
Social learning, 'push' and 'pull', and building platforms for collaborative learning

Introduction

This chapter explores three ideas that have recently been associated with each other in discussions of how contemporary internet architecture supports participatory and collaborative approaches to learning within non-formal and formal settings. These are the concept of 'social learning' as developed by John Seely Brown and Richard Adler (2008), the distinction between 'push' and 'pull' paradigms for mobilizing resources in pursuit of human purposes (Hagel and Brown 2005; Brown and Adler 2008), and the idea of building 'collaboration platforms' for social learning (Jarche 2005, 2010; Cross 2006; Brown and Adler 2008). As will become apparent in the course of this chapter, the kinds of new literacies discussed in previous chapters are related to social learning in a dynamic and reflexive way. To a large extent they are acquired via processes of social learning within participatory cultures. At the same time, however, these new literacies are integral to forms of ongoing social learning that will become increasingly important for living well in the foreseeable future. This chapter turns

attention to social learning and will provide a framework for discussing some empirical cases in Chapter 8.

Social learning

Multiple versions of social learning

Conceptions and theories of social learning are not new and, despite some ‘family resemblances’, differ significantly from one another and are used to do substantially different kinds of scholarly, research, and applied work. One broad line of social learning theory is commonly traced origins-wise from work in the late nineteenth century by Cornell Montgomery, and subsequently through the work of Neal Miller and John Dollard (e.g., 1941) in the 1940s, Julian Rotter (e.g., 1954) in the 1950s, and Albert Bandura (e.g., 1977) in the 1970s. This work draws on currents within fields like behavioural psychology, cognitive psychology, social cognition and clinical psychology. It is concerned with understanding modes of learning that build on observation of situated human behaviour rather than on direct involvement and, in some versions, is referred to as observational learning, and in others as imitation, vicarious learning, and modelling. Variants of this theory have been used to study disposition toward aggressive behaviour, social deviance, and criminal inclinations.

By contrast, Mark Reed and colleagues (2010) discuss in recent work social learning as a ‘normative goal’ within natural resource management and policy in the interests of environmental and ecological sustainability. From this perspective, social learning is understood as involving a change in understanding at the level of ‘social units’ (such as an organization, an institution, or a community of practice), that occurs through interaction where ‘the message is spread from person to person through social networks’ (ibid.: n.p.). This is a version of social learning as a process of proactivity for desirable outcomes. Indeed, Reed and colleagues see some of the roots of this version of social learning in Freire’s ‘conscientization’ pedagogy among Latin American peasants where participants collectively became ‘critically literate about their circumstances ... through collective reflection and problematization’ (ibid.).

The concept of social learning that we are interested in here shares some features with these other versions, but differs significantly from them. It has been developed over the past 20 years by John Seely Brown and colleagues (Brown et al. 1989; Brown and Duguid 2002; Brown and Adler 2008); most recently with particular reference to higher education learning

settings. It draws on diverse work done in sociocultural studies of language and learning, social cognition, cognitive science, socio-technical studies, media and communication studies, and other related fields since the 1980s. It also reflects and responds to important social, technical, economic, and institutional changes that have occurred during this same period.

Background to the present view of social learning

In a seminal paper published in the *Educational Researcher* in 1989 – prior to the widespread diffusion of concepts like ‘communities of practice’, ‘cognitive apprenticeship’, ‘situated learning and cognition’, and so on that were realized during the 1990s; and prior to the era of mass access to the internet and the emergence of the World Wide Web – Brown, Allan Collins, and Paul Duguid challenged some key assumptions integral to formal classroom learning on the basis of then emergent research. Foremost among these was the assumption that learning involves transmitting ‘abstract, decontextualized formal concepts’: treating knowledge as ‘theoretically independent of the situations in which it is learned and used’, and treating the context and activity in which learning occurs as ‘ancillary to learning’ rather than inseparable from and integral to what is learned (Brown et al. 1989: 32). Referring to examples like the difference between acquiring vocabulary in the normal course of situated everyday engagements outside of school and learning vocabulary via abstracted dictionary definitions in class (see Miller and Gildea 1987), Brown and colleagues (1989: 32) argued that ‘different ideas of appropriate learning activity produce very different results’. They suggested that by separating learning from ‘authentic’ activity grounded in physical and social contexts and situations, formal education largely defeats its goal of promoting ‘useable, robust knowledge’. In place of decontextualized abstracted knowledge transfer, they advocated approaches like cognitive apprenticeship (Lave 1988; Collins et al. 1989; Rogoff 1991) that ‘embed learning in activity and make deliberate use of the social and physical context’ (Brown et al. 1989: 31).

A key part of this early formulation involved the idea that knowledge is always an outcome of sociocultural practices in which people use mental and material tools, acquire and employ skills, and draw on forms of existing understanding and knowledge and belief, to undertake tasks and pursue particular purposes and goals – including *knowledge-specific* purposes and goals. The goals and tools they use, and the beliefs, understandings and extant knowledge they draw upon are not individual, private possessions but, rather, are social. They have been developed and refined over time by

other people pursuing purposes in socially recognized ways. Sometimes these are purposes aimed specifically at producing knowledge to inform wider purposes (e.g., in science or in problem solving or trouble shooting). Sometimes the purposes are routine, and knowledge grows out of them as an accumulation from the wider practice – for example, agricultural knowledge accumulates out of people routinely engaging in agriculture, as well as out of the research activities of people like agronomists and soil scientists. However, the concepts, tools, procedures, skills, beliefs, and so on, vary to a greater or lesser extent across different contexts and situations and groups of ‘practitioners’/communities of practice. This means that unless we have some idea of the procedures and variations involved in the particular practices and activities out of which knowledge is generated, we cannot possibly – other than by random coincidence – *have* the knowledge that the practitioners (producers and bearers of knowledge) and their kindred colleagues have. We certainly cannot do the same kinds of things with that knowledge as they do. It cannot *mean* to us what it means to them.

