Connected Learning: Innovation in the Face of Conflict

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How can the university, as an anchor institution for its communities and for the public good, use new digital technologies to best effect to promote learning in societies riven by conflicts? What can be learned from such limit cases that is beneficial to higher education more generally? The approach proposed in this chapter reaches back to the core values of the public university, seeing new technologies as opportunities for re-invigoration and enablement in a rapidly changing digital world. Particularly valuable are the principles and practices articulated by the Connected Learning Alliance (www.clalliance.org) as well as Margaret Archer's educational sociology (Archer 2003, 2007, 2012).

The Connected Learning approach advocates for a world in which all learners have access to participatory, interest-driven learning that connects to educational, civic and career opportunities. In turn, this approach builds on the progressive tradition of Freire and Dewey in prioritizing learning that advances social justice by attending to the needs of the individual within her economic and social contexts (Freire 1993; Dewey 2011). The significant opportunities offered by new digital technologies follow from these imperatives rather than being seen as determinants (Ito et al 2014). Archer's critical realism complements Connected Learning in its focus on the subject's reflexivity; the "inner voices" that we all have and with which we shape our relationship with the objective world and our sense, or absence, of projects that may, or may not, bring about our "ultimate concerns" (Archer 2007).

Together, these approaches suggest a concept of Connected Learning that has three dimensions. The first dimension (here termed C1) is the awareness of the sense of self that is shaped by reflexivity. Here, it is crucial not to conflate differing modes of reflexivity with personality types; subjects can, and do, change their mode of reflexivity in response to the context provided by their external world, including their access to education and the forms that their educational opportunities take. The second dimension (C2) is the web of relationships that bind people to one another. While this includes a wide range of forms of association, the interest here is in the social capital that accumulates within a cohort of learners who share an intense educational experience together and may, or may not, continue their association after the completion of their course of study. Here, understanding the differences between tacit and codified forms of knowledge will be particularly important. The third dimension (C3) is the public good that is created within the university. This is the collective

value of education in all aspects of civic life as well as, more specifically, to the economy and to social justice. Aligning with social needs in this way defines the university as an engaged, anchor institution.

Each of these dimensions is already enabled, or potentially strengthened, by the rapid application of new, and often disruptive, digital technologies. In particular, the convergence of ubiquitous bandwidth, cheap and distributed data storage and increasingly affordable, location-intelligent mobile devices is creating new opportunities that can break down entrenched barriers:

 "Today's open networks provide a democratizing function where marginalized and non-dominant forms of knowledge, culture, and values gain visibility, and where communities can build capacity in a bottom-up way … These dynamics are key to the equity agenda of connected learning. While today's technology-leveraged connected learning environments are dominated by privileged groups, we see the opportunity to radically expand and diversify the kinds of interests, identities, and communities that are tapped into the connected learning approach" (Ito et al 2013).

In thinking about how this concept of Connected Learning could be applied, the focus is on universities caught up in long-term and apparently intractable conflicts. In places such as Northern Ireland, South Africa and parts of the Middle East, universities are particularly challenged by either internal divisions along sectarian or racial fault-lines, or by regional conflicts that make the traditional campus difficult, or impossible, to operate. Situations such as these are limit cases for Connected Learning, and particularly for the opportunities offered by new digital technologies. Evidently, if the university can continue to function under such limit cases, contributing to progressive education outcomes, then the innovations possible through Connected Learning can make a significant contribution more generally.

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The first dimension of connected learning – C1, the inner conversations of reflexivity – is based on the recognition that everyone, from early in life, has an internal conversation as a normal mental activity. These internal conversations interpret and mediate the interrelationship between the self and social context and form the basis on which we determine our future courses of action, or inaction (Archer 2007).

In her work, Archer has been primarily concerned with people who live within sufficiently stable contexts to permit expectations of continuity in their external world, allowing them to formulate "projects" that are directed by different types of "ultimate concerns". However, she also recognizes the significance of what she terms "fractured" reflexivity; circumstances in which the subject's external world lacks sufficient predictability or continuity, whatever the reason for such traumas. Here, the reflexive internal conversation is immediate and expressive, intensifying affect rather than leading to purposeful courses of action (Archer 2012). Given the emphasis in the Connected Learning approach on social justice and marginalized individuals and communities, there is a significant interest in

further explicating Archer's outline of fractured reflexivity. Just as the inner conversations and ultimate concerns of those benefitting from the stability and continuity of their circumstances can, and do, mediate the structural properties of the societies in which they live, so can fractured reflexivity be superseded by the successful inner articulation of projects that are meaningful in the inner awareness of self.

