The Open University

Innovating Pedagogy 2012

Exploring new forms of teaching, learning and assessment, to guide educators and policy makers

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Open University Innovation Report 1

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Executive summary

This series of reports explores new forms of teaching, learning and assessment for an interactive world, to guide teachers and policy makers in productive innovation. The first report proposes ten innovations that are already in currency but have not yet had a profound influence on education. To produce it, a group of academics at the Institute of Educational Technology in The Open University proposed a long list of new educational terms, theories, and practices. We then pared these down to ten that have the potential to provoke major shifts in educational practice, particularly in post-school education. We have not deliberately excluded school education, but that is not our area of expertise. Lastly, we drew on published and unpublished writings to compile the ten sketches of new pedagogies that might transform education. These are summarised below in rough order of immediacy and timescale to widespread implementation.

1 **New pedagogy for e-books:** As e-book technologies evolve, they will offer new ways of interacting with massively shared, adaptive and dynamic books. Teachers will be able to write alternative versions of text, embed graphs and simulations showing live data, add summarization, and use tools such as timers and calculators to support structured learning and formative assessment. Students will be able to share annotations or contact other people reading the same page of a book. New forms of learning with e-books could include crowd authoring (where textbooks are produced by students, for students), embedded tutoring (where readers offer to explain or discuss a difficult passage), or co-reading (where readers are automatically put in contact with others currently reading the same page).

2 **Publisher-led short courses:** These are short courses offered by publishers either in affiliation with recognised educational providers, or independently. The publisher's incentive is to understand learners in the subject areas covered by their regular publications, and to engage consumers in extended learning activities. For the learner, these courses offer self-directed learning for professionals, with institutional affiliation providing respectable 'leisure learning' products.

3 **Assessment for learning:** Assessment can support the process of learning, not just measure its outcomes. In diagnostic testing with rapid feedback, the results of summative computer-based assessment are provided immediately to learners and teachers, then used as a basis for addressing misconceptions and

providing supplementary teaching. Research from computer games has explored how continuous feedback can guide performance and improve motivation. This requires software to monitor how learners progress through the course materials, diagnose misconceptions, know when to intervene, and offer appropriate advice. A teacher can be provided with a 'dashboard' that displays the progress of each student and offers a range of actions from simple automated prompts to online student-tutor conversation. Students can be offered 'open learner models' that show their progress in relation to peers.

4 **Badges to accredit learning:** Badges offer a way of accrediting non-formal learning. A badge, analogous to a Scout badge, is awarded when a learner completes a task or challenge that demonstrates a learning achievement. Badges may be awarded by authorities, by peers, or may be automatically assigned on completion of certain tasks. Badge systems have been used to encourage participation in online help forums and to acknowledge expertise in gaming environments. New approaches support the collection and validation of badges for learning, and work is in progress to develop an infrastructure to award, manage and validate badges.

5 **MOOCs:** Massive open online courses are attempts to create open-access online courses that provide no constraints on class size. They run over a defined period of time and are open to all. The early instantiations followed a pattern of 'let's put on a course here, right now'. More recent offerings take the form of free courses based on existing university teaching materials freely available online, with computer marked assessment and certificates of completion. Some courses have engaged over one hundred thousand participants.

6 **Rebirth of academic publishing:** There are two commonly used approaches to open access publishing: the Gold route, whereby the author or research funder pays a publisher for the cost of making an article open; and the Green route, where the individual author self-archives the article. Some journals have begun to experiment with open review where the reviewers' comments are made public and not anonymised. Others adopt a low threshold for acceptance, replacing peer review selection with post-publishing commentary.

7 **Seamless learning:** Seamless learning occurs when a person experiences a continuity of learning across a combination of locations, times, technologies or social settings. Previous work on seamless learning has focused on designing software for mobile devices that allow people to carry their learning with them and to switch quickly from one learning activity to another. Recent studies have also examined how to support learning journeys. These are extended learning projects that can be accessed on multiple devices, flow across boundaries between formal and informal settings, and continue over life transitions such as school to university and workplace.

8 **Learning analytics:** Learning analytics involves the collection, analysis and reporting of large datasets about learners and their contexts in order to improve learning and the environments in which learning takes place, for example visualisations and recommendations that can influence student behaviour while a course is in progress. Current research is attempting to identify key indicators that show when a student is making good progress or is struggling. From a practical perspective, systems need to allow real-time analysis of disparate data and generate timely reports.

9 **Personal inquiry learning:** Typically, personal inquiry learning involves active exploration of an open question, with the student taking ownership of the inquiry process. Mobile phones can become inquiry toolkits. A typical inquiry might start in a formal setting, with a tutor helping students to refine their questions, continue at home or outdoors with the students collecting and viewing data, then return to the formal setting to share and present results. Inquiry learning can extend existing online or classroom learning. It also has the potential to catalyse citizen science experimentation.

10 **Rhizomatic learning:** This invokes the metaphor of a rhizome, a plant stem which sends out roots and shoots that allow the plant to propagate itself through organic growth into the surrounding habitat. Seen as a model for the construction of knowledge, rhizomatic processes suggest the interconnectedness of ideas as well as boundless exploration across many fronts from different starting points. For the educator, supporting rhizomatic learning requires the creation of a context within which the curriculum and knowledge are constructed by members of a learning community and which can be reshaped in a dynamic manner in response to environmental conditions. The learning experience may build on social, conversational processes, as well as personal knowledge creation, linked into unbounded personal learning networks that merge formal and informal media.