., 2003: 62). In the context of the project and its antecedents, informal learning is understood as learning opportunities that are undertaken outside of the college and

university sectors; usually but not always unaccredited and often supported through the agency of a trusted organisation. The project forms part of the outcome agreement between the Open University in Scotland and the Scottish Funding Council and its remit is to work and develop capacity sector wide. Building on experience from previous partnership-based OER projects, OEPs are understood to be concerned with pedagogy, learning design, structures and support and also with partnership, networks and social models of learning. The project objectives are broad and include work with other HEIs and with the Scottish college sector. At the time of writing we are working in collaboration with more than forty organisations. Around half of all the partnerships are with third sector organisations and trade unions.

The OEPS objectives are ambitious and unusual in that they straddle the worlds of open education, learning technology and WP. Each has its own communities of practice and own discourse. Conscious of this, in the first few months of the project we devoted a lot of time to meeting with partners and listening in order to understand their interest in open education and to how they understand opportunities and barriers. This process informed and contributed to a conception of the overall project as an interlocking set of smaller action research projects or strands. The team understands its role as both practitioners who intervene to support change but also as researchers into our own practice in order to inform interventions.

As noted in the introduction there is a view that online resources have the potential to open up new approaches to education, training and sharing knowledge. However, with the exception of the organisations engaged in the OER projects described by Cannell (2013), there is little evidence of the use of OER contributing to WP. But the promise of the OER movement is not just about use but also the way in which OER can be shared, reused, remixed and reversioned. Potentially this opens up the possibility of radically different models of developing learning materials that embody collective experience and that can be easily customised for specific contexts or student needs. However, in our extensive discussions around the Scottish sector and other organisations interested in education and training, with the exception of the OUiS, we have found no evidence of this happening. Engagement with OER seems to be a prerequisite for an interest in exploring the affordances of remixing and reversioning. The reasons for not engaging are complex. In part it is because it is assumed that use of online resources requires confident and motivated individuals able to work on their own. Furthermore, there is a vast range of resources available. The organisations we speak to have lots of demand on their time and are not in a position to locate, curate and organise free resources so that their clients or members are clear about where and how to start their learning journey. Such organisations often have highly committed staff with a strong interest and motivation in supporting the education or training of their clients or fellow

workers. Indeed it is very common that such staff have engaged with online training resources and with courses on OpenLearn, FutureLearn and similar sites. However, they are very conscious that they are not 'teachers' and need support in developing a facilitative role. The clients are often non-traditional learners who experience many of the economic, social, cultural and subjective barriers to participating in education that have been well discussed in the WP literature (McGivney, 2004).

Reflecting on experiences of working in successful partnerships to support transitions into formal education, the small number of OER projects that laid the foundation for OEPS and the feedback from a much wider range of potential partners at the start of the project encouraged us to adopt new approaches. The project's link with Scottish Union Learning (SUL) provides a useful example. SUL is the learning arm of the Scottish Trades Union Congress (STUC) and works with the unions affiliated to the STUC to support union learning representatives (ULRs) in workplaces across Scotland. ULRs are union members, recognised by the employer and elected to a role that involves promoting the value of learning, supporting learners and arranging learning/training in the workplace. OEPS is working with SUL to develop a large community of ULRs who can act as workplace 'open learning champions'. In the process we have learnt a lot more about the barriers that exist to the use of OER. New and less confident learners need a supported and curated set of choices as their first step in an online environment. Existing OER repositories don't fulfil this function and the range of options and choices deters new or tentative learners. Even when ULRs advise their workmates as to where to start, the environment can look 'too much like a university' and at this point new learners often feel that a university is not the right place for them. ULRs have suggested to us that these barriers could be mitigated by design that recognises learner context and anxieties; this is partly about curation, partly about design that recognises lived experience and partly about presentation. There is also an appeal for the development of linked material to support social and collective approaches to the use of OER. These might include exemplars of how to instigate, support and sustain workplace study groups (Macintyre, 2015a). The project team is working with the ULR community to embody these features in a community-based website designed to support effective practice in the use of OER (www.oeps.ac.uk).