Brown, Collins, and Duguid (1989: 33) make the point with respect to conceptual tools (ideas, concepts, formulae, rules of thumb, interpretive frames, etc.) as follows:

Conceptual tools similarly reflect the cumulative wisdom of the culture in which they are used and the insights and experience of individuals. Their meaning is not invariant but a product of negotiation within the community. Again, appropriate use is not simply a function of the abstract concept alone. It is a function of the culture and the activities in which the concept has been developed. Just as carpenters and cabinet makers use chisels differently, so physicists and engineers use mathematical formulae differently. Activity, concept, and culture are interdependent. No one can be totally understood without the other two. Learning must involve all three. Teaching methods often try to impart abstracted concepts as fixed, well-defined, independent entities that can be explored in prototypical examples and textbook exercises. But such exemplification cannot provide the important insights into either the culture or the authentic activities of members of that culture that learners need.

If we want to *learn* deeply, we need access to the means, contexts, and tasks that are integral to generating knowledge, not simply to content transmission and abstracted activities of application like ‘essay writing’. To be sure, you can write ‘history essays’ without knowing anything about how historians work; but you cannot write *history*, *do* history, or acquire

historical knowledge – that is, *know* history. The significance and costs of separating learning from authentic contexts of knowing became increasingly apparent and better understood during the period between the publication of Brown, Collins, and Duguid’s paper, and the publication of Brown and Adler’s (2008) paper on social learning.

Three related factors are especially pertinent here.

- 1 During the intervening period rapid and far-reaching advances were made in theory and research relevant to understanding the nature and significance of social learning. This is the period during which concepts and theories of ‘situated cognition’, ‘situated language’, ‘literacy and learning’, ‘situated practice’, ‘social practice’, ‘communities of practice’, ‘cognitive and cultural apprenticeship’, moving from ‘being a novice’ to ‘becoming an expert’, or from being a ‘peripheral participant’ to a ‘full participant’ though processes understood in terms of concepts like ‘legitimate peripheral participation’, ‘guided participation’, ‘participatory appropriation’, and the like, became established in research on learning (see, among many other examples, Lave and Wenger 1991; Rogoff 1991; Chaiklin and Lave 1996; Cook and Brown 1999; Wenger 1999; Gee 2003, 2007; Sawyer 2006).
- 2 At the same time, processes of structural change beginning in the 1960s and 1970s escalated and impacted dramatically on social institutions and economic life in modernized Western societies. As noted in Chapter 1, the downscaling of the welfare state and consequent restructuring of bureaucratic institutions upped the ante for citizens across the social spectrum to develop new ‘institutional epistemologies’ by learning how restructured organizations function. Keeping up with institutional change was an important catalyst for the related ideals of lifelong learning, learning how to learn, and transferring knowledge and training. The growth of global outsourcing in manufacture and services, the consequent loss of many traditional jobs, the increased significance attached to symbolic analytic work, ‘higher order skills’ (see Gee et al. 1996, for an overview), and increased skill and knowledge demands on frontline (formerly routine production, ‘unskilled’, and ‘semi-skilled’) workers, raised the bar for job-related knowledge and understanding, as ‘initiative’, ‘entrepreneurial spirit’, ‘troubleshooting ability’, and increased demands for ‘innovativeness’ and ‘value-adding capacity’ became the order of the day. These new ‘requirements’ placed intolerable strain on ‘low level knowledge’ and ‘mere information’. Competitive edge and, even, economic viability, within an organization’s workforce increasingly called for ‘the kinds of thinking skills that allow one to be

an “expert novice” ... expert at continually learning anew and in depth’ (ibid.: 164). These requirements transcend learning as ‘content’, but require learning within contexts, situations, and practices that *ground* processes, procedures, purposes, and tasks.

Similarly, the nature of technological and global changes during the past two decades has greatly increased the complexity of many everyday *systems* – ranging from organizations to more or less routine processes (such as locating stock or arranging delivery). This has upped the ante for ‘systems thinking’ and ‘systems understanding’ on the part of employees/participants/members of organizations and for practices. What looks rational from one perspective or standpoint (individual, local, immediate) may be irrational or damaging from the standpoint of a system as a whole. Hence, participants need to understand their places and roles within such systems, and to understand ‘the workings of the system as a whole, as well as its interrelations with other complex systems’ (ibid.). Unless your knowledge and understanding here is grounded in appropriate kinds of activities and procedures, it is likely to be partial, inaccurate, fragile, and fallible. It is difficult to understand your place and role within a system without the opportunity to take on an identity and engage in activity within the system. Moreover, without such experiences it is difficult to recognize that there are such things as systems thinking and systems understandings to be pursued and mastered. Given the contemporary significance of competent systems thinking within everyday life it is no coincidence that one of the most (in)famous internet memes, Leeroy Jenkins (Wikipedia 2010k), celebrates an individual’s gross lapse in acting appropriately as part of a system.