This relationship between the inner sense of purpose by the subject and the objective outcomes of their projects provides a key link between the development of social relationships with others (C2). As Archer puts it:

"for a young subject confronted with new decisions (such as school leaving) and seeking to clarify her concerns in life (such as the choice of her first job), her `contextual continuity' represents a major resource. As she internally fumbles through the infinite variations upon those ineluctable questions ('What matters?' and `What to do about it?'), she receives two gifts if she shares her incomplete reflections with her `similars and familiars'. These gifts are external `confirmation' and `completion' of her internal conversation" (Archer 2007).

This communication with the subject's "similars and familiars" validates internal, private, dialogue while building various forms of relationships with other individuals, and is central to any educative process.

Building connections with others – C2 in the Connected Learning schema set out here – is at the heart of the educational enterprise and there has been consistent focus on how to build meaningful webs of relationships between learners such that they interact with one another to build a shared understanding and improved competences. What has not been so common here, however, has been consistent consideration of the differences between tacit and codified forms of knowledge and the ways that these differences can be deployed against differing educational requirements. As will become clear later, the relative balance of tacit and codified knowledge may be particularly useful in using new digital technologies to best advantage, particularly in difficult circumstances where conventional approaches to learning cease to be tenable.

Most considerations of the work of universities privilege the transmission of codified forms of knowledge. This is information and interpretation that is presented and communicated in standardized formats that can be reproduced and distributed many times over: books, scientific journals, mathematical formulae, code (Foray 2004). Digital technologies have massively amplified the volume and possibilities of codified knowledge, allowing infinite reproduction, almost instantaneous transmission irrespective of distance and ever-increasing accumulation.

In practice though, a significant amount of university-level learning depends on less formal practices. Whether in medicine and the health professions, science and engineering or in the laboratories of the natural sciences, the transmission of knowledge is from watching, demonstrating, copying and practicing. Such

transmission is often non-verbal, using sight, sound, touch and smell. This is tacit knowledge:

"tacit knowledge drives language, science, education, management, sport, bicycle riding, art, and our relationship to machines. That is to say, tacit knowledge makes speakers fluent, lets scientists understand each other, is the crucial part of what teachers teach, makes bureaucratic life seem ordered, comprises the skill in most sports and other physical activities, puts the smile on the face of the Mona Lisa, and, because we users bring the tacit knowledge to the interaction, turns computers from idiots savants into useful assistants" (Collins 2010).

Current digital technologies attenuate this distinction between codified and tacit knowledge. This is because the virtual world has overcome what can be called the "tyranny of space". It is now reasonable to expect that a group of learners, distributed between New York, Cape Town, Beijing and Sydney, can come together in real time via a video link. It is also a reasonable possibility, relevant to the limit cases under consideration here, that students can come together in a virtual classroom that transcends war zones or no-go areas that are too difficult to cross. But despite the considerable advances made in haptic technologies and virtual reality, these forms of communication still tend to be "cold"; formal, structured and heavily codified. This is why there is often a compelling need to augment virtual networks with the qualities of face-to-face meetings, placing a premium on the "hot" qualities of tacit interaction.

One way of conceptualizing the distinction between codified and tacit knowledge is to explore their spatial implications further. Space is, in itself, a social construct that actively mediates relationships. Indeed, there is no better example of this than the Jeffersonian model for the ideal university campus, emulated across the world, with a central, neo-classical edifice and the authority of the disciplines mapped out in symmetrically- aligned buildings. In this, architecture and spatial form "speak" for themselves and there is little need for words to specify who is privileged to enter – and who should keep away. An appreciation of the fuller implications of the ways in which new digital technologies have overcome such traditional spatial constructs, coupled with an understanding of the significance of tacit forms of understanding as the doppelganger of codified knowledge, provides significant opportunities for designing and implementing educational models in this second domain of Connected Learning.