The project is also using established OER developed by the OUiS in collaboration with various third sector organisations over the last five years. This work has sought to develop and share an evidence base that highlights the characteristics of open practice that best support the use of OER in WP. OER courses such as *Caring Counts*[3], designed to support transitions into education or employment, have proved particularly helpful in this respect.

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[3] http://www.open.edu/openlearnworks/course/view.php?id=1688

Additional data will be obtained through a small number of new OER creation projects that have been chosen with large scale audiences in mind and which aim to provide exemplars of good practice in resource creation and use at scale.   In effect the project is testing a model of learning design and delivery that achieves MOOC scale participation but with a community-based approach to course development and learner support.

Discussion and Conclusions

Despite targeted funding and a strong ethos of education as a public good, well over a decade of strategic initiatives have made very little impact on socio-economic inequality in access to HE in Scotland (Scottish Funding Council, 2014).   The demise of the regional wider access forums marked a shift away from a policy focus on WP at all stages of the lifecourse and towards a concentration on the admission to university of young people from the most deprived areas.   Increasingly Scottish universities have adopted contextualised admissions policies that take such factors into account. However, this has yet to make significant differences and indeed in a system where entry is based on school leaving grades it is doubtful that in itself it can make anything more than a marginal change.   Moreover, Osborne (2003: 49), reflecting on previous periods of high unemployment and economic uncertainty, notes the long-term, and sometimes unintended, impact that policy decisions can have on lifelong learning and WP. Currently an understandable concern for the welfare of young people in a period of austerity, combined with cuts in funding, has meant that there are many less places for mature students in the Scottish college system. Hitherto this has provided an important access route to degree study and has made an important contribution to broadening the social base of Scottish HE. Adult and part-time study opportunities are also being reduced through cuts in local authority community education services. It is in this context that OEPS has been exploring new approaches to WP through the use of OEPs.

   Many of the strands of activity under the umbrella of the OEPS project involve partnerships with third sector organisations and unions. Felstead et al (2005) highlight the importance of social relationships and mutual support in the specific context of learning in the workplace. More generally, the importance of peer support in successful WP practice has been long recognised (for example McGivney, 2004).   We have found through extended dialogue with a range of partners that as a result of their own practice-based experience they understand the relevance of designing practice that enables social solidarity and collective participation by learners.   In this process of dialogue, and through testing ideas in specific instances of using OER courses with partners, we have found that it is necessary to tackle two critical and intersecting issues. The first is that online education is typically understood as an activity undertaken by

individual learners. Clearly this may indeed be the case, but it is also possible to create pedagogical frameworks that combine individual study with opportunities for social interaction and peer support. Such frameworks can draw on experience from outside the immediate context and are most effective when they are the result of co-creation between the university and the partner. The design of *Caring Counts* provides an illustrative example of this approach. Professionals working for carers' organisations, students who were also carers and OUiS staff worked as a team to design the course. OEPS has built on this and similar experiences and developed learning design workshops that provide the scaffolding for relevant members of partner organisations (variously unions, third-sector organisations, companies, and academic specialists) to design new material or reflect on context and construct new practice. Secondly, it is necessary to develop shared understandings of learning environments where there is no formal 'teacher' (Macintyre, 2015b).

Developing practices that afford learner autonomy in supported and motivating social settings requires the active participation of partners. Effective partnerships require shared

> '… networks, trust, norms and values that enable individuals and organisations to achieve mutual goals.' (Dhillon, 2010: 692)

and take time to evolve. However, investing effort in partnerships has paid significant dividends in engagement and sustainability. In practice, trust and shared goals are influenced by the control of money and resources. Tett et al (2003: 50) note that

> 'Partnerships are characterised by processes of inclusion and exclusion, dominance and subordination and generally the partner that controls the funding is dominant.'