- 3 Developments in new technologies, and especially in the burgeoning reach, power, and collaborative potential of the internet, have generated diverse contexts and opportunities for situated, activity-based learning of kinds that diverge strikingly from conventional classroom learning approaches. (Of course, new technologies have also been widely appropriated for ‘business as usual’ approaches to learning.) These include the kinds of non-formal learning within contexts of participation addressed at length in previous chapters. Everyday grounded experience of such learning on the part of many people of all ages and from all walks of life means that there is by now a large, wide, and diverse experiential base from which to refract, understand, and compare varying learning modes to which we are exposed within different cultural contexts. These same developments coincide with frequent policy statements about

requirements for effective participation within an information society and/or a knowledge economy, calling for twenty-first-century skills, enhanced creative and innovative prowess, sensitivity to the importance and role of design, and so on.

Social learning, multiple learning modes, and access to people

In ‘Minds on fire: Open education, the long tail and learning 2.0’, Brown and Adler recognize that if populations are to thrive in the foreseeable future they will increasingly depend on the availability of ‘robust local eco-systems of resources [that support] innovation and productiveness’ (2008: 17). Being able to produce in sustainable ways, and to innovate in ways that generate new resources and products from what already exists rather than digging further into scarce resources will be especially important. Ability to supply innovative and efficient creators and producers, and to support their ongoing learning and creative activity is, then, a crucial component of robust resource eco-systems.

To date, societies have depended on formal higher education systems to support such learning. But this option seems to be running out of time. Brown and Adler observe that the sheer demand worldwide for ongoing learning of the kinds required for future viability and sustainability likely cannot be resourced on the conventional bricks and mortar, pre-set courses, teachers and administrators model. Demand and resource availability are in tension. Furthermore, and equally problematically, even if the resources *were* available to meet the numerical demand, current approaches to teaching and learning are out of sync with what is needed to prepare populations for their future lives. Conventional higher education courses and credentials have proved to be poor and inefficient performers in terms of innovation and productiveness. The same emphasis on decontextualized and abstracted content transmission that characterizes formal education at the school level likewise dominates higher education.

By contrast, as we have seen, innovation and productiveness are often conspicuously *present* among participants in popular affinities, who learn and create and innovate in the company of others within grounded contexts of practice (of all kinds). Every single instance of modding a video game, mashing up web services and applications, or designing and creating an artifact for a virtual world is an innovation, and mashups are paradigms of adding value to existing resources. Moreover, the kinds of learning that mediate and accompany such forms of productiveness (think Wikipedia, mobile device apps, serviceware mashups) do not presuppose bricks and

mortar and formal courses, although some of them (think Facebook) famously emerge from non-formal activities among campus-based learners. None of this is to imply that innovation and productiveness cannot and do not issue from conventional higher education institutions. A proportion does. But it is often highly resource-intensive, confined to small numbers of people, proprietary, and exclusive. Future living requires a much wider diffusion and at many more diverse levels, since the innovations required for living well are often everyday and ‘simple’: what is important is nurturing the innovator and creative producer in the every person, as well as in the lab scientist.

Such considerations bespeak the significance and efficacy of social learning as conceived by Brown and Adler, particularly as supported and amplified by collaborative web architecture and platforms. Before outlining their account of social learning, we will briefly mention two important points they make by way of background.

First, Brown and Adler say that because web architecture now provides a sophisticated *participatory* medium that is widely used for purposes of *sharing*, it can support *multiple modes* of learning (2008: 18). For example, many institutions make their course materials and other educational resources available for free use by anyone via initiatives like the Open Educational Resources movement (e.g., Oercommons.org) – thereby supporting learning in non-formal/non-enrolled modes in addition to their formal enrolment mode. More generally, this same architecture means that students enrolled in an institution can often bring their online social networks to study groups, discussion groups, and debates that arise organically on campus (ibid.: 24). Insofar as the ‘real’ educational goal is to support the kind of learning that enhances innovation and productiveness, it is ultimately of less importance what mode it occurs in than the fact that it occurs at all.

Second, Brown and Adler claim that the kinds of practices supported by Web 2.0 urge us to see the internet more in terms of offering access to other people than (simply) in terms of providing access to information. Today’s internet makes it increasingly easy ‘for people with common interests to meet, share ideas and collaborate in innovative ways’ (ibid.: 18). Of course, the importance of shifting attention toward the way the internet affords access to other people was evident to some commentators prior to the flowering of Web 2.0. For example, Michael Schrage argued that viewing the computing and communications technologies of the internet through an information lens is ‘dangerously myopic’. According to Schrage (2001: n.p.):

While it is true that digital technologies have completely transformed the world of information into readily manipulable bits and bytes, it is equally true that the genuine significance of these technologies isn't rooted in the information they process and store.

A dispassionate assessment of the impact of digital technologies on popular culture, financial markets, health care, telecommunications, transportation and organizational management yields a simple observation: The biggest impact these technologies have had, and will have, is on relationships between people and between organizations.

The so-called 'information revolution' itself is actually, and more accurately, a 'relationship revolution'. Anyone trying to get a handle on the dazzling technologies of today and the impact they'll have tomorrow, would be well advised to re-orient their worldview around relationships.

(original emphasis)

Brown and Adler filter this observation through their particular interest in learning. They say that 'the most profound impact of the Internet, an impact that has yet to be fully realized, is its ability to support and expand the various aspects of social learning' (Brown and Adler 2008: 18).