The third dimension of Connected Learning – C3 – is the accumulation of the outcomes of education as a public good. Here, Connected Learning is clearly aligned with the mission of the public university, contributing by expanding participation and the nature and quality of knowledge and of new ways of understanding. A key issue here is who is included, or excluded, from networks of learning in the face of growing and entrenched forms of inequality. Equality of opportunity is a key tenet of social justice and a necessary condition of democracy. But inclusion is also central to the value and relevance of the collective outputs of the university, bringing together the insights, competences and passions of people from all aspects of life in an increasingly complex and

cosmopolitan world. In this sense, this third dimension of Connected Learning is dependent on the success of webs of interactions between learners (C2) and on the realization of the projects and ultimate concerns of individuals (C1).

Inclusion has, in itself, several interrelated aspects. These rest on a contradiction, best articulated by Pierre Bourdieu in his study of the role of elite education institutions in France is maintaining the power and interests of the ruling establishment. Universities constantly generate new ideas that challenge the status quo and promote radical social and economic change. But they also serve as gatekeepers to high status careers and elite networks across all forms of activity (Bourdieu 1996).

This duality is as evident across the new virtual networks as in the design and operation of the traditional campus. While new on-line consortia such as Coursera and FutureLearn are providing access to curricula without charge or evidence of prior educational attainment, their member universities are not giving away the qualifications that they are licenced to offer by their national educational jurisdictions. Indeed, student tuition fees across the world continue to rise in tandem with expanding enrollments for open, no-charge, on-line courses, maintaining a clear and growing distinction between those who can afford a university qualification and those who cannot.

In this respect, this third dimension of connected learning is aligned with advocacy for public policy reform. The Connected Learning Alliance originated in advocacy for reforms in schooling that would counter the continuing exclusion of economically and socially marginalized communities. The extension of this approach into post-compulsory education needs to make a direct and informed connection between the application of new digital technologies and continuing and expanding forms of unfair discrimination in access to, and success in gaining, university level qualifications.

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Universities mostly deal with conflict on their campuses through the principles of academic freedom, responsible free speech and the promotion of reasoned, evidence-informed debate. These approaches are tested by issues such as race and gender discrimination, hate speech and to an increasing extent by the balance between freedom of expression and the State's arguments for pre-emptive security measures. With rare and well-publicized exceptions, these conflicts rarely stop the ongoing cycle of campus life. But sometimes the sustained or apparently intractable nature of conflicts may make their accommodation untenable. In these circumstances, well-tried principles may cease to work because their predicates may no longer be attainable. For example, liberal humanism depends on the preparedness to listen and consider the other side of an argument, however resistant to persuasion a person may be. But if positions are irredeemably polarized, or if prejudicial stereotypes are immovably entrenched, then all that may happen in the classroom is the constant and retrogressive re-statement of prior positions; rather than advancing knowledge and understanding, engagement may result in the decay of democratic principles and practices.

At the further end of this spectrum are circumstances where conflicts are so intense that universities may not be able to function at all. This has long been the case in war zones; in today's prolonged and unresolved armed conflicts these circumstances are becoming more prevalent. A recent review of violence against education institutions in thirty countries found that the greatest threats are in in Afghanistan, Colombia, Pakistan, Somalia, Sudan and Syria. Between 2009 and 2012 each of these countries had more than one thousand known attacks on students, faculty members or campuses, including occupation of buildings by military forces. Attacks on universities included "assassination, killing or injury of students and academics, arbitrary arrest, torture, abduction, kidnapping, imprisonment and the bombing of groups of students, individual academics and higher-education facilities" (Global Coalition to Protect Education From Attack, 2014).

When traditional and well-tried principles of liberal discourse fail, new and innovative approaches for advancing democratic principles are required. Longer-term conflicts are particularly challenging, both because they have proved stubborn in the face of attempts to resolve them, but also because change in universities works on a long time scale given that it may take five years for a single student cohort to move from enrolment to graduation. Here, three definitive conflicts on the late 1980s and early 1990s were continuing sectarian violence in Northern Ireland, intractable conflicts in the Middle East and the stubborn persistence of racial segregation in South Africa. All three situations implicated universities in complex ways and continue to do so today.

