

# Integrating Today's Classroom into Tomorrow's Digital World

By Dean Groom

For the last decade or so, education has largely focused on integrating ICT into the curriculum while the Internet itself has infused our lives as a daily routine. In this article, I present an argument that the term 'eLearning' has become rather meaningless in relation to academic and social routines.

One conception of the Internet is that of a discussion around the products created in the current mental stage of social evolution that we have just begun to enter. It isn't a new tool or a more convenient searchable database anymore. In our society Internet has been fashioned into a highly personalised, complex network of things – organised by people with a digital identity, which to a greater or lesser degree required them to learn in new ways. More than that, gender, age, location, ability and social-economic status are lessening pre-requisites for learning . . . anything.

Systemised, formal education has a particular agenda. Those who work within this parenthesis are bound to the rules, conventions that have been proven to be true and correct. For a generation which doesn't remember pre-Internet life or is not aware of this proof, the boundaries between academic and social are fuzzy, yet their existence is reinforced in various ways every day.

## The Net-Generation has graduated

This article discusses the post-integration era; the Internet is now persistent in schools, though the degree of access varies wildly. The intensive use of interactive media has led to assertions in education about the effect of this media on youth. Any assumption of a distinct Net generation requiring integrated online-socialisation and information navigation skills in specific ways has to firstly have a solid understanding of the diversity of today's interactive media use among youth itself.

## Who are we dealing with?

Van Dan Beemt, Akkerman, & Simons (2011) present four categories of interactive media activities as patterns of interaction among youth. This is useful in that educators broadly accept that the Internet provides a read/write medium for young people. They put forward

1. interacting
2. performing
3. interchanging
4. authoring

This is significant in that induction teachers had to scaffold learning in more imaginative ways – at the curriculum level. These things are not based in 'facts', but in other domains such as romanticism, mythology, irony and fun. They identified six clusters of interactive media users: **Traditionalists; Gamers; Networkers and Producers**. These are particularly interesting as they related these to *identity and routines*.

They challenge much of the popular belief that surrounds the Digital Natives/Net Generation argument, suggesting a growing number of empirical studies show that young people have intermediate rather than high information and communication technologies (ICT) skills (Cameron, 2005; Margaryan & Littlejohn, 2008 in Van Dan Beemt, Akkerman, & Simons, 2011), that their Internet use is characterised by 'relatively mundane forms of communication and information retrieval' rather than 'spectacular forms of innovation and creativity' (Buckingham, 2008, p. 14 in Van Dan Beemt, Akkerman, & Simons, 2011). They suggest that educators have adopted a top-down approach of pre-defined classes of applications, such as 'information retrieval', 'social

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networking', 'online gaming', or 'downloading' (Livingstone & Bober, 2005; Duimel & De Haan, 2007; Kutteroff & Behrens, 2008 in Van Dan Beemt, Akkerman, & Simons, 2011).

Young people are involved in '**clusters**' of activities – and that these can (but not always) lead to other activities in other clusters. For example, a gamer making a video of their game-play cannot be assumed to be interested in video-making as an activity. On the other hand a student un-motivated towards video-making might be more interested if they are making a video about their favourite game. This student may well be proficient at this by the age of 6, though the syllabus doesn't demand video-making formally for several more years – if at all.

Traditionalists form a group of relatively low-end technology users that mainly engage in interacting. The relatively small group of high-end technology users, labeled Producers, engages intensively in all types of activities, especially authoring. Furthermore, two groups of intermediate technology users are defined by mid level technology use. One group, the Gamers, skews on performing, and the other, the Networkers, skews on interchanging. All groups are significantly different from each other on the four types of activities.

Rather than seeing students as a homologous group of Net-gens adopting radically different patterns of knowledge creation and sharing, research is showing us learning activities and patterns useful in giving meaning to interactive media in diverging ways that impact student cognitive, social and emotional life.

For example, it feels good to be a successful gamer, to play well with online friends and to do that you have to learn how to play the game and with others. This is very complicated, as gamers don't have specific people appointed to teach them how to do this. The patterns of use among young people are not simply based on personal preferences, but the culture in which they are situated at any particular time.

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The means that if we want to structure curriculum that allows students to interact, author, interchange and perform, we have to also design learning that allows them to do move between being Traditionalists, Gamers,

Networkers, and Producers – as learning occurs across all four of these domains. It is perhaps in school that students are most restricted to being traditionalists, leading some to assume these things are beyond their capability or not important. For example, a Traditionalist might see a 10-year-old making a video game so his blind grandmother can play with him (Takahashi, 2012) as outside the academic scope of learning, where as a Networker is well aware this is not just possible, but represents a fairly common occurrence.

