

Inspiring invention in primary school

March 28 2014

Inspiring primary school age children to think of themselves as inventors and to devise novel solutions to the problems around them was the aim of an educational experiment reported in the International Journal of Technology Enhanced Learning.

Charles Crook and Colin Harrison of the School of Education, at the University of Nottingham, UK, suggest that at the interface of in-class and out-of-class activities young learners can be persuaded to cultivate a sense of themselves as inventors and even to come up with novel inventions. Given the urgency with which successive governments have focused on innovative teaching paradigms that extend the curriculum in order to instil various creative and analytical skills in youngsters for the wider benefit of society, the team's approach offers a unique way to perhaps inspire the young innovators of tomorrow.

In their experiment they provided teachers and pupils with the technology - voice recorders and video equipment - with which to record their everyday environment and to help them hone in on the various problems they face in their lives. The primary school class was not only keen to seek out problems but provided several fanciful and occasionally practical solutions.

Cook and Harrison were thus able to build a "taxonomy" of problems as perceived by the children and their teacher. The problems were categorized as personal stress (irritations including being cold in bed, losing one's spectacles, having hay fever, or a noisy sibling waking up too early. There were problems of effort: mowing the grass, getting up in

the morning, doing hard homework. There were problems that arose from a lack of empowerment such as not being able to move quickly enough for a particular purpose. Other people's problems were also a focus, such as their discomfort or perhaps having sight difficulties. There were artefact repair problems such as changing light bulbs, replacing washers in a sink tap. The team also categorized artefact refinement, such as extending the use or usability of a particular device, such as keeping the bigger birds and squirrels off the bird feeder. Finally, there were two types of environment problems: those where a space was not the right size or was hazardous and those in which a space might be dirty, prone to inclement weather or litter.

While the children did not need to understand this taxonomy, they quickly grasped the concept of inventing something to solve one of the problems. As such the team reports the youthful invention of the hover-bike, the household cleaning machine, spiky litter-picking shoes and a baby monitor that translates baby talk and crying into English language statements of desire on the baby's part.

While the inventions are perhaps whimsical, the team suggests that this educational process shows that there is a simple way, using modern technology, to trigger the inventive imagination in school age children something that has been neglected recently in curricula. "A central aim here was to seed such engagement by raising expectations that something could be invented – that not everything that might be discovered or designed had already been achieved," the team says. The researchers point out that the ready availability of technologies such as voice recorders, video equipment and tablets and e-books and readers can act as an important resource for creating inspiration, coherence and engaging output.

More information: "Children as inventors: orchestrating an informal pedagogic scenario with digital resources" in *Int. J. Technology*

Enhanced Learning, 2014, 6, 21-33

Provided by Inderscience

Citation: Inspiring invention in primary school (2014, March 28) retrieved 18 May 2024 from <https://phys.org/news/2014-03-primary-school.html>

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