The role of the engaged university as an anchor institution in a society recovering from the consequences of long-term sectarian violence was highlighted in the focus on Northern Ireland at the June 2014 Global Forum for Higher Education for Democratic Innovation at Queen's University, Belfast (Global Forum 2014). After more than 20 years of fighting, paramilitary forces operating in Northern Ireland declared ceasefires in 1994. Four years later a political agreement was endorsed by referenda; new political institutions began to operate in 2000, were suspended in 2002 and were re-established in 2007.

In their chapter in this volume, Tony Gallagher and Jennifer Harrison describe the ways in which Queens has re-engaged with the communities of Belfast after a long period of ambiguity about the university's role (Gallagher and Harrison, this volume). Queens had previously stood apart and had played little part in the educational needs of socially and economically marginalized communities in the city. For example, and as also described in this volume by Jackie McDonald, Nikki Johnston and Garnet 'Buzz' Busby, Sandy Row is a small Protestant inner-city community in South Belfast close to the Queen's campus. The area suffers significant economic problems and educational underachievement. Recently, progress has been made in developing partnerships between the university and the community. Community activist Nikki Johnston:

"Before this partnership began I would have been one of the first to say that Queen's may as well have been on the moon, because it's not for people in Sandy Row. It has been great now that the Queen's students are coming in and we want

our kids to aspire to do the same thing – our kids thought that the students must be rich or really, really brainy, that there had to be a special reason for going to Queen's rather than simply being an ordinary person. The view of the kids was that you have to be really special, or a millionaire. Their views have changed and some of them are now thinking about going to university, and talking about courses they might do" (McDonald, Johnston, Busby and Gallagher, this volume).

Jackie McDonald, previously a UDA leader, prisoner and member of the delegations that met senior British, Irish and American politicians during talks associated with the peace process, described in the same chapter his own path to engagement with the university. In discussion with a Queen's doctoral student carrying out research in Sandy Row, McDonald described how he had lived all his life close to the Queen's campus but that he'd never been past its gates: "I've driven past it, or been on the bus going past it, a thousand times, but it's like Buckingham Palace; people like me will never be in there". Following from this, the Queen's student – Richard - facilitated meetings with other students and staff, resulting in a programme of community engagement:

"If you can imagine what that felt like to young people in Sandy Row - they lived close to all these important places, but our kids were totally irrelevant. We had to break that mould, so I said to Richard, and later to others, that I would love our kids to get into Queen's, to see that it's not Buckingham Palace, that it's not beyond them. And we worked hard at it, and now we have people from Queen's coming into Sandy Row to help our kids, and it has changed their whole way of looking at life" (McDonald, Johnston, Busby and Gallagher, this volume).

For Queen's, then, there have been two forms of intractable conflict at play over the long and difficult years of conflict, negotiation and the implementation of the peace process. The one has been the sectarian conflicts between Catholic and Protestant communities; while Queen's has been resolutely non-sectarian in its educational mission, sectarian dissonance has defined the political and economic geography of Belfast as a city. The second has been physical violence, ranging from street battles to bombings and political assassinations. Looking at this through a Connected Learning lens, it is apparent how community leaders from Sandy Row have re-aligned their personal projects and ultimate concerns to incorporate the university as part of their sense of contextual continuity. Similarly, university students and staff have stepped across into previously forbidden territory. From these inner adjustments – C1 – new and progressive networks of learners become possible (C2). For the university as an anchor institution the public good (C3) is apparent in the opportunities for including future students from previously marginalized communities.

Looking at examples from South Africa and from the Middle East teases out the differences between different forms of intractable conflict further. South Africa's transition to democracy began in 1990 with Nelson Mandela's release from prison; the end of the "long walk to freedom" that had begun with his imprisonment in 1962 (Mandela 2013). The first elections were held in 1994 – the same year as the ceasefire in Northern Ireland – and the country's new constitution was promulgated in 1996. However, and despite the formal rights

and protections of the new constitution, South Africa is still characterized by extremes of economic circumstances, including access to education and employment, and by racial polarization (Seekings and Nattrass 2005).