## Who are you online?

Identity can be thought of the definition and evaluation of self in terms of a self-inclusive social category. It is constructed through a process of self-categorisation that accentuates attitudinal, emotional, and behavioural similarity to the group prototype, a collection of imagined features that best define the in-group in the salient social context. In a school context we then have to think carefully about the type of teacher we have in schools and what the learning ecology should be made of. While we have an abundance of Traditionalists who 'integrate' ICT, few schools have invested in people with specialised skills as Networker, Producer or Gamers yet when we look at the 'social-web', we see an abundant supply of both people and projects (clusters) working on these things.

## Re-organisation or change?

The Internet has become a movement to ever newer and more complex forms of *organisation*, *patterns* and *clusters*. These are having a dramatic effect on how, when, where and who we learn from. For example, school or professional development days are no longer the only place, time, method or people to learn from. The Internet has changed how this works. For example, I recently wanted to know how to remove a boiler from a 1960s espresso machine. My 11 year old wanted to learn how to play *Still Alive* a song from the video game *Portal*. YouTube provided tutorials for both of us to succeed – instantly.

Let's be honest: The Internet's also been overrun with inanity, and all of us are eating it up. ICT began with

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didactic skills training on limited toolsets such as Microsoft Office. More recently arguments made for students to acquire digital literacy skills to navigate the information/people nexus has collided with learning about digital society. Web 2.0 isn't an extension topic, one step beyond office automation (spreadsheets, word processing and so on) – it has produced an entirely new proposition resulting in new clusters of collaboration, and expert-networks. These things now hold vast amounts of essential tacit knowledge that cannot easily be explained in the workshops and training sessions. We have to enter these diverse global spaces as participants in order to learn and produce. If we can't do it because of a corporate firewall, we'll just use our smartphones and share our own 3G internet with others.

## How do we move around these learning-clusters?

Eli Pariser (2011) wrote a thought-provoking book on the impact of the 'filter bubble'. In *The Filter Bubble: What the Internet is Hiding from You* he tells us that in December 2009, Google began customising search results for each user. Instead of giving individuals the most broadly popular result, Google now predicts what you are most likely to click on. You have no control over the choices Google makes for you. You may have noticed this in Google's predictive (or suggestive) search bar. This isn't based on trying to find the best quality, but to present an enticement towards something Google thinks a person like you should see. This is symptomatic of the most significant shift to take place on the Web in recent years. It has serious ramifications. It makes it hard to move between clusters and reinforces our established patterns and belief. There is no 'universal search', which Pariser illustrates by asking two accountants, of the same age, living in the same city, doing the same job in the same office to search for 'BP'. The two people were offered completely different results.

It is plausible that a child in a wealthy city school will experience the Internet and information in profoundly different ways to another child from a poorer small rural community – or someone with a disability might have half the access of either of them. Being poor, disabled, unemployed or isolated has a profound impact on what the Internet offers you if set to 'automatic'. Pariser argues it is getting harder and harder to break out of our own filter bubbles, yet vast proportions of Internet users have little understanding of it, let alone the skills to overcome it.

**... I want to own or control my stuff, don't you?**

On the **individual** level, I want to own or control my stuff, don't you? That is a given that too many companies and institutions forget. I also want to belong to groups that make me feel great – and I want to do it in numerous

clusters. Jeff Jarvis, author of *Public Parts* (2011) wrote a great rule for this:

*Give us control and we will use it. The corollary: Don't give us control and you will lose us.*

The Internet allows us to jump clusters with ease – and in so doing we select our own identity and (if we choose) we can participate online and diversify, regardless of the rules, when we gain access to technology. Clusters hold essential genomes for our future.

We know cognitive intelligence exists for groups. Educational leaders decide upon the degree of teacher and student access they will allow – or run the risk of losing them to the networks. Programs that train the individual within a parenthesis – do not create the kind of 'genome' effect that smart-clusters do. It's exciting, empowering and useful to be a teacher connected to two thousand others – able to find information from people – not Google's algorithmic agenda.

Education systems should accept smart-networks exist and are unlikely to dissolve or re-configure themselves to suit existing organisational structures. They couldn't even

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if they wanted to. The people in them are willing to negotiate and induct new members; they are less willing to be ignored. The most obvious and accessible physical versions of these are the growing Teach Meets that occur all around the world. These are in fact a sub-set of the long running Bar Camp meetings. It is highly likely that schools have people in these smart-networks already, but leaders cannot access them through a top-down approach – but by participating and working inside them. The benefits are instant as these networks are agile and well informed. They produce new ideas, methods and solve problems constantly. Much of the innovation that eventually filters into systems has spawned from them. For example, Teach Meets, Flat Classroom and

Classroom 2.0 are well-organised, professional, inspirational and influential models that can be learned from. Most significantly, they are neither teacher-exclusive nor eLearning-exclusive groupings. They are the embodiment of how the world has learned to connect, share and collaborate online – and increasingly offline. Need to stay in a foreign city? Someone in your network will provide? Need an expert in American History? Want a Rock Star? – Skype them into your classroom . . . someone in your network will make it happen – instantly. This isn't eLearning as much as it is eLiving.