Reflection and discussion

- Using an academic literature search engine, such as Scholar Google or the Web of Science, identify some accounts of 'social learning' that you think are informed by different discipline areas, or that you would describe as different 'paradigms' of social learning.
 - What are they?
 - What discipline or disciplines do you associate them with?
 - What are some of the key differences between them?
 - What do you think are some significant educational implications of these differences?
- Many writers and researchers have drawn a distinction between 'acquisition' and 'learning'.
 - Spell out how you understand this distinction.
 - How would you describe the differences and/or similarities (if any) between 'acquisition' and 'social learning'?

Social learning, participation, and learning to be

By ‘social learning’, Brown and Adler mean, in the first place, learning based on the assumption that our understanding of concepts and processes is constructed socially in conversations about the matters in question and ‘through grounded [and situated] interactions, especially with others, around problems or actions’ (2008: 18). From a social learning perspective, the focus is more on *how* we learn than simply on *what* we learn. The emphasis shifts from ‘the content of a subject to the learning activities and human interactions around which that content is situated’ (ibid.). That is, the emphasis shifts from what Brown and Adler call a ‘Cartesian’ view of learning as a matter of getting content into heads – on the model of providing private minds with raw materials from which to produce thought and knowledge – to seeing learning as a matter of involving individuals in processes and practices within which knowledge, understanding, and ideas are produced by participants as *social* accomplishments. The social view of learning and knowledge proceeds from the same basis as the practice approach to social theory discussed in Chapter 2. For example, with Wittgenstein, this orientation shares the view that there is no such thing as a private language. Rather, language – and hence mind, and hence ‘I’, and hence ‘knowledge’ – is *public*: in the ways that Gee (1992) speaks of ‘the social mind’. With Freire (1974/2007: 124), it shares the view that ‘it is the “we think” which establishes the “I think” and not the contrary’. It is within and through shared practice that meanings – significance – ideas, categories, evidence, tools, tests, techniques, and all the other things that *constitute* knowledge come into being. And, as mentioned earlier in this chapter, it is only within contextualized activity – learning in context – that we can achieve ‘nuanced’ understanding and knowledge, since knowledge is constituted in practice. What we learn is a consequence of how we learn, and social learning has a very different ‘take’ from traditional formal learning on the *how*.

Social learning also puts the emphasis squarely on ‘learning to be’ (Gee 2007: 172; Brown and Adler 2008: 18). According to Brown and Adler (2008: 19):

mastering a field of knowledge involves not only ‘learning about’ the subject matter but also ‘learning to be’ a full participant in the field. This involves acquiring the practices and the norms of established practitioners in that field or acculturating into a community of practice.

This underpins the efficacy of social learning for promoting an ideal of ‘deep learning’ (Gee 2007), in contrast to the kinds of surface learning

that so often result from formal education approaches based on driving decontextualized content into heads in pre-determined sequences. Like ‘social learning’, deep learning means different things to different people. The distinction between deep and surface learning is usually traced to a phenomenographic investigation of learning reported by Ference Marton and Roger Säljö (1976) and is often touted as an approach to study or a critical thinking method. In our present context, however, we are more concerned with deep learning as a *qualitative kind* of learning rather than a procedure or approach. That is, we are interested in social learning as a broad approach to learning that has particular efficacy for promoting learning that can be described as ‘deep’ because it has different kinds of affordances, consequences and potentials when compared to surface learning. This is deep learning in a sense that people like Howard Gardner (1991) identify as all too often missing in cases of ‘successful’ students. Drawing on extensive research from the 1960s to the 1990s, Gardner provides case after case of school and university students

who exhibit all the overt signs of success – faithful attendance at good schools, high grades and high test scores, accolades from their teachers – [yet] typically do not display an adequate understanding of the materials and concepts with which they have been working; including students who receive honor grades in college-level physics courses [but] are frequently unable to solve basic problems and questions encountered in a form slightly different from that on which they have been formally instructed and tested.

(ibid.: 3)

By ‘deep learning’, as against the kind of surface learning reflected in the myriad examples of the kind Gardner refers to, Gee means learning that can generate ‘real understanding, the ability to apply one’s knowledge and even to transform that knowledge for innovation’ (Gee 2007: 172). He argues that if we want to encourage deep learning, it is necessary to move beyond ‘learning about’ and, instead, focus on ‘learning to be’ (ibid.; our emphasis). He claims that deep learning requires that learners be ‘willing and able to take on a new identity in the world, to see the world and act on it in new ways’ (ibid.). In part, this points to the *materiality* and *situatedness* of deep learning, where ideas and ‘content’ are grounded in specific tasks, interactions, purposes, actions, outcomes, and the like. In addition, however, if one is learning to be an historian, or a music video creator, it is necessary to see and value things about the world and one’s work or activity in the ways that historians and music video creators do. Among other things, this is because

in any domain, if knowledge is to be used, the learner must probe the world (act on it with a goal) and then evaluate the result. Is it 'good' or 'bad', 'adequate' or 'inadequate', 'useful' or 'not', 'improvable' or 'not'?

(Gee 2007: 172)

Gee argues that this involves learners developing the kind of value system that Donald Schön (1983) calls an 'appreciative system' as a basis for making such judgements. Appreciative systems

are embedded in the identities, tools, technologies, and worldviews of distinctive groups of people – who share, sustain, and transform them – groups like doctors, carpenters, physicists, graphic artists, teachers, and so forth through a nearly endless list.