Typically it is the cost of teaching support or materials that is at stake. However, our experience so far suggests that using OER and developing sustainable practice has the potential to overcome this tension. In the examples of partnership discussed by Cannell (2013) the fact that the courses are free is important and contributes to a different set of relationships between the university and the non-university partner. Of course there are still costs, but the design of free online resources shifts these in the direction of support for learners; support that can often be located within the partner's structures. Thus there can be a redrawing of traditional boundaries, with greater equality between practitioners and academics working together in a process of co-creation and participatory design. As a result some aspects of student support that are normally assumed to come from the educational institution can be located within the partner organisation.

While the main focus of OEPS has been on adult and part-time education we have also piloted activity in schools (Macintyre, 2015c). The evidence

from these pilots suggests that the ubiquity of good quality online content and the widespread availability of digital devices are bringing informal and formal learning closer together (Tibbitt, 2011). Tibbitt notes the growth of communities of practice that are not linked to established educational institutions. Across a wide range of the OEPS project strands we note that partners tend not to think of the informal learning practices involved in everyday use of the internet as 'learning'. Macintyre (2015a) notes that when school students involved with an OpenScience project were asked about the use of online resources they simply felt it was a non-issue, just part of their world. But this is not just about 'digital natives'; elsewhere Macintyre (2015d) also finds that older people involved in a Citizen Science project, who were initially resistant to the use of online resources, rapidly evolved personal practice in using digital media. The ubiquity of informal digital practice through software tools such as Google and YouTube has advantages, in as much as users are less likely to be deterred by the social, economic and subjective barriers that accompany formal learning. However, confidence in the personal, informal digital world does not necessarily transfer across to more systematic study either formal or informal. We would suggest that this is an issue for all educational institutions. Students and potential students of all age groups inhabit a digital world but it is not evident that practice in HE is aligned with this experience. Geser (2007: 37) considers that

> '… traditional ways of providing learning opportunities are no longer adequate to equip teachers, students and workers with the competences required to participate successfully in the emerging knowledge-based society. It is becoming ever more evident that the societal frameworks and conditions are changing at a pace that is not being met by what most educational institutions today offer as learning opportunities.'

And writing more recently Goodfellow and Lea (2013) note that in general the recognition of students' lived experience of the digital world and the further development of digital literacies appropriate to HE study is not being taken seriously enough by universities.

The wider use of OERs and OEP is not a panacea for WP. However, the stubborn persistence of inequalities in access, which was noted by the first Learning for All Report (2005), suggests at least that there is a need for careful consideration of new or revised approaches. Writing just before the emergence of the open education movement George and Gillon (2001: 15) argued that the WP debate has to extend beyond conventional linear pathways culminating in the award of full-time degrees to young people and for

> '… structures and cultures of higher education to reflect the diverse needs of young people and adult learners'

These needs are shaped and conditioned by the digital world that learners of all ages inhabit. The emerging evidence from the OEPS project is that an understanding of open education, embedded in partnership and social practices that engage non-traditional learners, can make a contribution to WP. In part this means that institutions need to develop new pedagogical practices that recognise the learning experiences their students bring with them in order to effectively develop digital literacy. But in the context of WP there is also a need to rethink traditional approaches to outreach and the links between informal and formal learning. Outreach activity has traditionally been seen as labour intensive and operating at the margins of institutional practice, often on project funding. A survey by Cannell and Hewitt (2010b) found that university outreach in rural Scotland was typically short-term project funded and not sustained beyond the life of the project. The evidence from OEPS (Cannell, 2014 and Cannell, 2015) is that bringing together WP outreach and open education offers different and potentially sustainable possibilities. Traditional outreach requires funding to be devoted towards appropriate contextual content and tuition, whether face-to-face or distance. Free, openly licensed courses allow attention to shift towards practice and sustainability. As OEPS has evolved we have found that the development of new content and/or new practice needs to be underpinned by a process of systematic learning design. This approach is of necessity collaborative and allows the practice-based knowledge to be combined with the pedagogical expertise of the academic partner. Content and practice is co-created (Macintyre, 2015b). In the process there is a transfer of power and a shift in boundaries, since investing in learning design also requires the development of practice that can be sustained by the non-academic partner. OEPS can provide resources and practice guidance at scale but the responsibility for ongoing delivery rests with the structures and relationships established. Making content relevant in the specific context of the partner happens in two mutually reinforcing ways. Principally through establishment of social connections between learners who are able to bring their own experience to the study of material that may be generic or written with other learners in mind. However, openly licensed material also allows reversioning. In the project to date we have examples of where material is reversioned by the OU. This in itself offers significant advantages in being able to use existing material that is well tested and tweak it at low cost for new purposes. The tools available for reversioning are not yet suitable for use by non-academic partners; however, the near future offers the possibilities of tools and practices that could lower the existing technological barriers.