These wider issues continue to affect the Higher Education sector in profound ways. By the end of the apartheid era South Africa had a uniquely peculiar set of universities that were segregated by race and then subdivided again by ethnicity and in some cases by language preferences. In one of the most striking demonstrations of the socialization of space, this complex typology of campuses was distributed according to the dictates of the Group Areas Act, following the reservation of some areas for whites only, and others for urban coloureds and Indians or for the ethnic "homelands" allocated to Africans. Understood in terms of Connected Learning, apartheid legislation saw the State attempting to determine the composition and comparative privileges of groups of learners using race and language as criteria.

Evidently, this legacy was unsuited to the democratic principles of the South African settlement and was contrary to the basic requirements of the 1996 Constitution. Following a series of enquiries, the government mandated a comprehensive restructuring of the Higher Education system, built around a set of compulsory institutional mergers that began in 2002 and were largely complete by 2005. The success of this process has been varied. Some institutions were omitted from the process and have been left to follow their own reform trajectories. Some mergers have been largely successful, particularly if they included a strong and well-resourced partner. Others have been problematic, to the extent of threatening the continued existence of the institution (Hall 2015).

Given that South African universities were founded on the principles of racial segregation – irrespective of the intensity of opposition to these principles from within many institutions – and that economic inequality continues to be mapped in terms of race in the post-apartheid era, it is not surprising that many contemporary conflicts continue to be expressed as anger against racially-expressed disadvantage and as accusations of racism. This is compounded by inequalities – often profound – in the quality of schooling and by significant shortages of state funding for poorer students. Consequently, the 2015 academic year opened with a swathe of protests against the exclusion of academically qualified students, dissatisfaction with the lack of state financial support and accusations of racism (Nkosi 2015a, 2015b).

The dilemmas for an education system in which a wide range of key issues are expressed in terms of the polarization of race and privilege is clearest in the most selective institutions, which must navigate both admission on the basis of merit and the potential to succeed while also taking account the effects of very uneven access to prior education opportunities in circumstances where racial identity still correlates to a significant degree with household income and opportunity. Unlike the United States, where the constitution is interpreted as disallowing the legacy of slavery as a factor in college admissions, the South African constitution explicitly requires redress for the continuing consequences of apartheid-era discrimination. In practice, this makes admissions policies that

will be broadly accepted as fair almost impossible to achieve, and ensures that protests about admissions practices will be expressed, in one way or another, as racially discriminatory.

Turing again to the lens of Connected Learning, a primary dilemma for South African universities today is for the networks of learners that form the core of the education system (C2). How can open and productive networks be enabled without the debilitation of polarized stereotypes, but also without perpetuating the offensive racial markers characteristic of the apartheid past, despite the fact that such markers are now being used to address lasting historical inequities?

Circumstances in universities in some parts of the Middle East are, in a way, the inverse of the situation in contemporary South Africa. Here, students and staff may be strongly aligned in their sense of identity and purpose but may be impeded – or excluded – because of the levels of disruption and violence on their campuses from civil wars or regional conflicts. Current circumstances in Syria are an instance of what happens when this breaking point is exceeded, and the physical campus ceases to function.

When the war began in 2011, Syria had a population of about 23 million. There was an extensive and developed Higher Education sector with an estimated 26% of Syrian men and women continuing into post-compulsory education. By the end of 2014 an estimated 3.8 million had fled the country and a further 7.6 million people were internally displaced as a direct result of violence. Of those remaining in Syria, the UN estimated that more than 12 million were in need of humanitarian assistance (United Nations 2015; Watenpaugh, Fricke and King 2014). In the terms of Connected Learning, such devastation rules out any continuing public good – C3 – from a conventional university campus.

Syria's refugees include a significant number of university staff, students whose studies have been interrupted and young adults whose expectations of attending a university in their country cannot be realized. Here, the Institute of International Education's work in Turkey gives a valuable insight into ways of approaching higher education provision in situations where the traditional campus model is not an option.

The IIE estimates that about 10% of the million or so Syrian refugees in Turkey are aged 18 to 22 and that, based on pre-war Syrian participation rates, Turkey is currently hosting between 20 000 and 30 000 potential Syrian post-secondary students. At the same time, there are considerable challenges for Turkish students seeking access to their country's universities. While there has been a significant expansion of Turkey's Higher Education capacity over the last decade, the overall participation rate by Turkish citizens receiving some form of Higher Education has also risen from less than 15% in 2002 to close to 40% in 2012, placing considerable stress on the system and resulting in increasing difficulties in meeting the demand for places (Watenpaugh, Fricke and King 2014).