(ibid.: 172)

The efficacy of social learning is predicated on the fact that it immerses learners in processes of induction into the 'ways' of becoming 'full practitioners' and acquiring their appreciative systems, as well as getting hands-on practice with their mental and material tools within authentic contexts in which they are employed by successful practitioners from the outset. As Brown and Adler (2008: 20) put it:

In a traditional Cartesian educational system, students may spend years learning about a subject; only after amassing sufficient (explicit) knowledge are they expected to start acquiring the (tacit) knowledge or practice of how to be an active practitioner/professional in a field (Polanyi 1966). But viewing learning as the process of joining a community of practice reverses this pattern and allows new students to engage in 'learning to be' even as they are mastering the content of a field. This encourages the practice of what John Dewey called 'productive inquiry' – that is, the process of seeking the knowledge when it is needed in order to carry out a particular situated task [a.k.a. 'just-in-time-and-just-in-place,' which is a hallmark of non-formal learning in affinity spaces of the kinds discussed in earlier chapters].

By way of contrast, Brown and Adler consider the kind of induction into non-formal social learning available via participation in Wikipedia, which resonates closely with our discussion in Chapter 5. They focus on how the process of becoming 'a trusted contributor' to Wikipedia with administrative access rights to 'higher level editing tools' than those available to rank and file contributors 'involves a process of legitimate peripheral participation that is similar to the process in open source software communities' (Brown

and Adler 2008: 19). Within open software communities beginning/novice programmers start working on ‘relatively simple, noncritical development projects’ (like building or improving printer drivers; *ibid.*: 19). As and when they have displayed capacity ‘to make useful contributions and to work in the distinctive style and sensibilities/taste of the community’ they may be invited to participate in ‘more central projects’, and the best of the best are invited to work on the system’s kernel code (*ibid.*: 19). In the case of Wikipedia, the process of enculturation that can lead to administrative rights is mediated by access – via the History and Discussion functions – to non-formal mentoring, since the openness of the process exposes to anyone who chooses to study and learn from it the process by which content is discussed, contested, negotiated, and so on. This enculturation process enables ‘a new kind of critical reading – almost a new form of literacy – that invites the reader to join in the consideration of what information is reliable and/or important’ (*ibid.*: 19) from the very outset of contributing.

Some more everyday examples of social learning

While Brown and Adler foreground the potential of Web 2.0 platforms and services to support social learning, it is important also to consider examples that are primarily face to face, local, and may presuppose little or no internet access whatsoever. These, after all, are the original spaces of social learning.

Social learning in Knowledge Producing Schools

One example of a broad social learning approach within a formal context of school-based learning is presented by the Knowledge Producing Schools (KPS) initiative that has evolved over the past decade in a cluster of Australian schools (Bigum 2004; Lankshear and Knobel 2006; Rowan and Bigum 2010).

This initiative recognized that formal education is based on a model of consuming knowledge – a legacy of the Cartesian view as described by Brown and Adler. To the extent that school-based learning engages in production, in the form of essays, projects, reports, and the like, this is typically of a pseudo or ‘fridge door’ variety: something written for a teacher to grade or to adorn a fridge door for a day or two in the absence of an authentic audience for an authentic product (Bigum 2004: 63). The Knowledge Producing Schools initiative was conceived on the basis of approaching the use of new media in schools from the standpoint of relationship technologies: means for mediating relationships with a wider community in the manner identified above with reference to Schrage (2001). It was also based in part on the idea that in an age of boundless information, communities need to

develop ‘point of view’ in order to use information well in decision-making, policy development, and building identity. From these ingredients emerged the idea that schools could enter relationships with organizations, groups, and community leadership to produce knowledge artifacts that would be authentically useful for and usable by their end users. Right from the start, the work to be done was negotiated between the schools and the end users. Moreover, the intended recipients were also seen as sources of expertise on matters of quality, usefulness, standards, relevance, etc., that an artifact would have to honour in order for it to be acceptable. Furthermore, the community at large was viewed as a source of relevant expertise to be called upon by the schools in the knowledge production process. Members of the community could provide learning support in matters as various as using specialized tools to industry standards in procedures like video editing and for validating perspectives and material integral to developing an informative point of view.

In a typical example, groups of grade 6 students worked in collaboration with the local cattle sale yards to produce a documentary about the history of the sale yards for a Beef Expo in 2003. They video-interviewed representatives of different sectors in the cattle industry, recorded *in situ* footage of activities, provided voice-overs and bridges between sequences, and edited the components to produce the documentary as a CD-ROM. This CD-ROM was used at an international beef festival and by the local council to promote the region. The work proceeded from a view of education as a ‘whole of community responsibility’. It contracted deep and committed relationships between the school and the beef industry ‘community’. Moreover, the entree to digital visual media work came via a student teacher with a sibling who was employed in digital video production and who provided free expertise. While the Knowledge Producing Schools projects did not necessarily involve new literacies in the sense we are concerned with here, many of them *did* involve processes of learning to use new media within ‘authentic’ contexts of productive use. This kind of social learning, grounded in strategic relationships aiming at knowledge production from particular points of view within cultures of participation, and on sharing and building upon distributed expertise and collective intelligence would be enhanced exponentially by access to various collaborative web services and resources.