References

Bryce, T.G.K., Humes, W.M., Gillies, D. and Kennedy, A. (2013) *Scottish Education Fourth Edition: Referendum*, Edinburgh: Edinburgh University Press.

Cannell, P., Hewitt, L. and George, J.W. (2005) 'Joined up access: the experience of the Open Road programme in Dumfries and Galloway', *Widening Participation and Lifelong Learning,* 7, 3: 1 – 5.

Cannell, P. and Hewitt, L. (2010a) 'Reflecting on the evolution of *Openings* initiatives in Scotland', *Widening Participation and Lifelong Learning*, 12: 130-137.

Cannell, P. and Hewitt, L. (2010b) *Engagement with Higher Education in Rural and Remote Scotland and Wales*, unpublished report, The *Open* University in Scotland.

Cannell, P. (2013) *Exploring Open Educational Practice in an Open University*, UNISA Cambridge Conference in Open Distance and e-Learning, Cape Town, 2013.

Cannell, P. (2014) *OEPS Project Report March 2015* http://oepscotland.org/about/aboutoeps-project-reports/ (accessed 23 October 2015)

Cannell, P. (2015) *Year One Update on the OEPS project* https://goo.gl/QOnKJM (accessed 28 October 2015).

Cape Town Open Education Declaration (2007). *Cape Town Open Education Declaration: Unlocking the promise of open educational resources*, http://www.capetowndeclaration.org/read-the-declaration (accessed 11th April 2015).

D'Antoni, S. (2009) 'Editorial: Open Educational Resources: reviewing initiatives and issues', *Open Learning,* 24, 1: 3–10.

D'Antoni, S. (2013) 'Open Educational Resources: Access to knowledge – A Personal reflection', In McGreal, R, Kinuthia, W and Marshall, S (eds) (2013) *Open Educational Resources: Innovation, Research and Practice*, Vancouver: Commonwealth of Learning and Athabasca University.

Dhillon, J. K. (2010) 'The role of social capital in sustaining partnership', *British Educational Research Journa*l, 35, 5: 687 – 704.

Falconer, I., McGill, L., Littlejohn, A. and Boursinou, E. (2013) *Overview and analysis of practices with Open Educational Resources in adult education in europe*. Luxemburg: European Commission

Felstead, A., Fuller, A., Unwin, L., Ashton, D., Butler, P. and Lee, T. (2005) 'Surveying the scene: learning metaphors, survey design and the workplace context', *Journal of Education and Work*, 18, 4: 359 – 383.

Garcia, P.G., ALIP, A.S. and Serrano, J. (2013) 'Open knowledge initiatives in the Philippines: The Vibal Foundation', In Dhanarajan, G. and Porter, D. (eds) *Open Educational Resources: An Asian Perspective*, Vancouver: Commonwealth of Learning and OER Asia.

Geser, G. (2007) *Open educational practices and resources: OLCOS Roadmap 2012*, Salzburg: Salzburg Research.

George, J. W. and Gillon, E. J. (2001) 'What evidence do we need? A case study of widening participation', *Widening Participation and Lifelong Learning*, 3, 3: 15 – 20.

Goodfellow, R. and Lea, M.R. (2013) *Literacy in the Digital University,* Abingdon and New York: Routledge.