Faced with the rapid escalation of the war in Syria, the Turkish government has invested in border refugee camps and has been supportive of Syrian enrolments

in Turkish Higher Education institutions, which have increased significantly. However, based on data provided by Turkey's Higher Education Council, the Yükseköğretim Kurulu (YÖK), the IIE estimates that as few as 2% of the Syrian university-age population successfully enrolled at Turkish universities for the 2013-14 academic year. Students in exile face additional difficulties; for example, the majority of courses, as well as administrative and application systems, are in Turkish or English rather than in Arabic. Evidently, given that there are no signs of a solution for the Syrian crisis, this set of circumstances is untenable (Watenpaugh, Fricke and King 2014).

How are Syrian refugees in Turkey responding to these circumstances? The IIE found that, in both large metropolitan centres such as Istanbul and in smaller towns and cities close to the border with Syria, refugee students are coming together for mutual support. In Istanbul, Syrian neighborhoods have begun to form, primarily in lower-middleclass suburbs like Esenler, or in Istanbul's historic district of Beyoğlu, where social and cultural centres have been established. The Syrian presence is more established in Turkey's south, which has far stronger historical links across the border. In Gaziantep exiled university students had set up significant and supportive networks:

"In addition to the educational initiatives we observed, we also witnessed many Syrians using social media, as well as traditional forms of networking, to create opportunities for peer mentoring and knowledge sharing, to build individual empowerment and group solidarity, and ultimately to improve their access to higher education in Turkey. The resilience and initiative shown by these young people should assure policy makers, donors, national governments, and intergovernmental bodies that efforts taken on behalf of Syria's 'Lost Generation' would have far-reaching and successful outcomes" (Watenpaugh, Fricke and King 2014).

Evidently, while opportunities to contribute to the public good from traditional campuses within Syria are negligible of non-existent in the face of armed conflict, informal networks of students in exile, making use of digital technologies, are serving to reproduce the three interlinked domains of Connected Learning, albeit under the most difficult of circumstances.

The differences between South Africa and the Middle East, then, are instructive. In South Africa, conflict is polarized by race and its dynamic is inward looking, threatening the continued functionality of the campus. In Syria, violence is from outside, rendering the university inoperable as an organization. Syrian students in exile in Turkey come together to creating mutually supportive social networks based on a strong sense of shared identity.

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How could the concept of Connected Learning set out here be used to mitigate the effects of such conflicts and how can each of the three dimensions of this schema be further developed? How can the increasing availability of new digital technologies best enable these different dimensions?

One aspect that Northern Ireland, South Africa and the Middle East have in common is the "tyranny of space". Despite the time that has passed since the country's first democratic elections, South Africa today is built on the lasting spatial discrimination of apartheid and of economic inequality. Racially polarized disputes over admissions and student funding that, with increasing frequency, force courses to be abandoned and campuses to close are elements within the prevalent political and economic geography that still shapes public life. The political geography of Belfast has been drawn in sectarian terms, layered by distinctions in economic opportunity; the previously impenetrable divide between the Queen's campus and Sandy Row and, more generally, the spatial sociology of the city as a whole. In Syria the tyranny of space is the dependency of universities on their traditional classrooms, laboratories and other campus facilities. Faced with the armed violence, the killing of students and staff and the internal displacement or exile of a large proportion of the country's population, traditional campuses cannot operate.

The inner voice of reflexive imperative – C1 – is by definition inaccessible to anyone other than the subjective self. Once the subject's sense of projects and ultimate concerns is translated into an account for someone else, the inner voice has been translated into a different form. However, Archer's work with Higher Education students has shown how interviews and observations can be used to map the interplay between subjective reflexivity and the opportunities and challenges of university life (Archer 2012).