Passion, persistence, and success through social learning

For reasons that will become apparent a little later when we address the theme of the contemporary paradigm shift from ‘push’ toward ‘pull’, *passion* is a recurring theme throughout Brown and Adler’s discussion of

how Web 2.0 resources can support multiple learning modes and routes toward (higher) educational experiences that are conducive to building capacity for innovation and productiveness. In relation to non-formal participatory learning settings, they note that many Wikipedia articles begin from the efforts of passionate amateurs. With respect to more formal settings they identify the way that online participatory cultures both respond to and stimulate passion for learning. They affirm that for practically any topic a student may be passionate about ‘there is likely to be an online community of practice of others who share that passion’ (2008: 28). From the other direction, they argue that finding and joining communities that ignite passion can ‘set the stage’ for social learning experiences where learners/ students can acquire ‘both deep knowledge about a subject (“learning about”) and the ability to participate in the practice of a field through productive inquiry and peer-based learning (“learning to be”)’ (ibid.). Such passion becomes, in effect, an engine for learning under contemporary conditions of rapid change because it no longer makes good sense simply to count on the kind of long-term motivation that inclines people to learn something now on the assumption that it may come in useful later. What is *also* and *increasingly* required is the kind of passion that motivates ‘in the now’ to pursue mastery of what serves in the ‘now’ or, at most, will serve ‘in the near’, and to maintain this passion as the driving force for surfing change and staying in touch.

This theme is taken up and extended in very interesting and important ways by Elisabeth Hayes and James Gee’s account of women becoming involved in design, production, and participating in learning communities within the context of *The Sims* gaming affinities (Gee and Hayes 2010). In the context of a much wider and richer discussion they advance cases and arguments highly relevant to the line we are running here – following Brown and colleagues – on social learning, ‘push’ and ‘pull’, and building learning platforms to support grounded learning of kinds that can generate and nurture creative applications of knowledge, innovation, and productiveness.

At the heart of Gee and Hayes’ discussion is what they see as the significance of ‘grit’, understood as a disposition that combines ‘persistence plus passion’ (ibid.: 67) for experiencing success under current and foreseeable social, economic, ‘globalizing’, and epistemic conditions. Their account of ‘grit’ is a variation on the view advanced by Angela Duckworth and colleagues (2007) as perseverance and passion for long-term goals. ‘Perseverance’ has connotations of endurance over the long haul for some long-term benefit, but where intrinsic drive and motivation might not be strong at the time. By contrast, ‘persistence’ has connotations of sticking at something not simply on account of achieving external goals, but (also) ‘because of [one’s] passion

for the area or domain in which the problems reside' (Gee and Hayes 2010: 67). The argument, in brief, is that the ability to innovate – like creativity more generally – presupposes *mastery* within an area or domain. Getting 'on top of' a practice enables us to see opportunities for new angles; for expanding aspects of the practice in new directions; for creating potentially fruitful 'hybrids' of elements within a practice or with components from other practices; or for doing things that may be similar in most respects to what people already do, but have not yet done. Pursuing mastery requires 'thousands of hours of practice' (ibid.) in addressing issues and problems, in trial and error, learning how others do things, and so on. In short, mastery presupposes 'persistence'. Persistence, in turn, requires passion '[o]therwise people give up' (ibid.: 67).

Gee and Hayes explore in depth a range of cases of girls and women who have learned to become *Sims* designers and who have experienced success within the larger *Sims* community. They possess 'grit' in abundance. Their experiences inform us about some of the ways people become passionate about an interest, and how participating in 'passionate affinity groups' is crucial to growing passion. Their examples are not of lone rangers but, rather, of social learners whose gritty dispositions and successes partly reflect personal idiosyncrasies, but have developed and thrive within spaces and under conditions of participatory cultures. Gee and Hayes draw on cases of 'typically untypical' (ibid.: 79) informants like Tabby Lou, Jade, Izazu, and EarthGoddess to develop new elements of a theory of social learning.

Tabby Lou is a grandmother with a health condition that took her out of the workforce and confined her to home. She learned to play *The Sims* initially in the context of visits by her daughter and grandchildren. One granddaughter said she would like a purple potty to put in her *Sims* houses, and Tabby Lou decided she would create one, even though she knew nothing about the process. Tabby Lou began exploring and found tools available for doing the job, but tools she did not understand and had to learn to use. She then found *Sims* community resources that could help her, but that going forward meant seeing herself as a budding designer, on the periphery of the community, in need of community support to meet her initial goal. This drew her in and 'reconstituted' her as a member of the community, interacting with others and pursuing her goals. But as with the case of Maguma discussed in Chapter 5, Tabby Lou's initial interest began hooking her into a new identity: from the identity space of a grandmother wanting to learn how to create a purple potty from the fringes of a games (design) community, she began to start seeing herself as a designer and a member of a community 'that brought her status, support, and friendship' (Gee and

Hayes 2010: 89). She now wanted to become the designer she could be. This in turn required endless further hard work, but ‘grit’ prevailed here and, in due course, was reinforced and rewarded by experiencing genuine success and recognition as a *Sims* designer – rewarded with ‘millions of downloads and hundreds of thousands of thank-yous’ (ibid.: 90).

On the basis of cases like Tabby Lou, Gee and Hayes advance a ‘purple potty’ theory of how passion emerges and grows, in a trajectory, as part of a larger theory of social learning that can lead to successful innovation and creative appropriations and applications of knowledge. They summarize the trajectory of passion as follows:

Have a strong desire to do something †identity and community ‡find the needed tools †gain grit in the service of doing it †identity and community [a new iteration] †get hooked on the learning †transfer grit to the learning itself †become successful (ibid.: 89; † signifies phases and iterations)

The examples provided by Gee and Hayes’ informants go way beyond ‘mere participation’. At one level they are examples of *success*: they exemplify the possibilities inherent in non-formal social learning for ‘making one’s way’ in the sense of attaining social goods. While Tabby Lou herself, and many others like her, do not aim to make money from her designs, there is no reason other than personal preference why she could not. Hers is exactly the same process and trajectory that many successful entrepreneurs, apps creators, and others have followed for making a livelihood. It is one way – and an increasingly common one – to build a career. At a different level, however, cases like Tabby Lou’s provide examples of full-fledged *collaboration* in learning. As EarthGoddess, another of Gee and Hayes’ informants – who may stand in for countless others – puts it with respect to how she learned to create (successful) content:

Having access to patient people who have been there and done that (and are generous enough to share what they know with me) has ... been instrumental. I think there’s always a time when you get hung up [when your own efforts at trial and error and tinkering are not enough] and need to ask someone with the experience.