Koppi, T., Bogle, L. and Bogle, M. (2005) 'Learning objects, repositories, sharing and reusability', Open Learning, 20, 1: 83 – 91.

Lane, A (2013) 'How OER Support Lifelong Learning'. In McGreal, R, Kinuthia, W and Marshall, S (eds) (2013) *Open Educational Resources: Innovation, Research and Practice*, Vancouver: Commonwealth of Learning and Athabasca University.

Macintyre, R. (2013) 'Openness and practice: innovations through openness in partnership'. In: *International Enhancement Themes Conference: Enhancement and Innovation in Education*, 11-13 June 2013, Glasgow, UK, 90–96.

Macintyre, R. (2015a) *OEPS working with Scottish Union Learn Education Champions.*

http://oepscotland.org/2015/10/22/oeps-working-with-scottish-union-learn-education-champions/ (accessed 28th October 2015).

Macintyre, R. (2015b) *Designing open learning journeys* http://www.oeps.ac.uk/create-your-own/designing-open-learning-journeys (accessed 28th October 2015).

Macintyre, R. (2015c) Open Educational Practices in Scottish schools, unpublished report https://oepscotland.files.wordpress.com/2015/05/opensciencecasestudy-v3.pdf (accessed 4th June 2015).

Macintyre, R. (2015d) *Participatory Design and Citizen Science Pilot Project*, unpublished report, The Open University in Scotland.

Macleod, H., Haywood, J., Woodgate, A. and Alkhatnai, M. (2015) 'Emerging patterns in MOOCs: Learners, course designs and directions', *TechTrends*, 59, 1: 56 – 63.

Malcom, J., Hodkinson, P. and Colley, H. (2003) 'The interrelationships between informal and formal learning', *Journal of Workplace Learning*, 15, 7/8: 313 – 318.

McAndrew, P., Santos, A., Lane, A., Godwin, S., Okada, A., Wilson, T., Connolly, T., Ferreira, G., Buckingham Shum, S., Bretts, J. and Webb, R. (2009). *OpenLearn Research Report 2006-2008.* The Open University, Milton Keynes, England. http://oro.open.ac.uk/17513/

McGivney, V. (2004) 'Understanding persistence in adult learning', *Open Learning: The Journal of Open and Distance Learning*, 19, 1: 33 – 46.

OECD. (2007). *Giving knowledge for free. The emergence of open educational resources,* Paris: OECD Publishing.

Osborne, M. (2003) 'Policy and practice in widening participation: a six country comparative study of access as flexibility', *International Journal of Lifelong Education*, 22, 1: 43 – 58.

Scottish Funding Council (2005) *Learning for all,* Edinburgh: Scottish Funding Council

Scottish Funding Council (2014) *Learning for all: eighth update report on measures of success 2014,* Edinburgh: Scottish Funding Council http://www.sfc.ac.uk/communications/Statisticalpublications/2014/SFCST062014.aspx (accessed 28th December 2014).

Scottish Further Education Funding Council (SFEFC) (2000) *Wider Access Regional Forums*, Circular Letter FE56/2000 (Edinburgh: Scottish Further Education Funding Council).

Tett, L., Crowther, J. and O'Hara, P. (2003) 'Collaborative partners in community education', *Journal of Educational Policy*, 18, 1: 37 – 51.

Tibbitt, J. (2011) Social media, social capital and learning communities, http://pascalobservatory.org/pascalnow/blogentry/pie/social-media-social-capital-and-learning-communities (accessed 4th June 2015).

Welsh Government (2014) *Open & online: Wales higher education and emerging modes of learning", Report of the Online Digital Learning Working Group*, http://wales.gov.uk/docs/dcells/publications/140402-online-digital-learning-working-group-en.pdf, (accessed: 28th April 2015).

Yuan, L. and Powell, S. (2013) *MOOCs and open education: Implications for higher education, CETIS White Paper*, http://publications.cetis.ac.uk/2013/667, (accessed 19 October 2015).