Archer has shown that fractured reflexivity inhibits or prevents the development of a person's subjective projects and the ultimate concerns that give them direction. But it does not necessarily follow that the kinds of limit situations described here make fractured reflexivity inevitable. Conflicts are often described in ways that imply that all those involved are caught up in collectives; all are either "black" or "white", "Catholic" or "Protestant", victims or perpetrators. This, though, does not necessarily mean that, for the individual, there is a loss of contextual continuity that results in the fracture of reflexivity. In South Africa, there is consistent evidence for strong and persistent student leadership, for example in bringing pressure on the state for increased funding for those from low income families. Syrian students in exile, often living under very difficult personal circumstances, come together informally to share their concerns and objectives establishing, in Archer's terms, contextual continuity. When traces of internal conversations are translated into external communication in ways such as these, a basis for establishing meaningful connections between learners is established; in the framework set up here, C1 segues into C2.

The limit cases used here suggest how the specific circumstances of conflict and institutional breakdown are important in designing appropriate interventions. In these attenuated circumstances, appreciating the role of space and the differentiation between tacit and codified knowledge provides particular opportunities. Polarization based on stereotypes will often have implications for how space is understood and utilized. For Queen's, it was not enough for the

university to have had a policy of non-sectarianism and to have stood apart from the violence of the streets. Nikki Johnston stresses that it was Queen's students "coming in" to the neighbourhood that made all the difference. For former political prisoner Jackie McDonald, also engaged in the Sandy Row project, it was the experience of going onto the campus that was transformative (McDonald, Johnston, Busby and Gallagher, this volume). In South Africa, landscapes are still typed with the racial hierarchies of apartheid as "white", "Coloured", "Indian" or "Black" (Jansen 200). Despite the formal principles of non-racialism and redress places, including university campuses, are racialized in everyday discourse. In situations such as these, space is saturated with implications, assumptions and memories. Appreciating the valency of these meanings is important in setting up conditions for learning that will break down the barriers of polarization.

The circumstances of the Syrian students in exile in Turkey are different. Here, the urban environments of Istanbul, Ankara and Gaziantep have provided rich opportunities for people to meet, talk, argue and maintain a mutually supportive web of connections with one another. In some cases, these interactions are a continuation of the associations that had existed on campuses inside Syria, before the level of violence had made it impossible to remain. The shared experience of this history of violence, along with the affinity of language, provides the motivation for coming together. In contrast with the internal facing caution and distrust where students are confronting entrenched polarization, Syrian exiles were concerned about dropping out of sight: "the majority of the students and their families expressed the feeling that the international community had forgotten and abandoned them. This sense of abandonment, even more than the disconnection from higher education opportunities, was a source of anger and resentment for these university-age youth and their parents" (Watenpaugh, Fricke and King 2014). Such associations and concerns are replicated in similar ways by exile communities in other large cities across the world

This fear of abandonment mirrors the risk that the economic and cultural capital of Syria as a country will be dissipated to an extent that will make eventual recovery difficult, or impossible. This risk is present for all countries facing prolonged and apparently intractable conflicts. For Northern Ireland, a survey conducted to mark the twentieth anniversary of the 1994 ceasefire found that the areas where sectarian violence had been most intense before the ceasefire had gained the least in the subsequent peace process (McDonald 2014). In South Africa, the political transition of 1994 has failed to translate into an economic transformation and the progressive rights of the 1996 constitution have not been matched by substantive redress. Economic inequality has not been significantly reduced and persistently disappointing economic growth has inhibited the creation of new and better jobs.

The ability to address the systemic consequences of intractable conflicts is of considerable significance to universities. If they cannot bring their expertise in research and teaching forward as contributions to the work of reconstruction then their relevance will be questioned and significant opportunities will be lost. Consequently, a priority for advancing Connected Learning in this third, and

institutional, dimension is to engage with the development of appropriate, progressive and medium to long-term public policy development that will promote the public good.

The benefits of such engagement are apparent in Tony Gallagher and Jennifer Harrison's chapter in this volume. Queen's engagement with the Northern Ireland peace process has included partnerships with business, structured dialogue with government and work with paramilitary groups, the police and the judiciary (Gallagher and Harrison, this volume). For South Africa, the key 1997 White Paper set out a clear agenda for an engaged Higher Education system and their has been consistent attention to the imperatives of community engagement. For Syria, with the majority of the population in exile, internally displaced or in urgent need of humanitarian aid, the possibilities for normalized discussion and debate about public policies are in the future.