(ibid.: 101)

Esteem for support provided and a will to reciprocity incline designers like Tabby Lou and EarthGoddess to become mentors, to provide help, and to *lead* within the community, as they continue learning themselves and interacting with those who learn from and with them.

Reflection and discussion

Gee and Hayes (2010) spell out what they call their *theory* of the trajectory of passion (their ‘purple potty’ theory).

- Why do you think they give it the status of a *theory*?
- What *counts* as a theory? What do theories *do*? When can we reasonably describe something as being a *theory*?
- What *theoretical* work does Gee and Hayes’ theory of the trajectory of passion do?
- How could you use this theory in *education*?

Paradigm shift: from ‘push’ to ‘pull’

Having identified the potential of collaborative web architecture to support social learning mediated by participation in online communities of practice, Brown and Adler (2008: 30) conclude their discussion of social learning by arguing that this potential coincides with the need for a new approach to learning that increasingly moves from the familiar ‘push’ or ‘supply’ model toward a ‘demand’ or ‘pull’ approach. They claim that a demand-pull approach to learning ‘shifts the focus’ from pushing pre-determined curriculum content contained in (learning) programs to ‘enabling participation in flows of action where the focus is both on “learning to be” through “enculturation into a practice” and on collateral (or consequential, “spin off”, by-product) learning’ (ibid.).

Their argument builds on ongoing work in a complementary area by Brown and colleagues (Hagel and Brown 2005; Hagel et al. 2010). This began with John Hagel and Brown’s (2005) original working account of an emerging paradigm shift in our everyday thinking about how to mobilize resources for getting things done, and has latterly evolved into a substantive theory of how to use ‘pull’ as a strategic approach to achieving innovation, sustainability, and success at both institutional/organizational and personal levels (Hagel et al. 2010). Their work has important implications for thinking about education and learning.

Throughout the twentieth century the dominant common sense model for mobilizing resources was based on a logic of ‘push’. Resource needs were anticipated or forecast, budgets drawn up, and resources pushed in advance to sites of anticipated use so they would be in place when wanted. This ‘push’ approach involved intensive and often large-scale planning and

programme development. Indeed, Hagel and Brown see programmes as being integral to the ‘push’ model. They note, for example, that in education the process of mobilizing resources involves designing standard curricula that ‘expose students to codified information in a predetermined sequence of experiences’ (2005: 3). Conventional education, in fact, is a paradigm case of the push model at work.

Hagel, Brown, and Davison (2010: 1) speak of a ‘big shift’ currently in train that is driven by ‘new technology infrastructure’ and changes in public policy that are responding to rapid social, cultural, and economic transformations occurring on a global scale. Demands for innovation, sustainability, effective responses to rapid changes in knowledge, production, goods and services, etc., are bringing on ‘a fundamental reordering of the way we live, learn, socialize, play and work’ (ibid.). This ‘big shift’ entails a move from the familiar ‘push’ paradigm toward an emergent ‘pull’ paradigm as the conditions for ‘being successful’ change.

In an early statement, Hagel and Brown argue that we’re beginning to see signs of an emerging ‘pull’ approach within education, business, technology, media, and elsewhere, that creates *platforms* rather than programmes: platforms ‘that help people to mobilize resources when the need arises’ (2005: 3). More than this, the kinds of platforms we see emerging are designed to enable individuals and groups to do more with fewer resources, to innovate in ways that actually create new resources where previously there were none, and to otherwise add value to the resources to which we currently have access. Pull approaches respond to uncertainty and the need for sustainability by seeking to expand opportunities for creativity on the part of ‘local participants dealing with immediate needs’ (ibid.: 4). From this standpoint, uncertainty is seen as creating opportunities to be exploited. According to Hagel and Brown (ibid.: 4):

[Pull models] help people to come together and innovate in response to unanticipated events, drawing upon a growing array of highly specialized and distributed resources. Rather than seeking to constrain the resources available to people, pull models strive to continually expand the choices available while at the same time helping people to find the resources that are most relevant to them. Rather than seeking to dictate the actions that people must take, pull models seek to provide people on the periphery with the tools and resources (including connections to other people) required to take initiative and creatively address opportunities as they arise ... Pull models treat people as networked creators (even when they are customers purchasing goods and services) who are uniquely positioned to transform uncertainty

from a problem into an opportunity. Pull models are ultimately designed to accelerate capability building by participants, helping them to learn as well as innovate, by pursuing trajectories of learning that are tailored to their specific needs.