## The what, who, why and how of interaction

Smart-networks demonstrate collective intelligence. They hold within them the essential 'genomes' that are powering successful enterprises. A genome, in scientific terms is all of a living thing's genetic material. It is the entire set of hereditary instructions for building, running, and maintaining an organism, and passing life on to the next generation. When we apply this idea to smart-networks we begin to see the big difference between being part of a social-network and being part of a process-network. Stephen Downes has called this 'connectivism' where the network of people holds knowledge and understanding. More importantly these networks become process-networks, where they can solve problems and create new solutions with breathtaking speed and results.

## What lies beyond Traditionalist clusters?

Video-game players have solved a molecular puzzle that stumped scientists for years, and those scientists say the accomplishment could point the way to crowd sourced cures for AIDS and other diseases. It is not the size of the crowd that matters or that people online are smarter.

Gamers were given software that allowed them to do this virtually called *FoldIt*, over 250,000 gamers worked to solve the problem – further supporting the van den Beemt, Akkerman, & Simons (2011) views of interaction and how movement between clusters functions in digital society.

For more than a decade, an international team of scientists had been trying to figure out the detailed molecular structure of a protein-cutting enzyme from an AIDS-like virus found in rhesus monkeys. The game was designed for players to virtually manipulate these molecular structures. The virtual molecules follow the same chemical rules that are obeyed by real molecules. When someone playing the game comes up with a more elegant structure that reflects a lower energy state for the molecule, his or her score went up. If the structure requires more energy to maintain, or if it doesn't reflect real-life chemistry, then the score is lower. The scientist took the genomes in game-networks and applied them to a new problem.

They actually did it in less than 10 days.

## A post Web 2.0 future?

I'll be controversial here and say that I see blogs, wikis, podcasts and so on as *Traditionalist* technology tools. 'Web 2.0' is now a common term used as a cultural category describing some technologies, and excluding others – especially games. Inside education 'Web 2.0' has dominated professional development and conferences. Unsurprisingly, specific agendas, contexts and preferences have led to a taxonomy of tools. This is perhaps best illustrated by the various adaptations of Blooms Taxonomy where these tools are associated with learning-domains. Educators tend to migrate to some user-groups and reject others based on their experience. These user groups reflect subcultures rather than the way youth sees and uses the Internet out of school as independent learners. Closing this gap is hugely challenging and complex. Much of it hinges on individual teacher philosophy towards what their learning environment is. For example, It may well be they see the Internet as an Information space during a lesson; others see it as a pervasive social-space where they don't teach or provide resources at all. It is hard today to describe eLearning in Traditionalist terms and even harder to limit it.

George Siemens suggests:

. . . for learning institutions to be relevant in an era of life-long learning, they must move past the concept of start/stop learning. Learning is fluid. It impacts other areas of work and life. It's ongoing. Courses are start/stop.

School by nature and structure starts and stops every day. It is a familiar routine and pattern.

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To youth, knowing the **what, who, why** and **how** are essential for building their online identity and future. They are not using technology so much as inhabiting the clusters within it, learning the patterns and rules of how

to interact. If they leave school only able to read and write they will be rendered illiterate.

We cannot further integrate ICT into the lives of young people through the lens of Traditionalist eLearning or hope the next iPad will be better than the last. We cannot also reasonably expect students to warm to Traditionalist technology approaches in the classroom when they are immersed in far more diverse life experiences outside of it.

The good news is that one has missed the boat or needs to build an arc. We do need to remain open to ideas of evolving curriculum moving within more diverse clusters than ever before – in doing so the methods and routines of teachers and students will continue to change to reflect the maturation of the Internet and devices that access it. It is an exciting time, but one which is disruptive and poses significant challenges – not least towards ethics, social inclusion, accessibility and social-emotional dilemmas being created by this technological-storm.

We cannot afford to annex academic development from the changes the Internet has already brought to the lives of young people. If technology once brought the world to the classroom, the challenge today is how to *integrate* your classroom into the world, so that as routines, patterns and interactions emerge – students have a high level of evolve-ability whether they are going to enter the workplace, continue to further education – or perhaps invent a better Facebook. This will be brought about by interaction and more fluid movement between clusters and having a greater understanding of how knowledge is created, acquired and applied to very real world issues.

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**Dean Groom** is a staff member of Macquarie University Accessibility Services (MQAS). He is also the author of two books in the *Learning in a Changing World* series published by ALIA/ASLA – *Connect, Communicate, Collaborate* (with Judy O'Connell) and *Virtual Worlds*. Dean blogs at <http://deangroom.wordpress.com> and is the co-founder of the children's educational gaming network *Massively Minecraft* (<http://www.massivelyminecraft.org>).