Here, though, the particular interest is in the ways that Connected Learning, including the use of new digital technologies, can complement this broad area of engagement, democratic innovation and strengthening of contributions to the public good. The key point is the interdependency of the projects and ultimate concerns of the individual, the value in the networks that link these individuals as learners and the collective benefits that their combined competencies, expertise and commitment will bring to any society, and particularly to those facing intractable conflicts.

In this interdependency, the web of relationships between learners – C2 – is pivotal. When this interpersonal network is threatened or broken, as it is by racial polarization, sectarianism or the imminence of violent conflict, then both the contextual continuity of the individual subject (C1) and the potential for public good (C3) must be in doubt. In turn again, the dynamic of the interpersonal learning environment can be understood in the saturation of space with history, associations, implications and practicalities, whether these spatial factors silently inhibit meaningful connections or whether the settings in which learners come together provide the reassurance often found in the diversity of contemporary cityscapes.

In conventional learning and teaching practices, tacit and codified knowledge transmission is intertwined, usually without an explicit awareness of the distinction. But in blended learning course designs the distinction is invariably more distinct because the on-line component of the course will lack the same facilities for tacit communication than face-to-face learning irrespective, at present, of the technical sophistication of the underlying communication technologies. Through considering the circumstances of universities engaging with intractable conflicts, possibilities for making use of these differing emphases on tacit and codified knowledge transmission become apparent.

In South Africa the burden of racial polarization often complicates face-to-face learning environments and restricts the formation of communities of practice in which significant progress can be made in breaking down these barriers. Here, earlier work has shown how the careful use of spatial architecture can be used to

break down stereotypes, balancing "hot" and "tacit-rich" associations with "cold" and analytical opportunities (Hall, Aiken and Mohamed 2009). New digital technologies provide the opportunity of developing this insight further by using on-line engagement to establish a more analytical environment, heavy in codified knowledge, that reduces the valency of prior stereotyping, and by balancing this appropriately with richer face-to-face engagements that reach through stereotypes to non-racialized networks of learners.

In contrast, the circumstances of Syrian students in Turkey suggests a different design. Here, there are ready-made forms of face-to-face interaction founded in language and the shared experience of violent displacement, exile and the urgent need to reconnect with learning opportunities. Rather than being a potential barrier, "hot", tacit-rich learning environments will build and strengthen these networks of learners. Using new digital technologies can counter the fear – and real possibility – of being cut off and abandoned by the world at large by bringing together groups meeting in the urban niches of Istanbul with students elsewhere in the world. The point here is not that one model is right or wrong; it is rather that new digital technologies allow considerable flexibility in designing learning environments that are adapted to specific sets of circumstances, including situations where conventional approaches cannot work.

Evidently, the ways in which the individual learner relates to digital media is inseparable from both the ways in which a person uses social media to connect with a group of fellow learners and their access to, and use of, open resources and data at the institutional level. Many recent assessments of contemporary uses of social media have been negative, focusing on the effects of on-line pathologies such as cyber-bullying, compulsive and obsessive behaviours and superficial exchanges. But it is also apparent that social media have been used in a wide variety of ways for self expression and the realization of personal goals, using words, images, video to shape and advance interests and competences and to find a fit between these and external opportunities.

The point is that, as always, the technology is neutral; it is the ways in which it is deployed that are significant. The work of the Connected Learning Alliance has been particularly important in showing how digital technologies, when used within appropriate and progressive educational design, can provide fulfilling learning pathways by enabling learners to articulate and realize their personal objectives. Similarly, Archer sees the digital world as key to understanding contemporary generations of young adult learners.

The ways in which the individual subject can use new and emerging digital technologies to explore and connect their sense of self with the external opportunities of both networks of other learners and the immense and expanding resources of the public digital domain are a key aspect of the model for Connected Learning set out here. When conceptualized as three, interlocked, domains, Connected Learning can contribute to democratic innovation in some of the most difficult and complex situations that universities face as anchor institutions in their communities. While the circumstances of universities in Northern Ireland, South Africa and the Middle East are specific to these nations

and regions, requiring contextually appropriate solutions, aspects of their conflicts are increasingly generic. Racism, sectarianism and other forms of unfair discrimination are found everywhere, and new forms of violence are emerging and touching the lives of increasing numbers of people in complex and unpredictable ways. In circumstances such as these, holding the vision of progressive education remains a vital imperative.

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