In their most recent statement, Hagel, Brown, and Davison (2010) have described and theorized ‘pull’ as a strategy in ways resonant with Gee and Hayes’ account of learning and success mentioned above. They identify three levels of ‘pull’: access, attract, and achieve. At the base, ‘pull helps us find and *access* people and resources when we need them’ in a manner analogous to ‘searching’ (ibid.: xiv). At the next level, pull involves the ability to *attract* people and resources that are relevant to and important for achieving our goals and purposes – especially people and resources we didn’t previously know existed. As mentioned in Chapter 6, this ability is enhanced by the kind of ‘serendipity’ enabled via weak ties in social networks. The third level of pull is reminiscent of Gee and Hayes’ concept of grit, and is ‘the ability to pull from within ourselves’ the necessary ‘insight and performance’ needed to ‘more effectively *achieve* our potential’ (ibid.). When viewed from the standpoint of a journey (or pull) toward achievement or success – e.g., involving innovation, productiveness, viability, competitive edge – ‘pull’ can be understood in terms of ‘trajectory’, ‘leverage’, and ‘pace’ (ibid.: x). Pull involves creating and putting in place in a systematic way a viable *trajectory* – the direction in which we are heading; passion is crucial here. Hagel, Brown, and Davison advocate making our passions our profession – sufficient *leverage* (mobilizing other people’s passions and efforts), and the right kind of *pace* (making progress at the appropriate rate for doing best in prevailing conditions and contexts).

From this perspective, *platforms* can be seen as combinations of components and resources that help us to access, attract, and achieve: to connect with others, optimize the likelihood of serendipity, and persist with our passions (ibid.: xi). As we have seen, Brown and Adler (2008: 30) argue that a pull approach within higher education involves ensuring students have access to rich learning communities established around practices – just as non-formal learners have within spaces of popular cultural participation. A ‘pull’ approach assumes ‘passion-based learning’ that is ‘motivated by the student either wanting to become a member of a particular community of practice or just wanting to learn about, make, or perform something’ (ibid.). Under these conditions, resourcing learning is primarily a matter of building *platforms* to support (collaborative) social learning. Their focus is important for our argument in the final chapter, where we want to move from talking about new literacies and social learning in the kinds of

non-formal settings that have dominated our discussion thus far to talking about more formal contexts.

Building platforms for social learning

The idea of a ‘pull’ approach to learning has been explored from different perspectives. Jay Cross (2006) applies it to informal ‘emergent’ learning within workplaces in pursuit of value-adding innovation and productivity. In place of ‘push’ approaches via training programmes, Cross advocates paying greater attention to building and nurturing ‘learnsapes’ – learning ecologies – ‘where workers can easily find the people and information they need’ and ‘where learning is fluid and new ideas flow easily’ (ibid.: 41). This involves creating learning platforms that enable workers to make fast and effective learning responses to needs and challenges as they arise. Within corporate/company contexts such platforms may include ‘expertise locators’ that map likely go-to people and rich information portals within and beyond the organization; they may build on workplace design decisions to create spaces that encourage ‘productive conversation’ and establish guidelines for ‘conversing productively’ (ibid.: 29). More generally, platforms for collaborative learning mobilize ‘community, storytelling, simulation, dynamic learning portals, social network analysis, expertise location, presence awareness, workflow integration, search technology, help desks ... mobile learning, and co-creation’ (ibid.: 41).

In Cross’s account, ‘learning to be’, ‘practice’, and ‘communities of practice’ are largely assumed, because participants share a work culture and are already ‘in’ a practice. By contrast, Brown and Adler (2008) approach the issue of building learning platforms from the standpoint of social learning possibilities within formal higher education that has long been dominated by content hived off from the kinds of practices in which such content originates and/or finds its natural home.

Consequently, Brown and Adler are interested in the question of how to build platforms for learning that positively enable students to participate in ‘flows of action’ where they get ‘[enculturated] into a practice’ (2008: 30). Such platforms will involve varying mixes of access to physical and virtual environments, depending on local contingencies, but always on the basis that these environments and resources provide opportunities for learners/newcomers to participate in authentic practices with access to support and guidance from experienced and expert practitioners – scholars, researchers, and other disciplinary and technical professionals. The resource-intensive nature of this approach entails a special place and significance for access

to *virtual* environments and resources available on- and offline. Building the virtual dimension of learning platforms may include mobilizing open courseware made available through initiatives like the Open Educational Resources movement; identifying relevant scholarly websites and networks; enabling online and/or ROM-based access to powerful instruments, simulations, and other kinds of virtual environments; accessing selections from the myriad ‘niche communities based around specific areas of interest in virtually every field of endeavour’ (ibid.: 31); accessing online technical forums associated with (categories of) products and services; and creating or joining purpose-built collaborative spaces using Web 2.0 resources and services (e.g., wikis, nings, academic social networking sites); providing ‘starter directories’ or indices of potentially relevant resources on sites like YouTube.com; among many other options.

As exemplars of virtual environments and resources that add community to content, Brown and Adler cite the Faulkes Telescope Project that enables UK students to collaborate with working astronomers (Faulkes-telescope.com), and Brown University’s Decameron Web (Brown.edu/Departments/Italian_Studies/dweb/index.php), which gives students ‘the opportunity to observe and emulate scholars at work’ (Brown and Adler 2008: 24).

Reflection and discussion

- How would you distinguish between providing *programmes* for learning and providing *platforms* for learning?
- How would you describe the relationship between ‘learning’ and ‘education’?
- Discuss the statement: ‘There will always necessarily be some amount of “push” – perhaps, even, quite a lot – involved in educating people/being educated’.
- Discuss the claim that ‘some amount of “push” will always be involved in becoming literate’.

In Chapter 8 we describe an impressive initiative that builds social learning approaches into formal education in the USA at the grade 6–12 level, and outline our own attempts to integrate social learning into Master’s-level study within teacher education.