Creative learning and spiritual moments.

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Abstract

In a previous paper, an interpretation of spirituality along constructivist lines was proposed (Gash and Shine Thompson, 2002). One of the lines of exploration discussed personal transformation as a possible consequence of an experience of an epiphany - a moment of grace. Epiphanies are first, grounded in constructivist psychology as moments when a person shifts levels to reach new understandings (Gregory Bateson, 1987). Epiphanies are also moments of insight that allow the possibility of personal transformation, and hence potentially desirable experiences of spiritual growth. In the present paper we outline a series of experiences of epiphanies in children's learning in the context of a project on constructionist learning led by one of us - Deirdre Butler. The purpose of the paper is to make a case for the importance of such moments as providing opportunities for personal growth, encapsulated in the title of the project EmpoweringMinds.

Keywords

Constructivism, spirituality, children, creative learning

Introduction

Last year (Gash and Thompson, 2002) spoke about becoming aware of the sacred at special moments of grace that some people call epiphanies and others in reverence are reluctant to discuss. Various authors' analyses of the constructivist epistemology provided a context, appropriate at this conference, to examine these moments. Gash began (Gash and Shine Thompson, 2002) with the idea that grace may occur when certain types of awareness are realised in thoughtful consideration of phenomena during reorganisations of one's understandings. Gregory Bateson's hierarchical levels of logical types offered a way of describing these new understandings examined earlier in the case of learning about gender stereotyping (Gash, 1993): awareness arises as higher order transformations of events are realised that identify contexts. The unknowable and the gap between what we know and what we do not know has traditionally played an important role in mysticism. Glasersfeld (1995), in his discussion of radical constructivism, provided clarity about nature being unknowable. Foerster (1991) played with considerations of people being a part of or apart from nature as though magically signalling the creative nature of thought via Gestalt figure-ground reversals. And Bateson too (1987, chap XVI), in a similar way played with questions such as "what is man that he may recognise disease and what is a disease that man may know it?" as though inviting moments of insight through the gap between the known and the unknown.

One of the themes of the paper by Gash and Thompson (op. cit.) on Celtic Spirituality was the transformational nature of the spiritual moment. Personal change, or its possibility, was a central feature of the Celtic festival and the religious ritual. Celtic culture sought such change of self through a variety of means including excesses and personal sacrifice. Physical excess and personal sacrifice or danger have the potential to destabilise psychological cognitive control

functions and so may open pathways to other forms of behaviour and awareness. In terms used earlier to specify key features of constructivist theory, excess and personal sacrifice may provide significant reframing of two important constraints on personal change; inter-individual change and / or intra-individual change (Gash and Gash, 1999). Sacrifice in the form of fasting or the danger in going to sacred places for initiation (or religious observation) provides opportunities to draw on personal resources that are unavailable to the individual in normal daily living. In these cases intra-individual constraints in the forms of learned self preservation strategies may need to be set aside in order to achieve the desired goal of participation in the adult world or the world of the initiated thereby guaranteeing a new form of inter-individual consistency. Initiation rituals provide many examples of this way of destabilising established patterns with the aim of achieving personal growth.

Alternatively excess may destabilise inter-individual expectations or consistency. Excess may occur in all sorts of ways to achieve this aim. The simple forms of excess beer and wine in the Bavarian and European Town Festivals with their temporary loosening of moral rules are one familiar example. Rasputin's invitations to breaking rules, in this case particularly sexual rules, "to sin in order to be more holy" may provide another insight into the process involved. The aim is to destabilise the individual's sense of identity. One possible consequence is that these new forms of behaviour will be beneficial to the individual who may be reconstituted – changed. This is the consequence hoped for in forms of religious practice such as the Roman Catholic sacraments that are concerned with change. Another possible consequence is that the experience of destabilisation may destabilise the person's sense of self, which is a charge often made against certain cults and sects who use these psychological insights in their practices.

At a time in our own culture where global economies and post-modern thinking have radically altered the old certainties of Church and traditional values, it is appropriate to try to come to terms with spiritual understanding in ways that cohere with psychological scholarship. New ways of describing spiritual understanding are required if only because for many people the older discourses have lost their authority and cultural wisdom is in danger of being lost. Using Bateson's levels of understanding as a framework for understanding spiritual moments seemed to provide a way of talking about important psychological moments in psychological language.

In the present paper we want to examine the effects of creative moments on young learners in a project entitled Empowering Minds initiated by Deirdre Butler that uses, inter alia, Lego MindStorms materials in primary schools in Ireland (http://empoweringminds.mle.ie). We argue that in this educational context, constructionist insights achieved in creative problem solving have at times a transformational capacity analogous to the psychological effects of epiphanies or grace. In the next part of the paper we document some case studies and examine the constructivist-constructionist psychological framework to understand the personal transformations achieved.

Case studies.

Derek was an eleven year old in a special class in an Irish primary school in a disadvantaged area in Dublin. His circumstances were difficult. He was not succeeding at school, he found school meaningless and he had got to the point that he had announced to the Principal and his teacher that he was leaving school because he was "no good at anything". At about this time his teacher began to work in the EmpoweringMinds project. Not very far from the school there was a construction site with an impressive crane for hoisting materials onto the buildings. Derek was fascinated by the crane and went down to the building site and talked to the workmen about it. He decided that he would build a crane using computational materials. A complicated and sophisticated crane emerged. Derek showed it to other pupils in the school. He brought the crane to an exhibition for Young Scientists in Ireland. His self-confidence improved, reciprocally he was acknowledged as being skilled with these computational materials. His reputation spread amongst the other children in the school. He was skilled particularly in making models that did not break when they were programmed to move. Soon other children came to him for help and advice with their own models. The transformation entailed by his improved self-confidence led to improvements in his other work at school. For example, previously a reluctant learning, he now wanted to learn the words for all the parts of the computational materials, and he wanted to learn the words used in programming the motors.

In earlier writings on constructivism (e.g., Gash and Gash, 1999) we have described a number of features of constructivist learning including the importance of personal insight and recursive processes in learning. Seymour Papert (1980) emphasises this type of work with expressive computational materials as constructionism because a construction makes the idea necessarily public and so potentially shareable. This emphasises the social side of the construction. From the point of view of learning, constructions permit a slowing down of the process of thinking. In this way incomplete constructions provide the observer with an opportunity to share in the learning process and provide help in concrete ways that may lead to the emergence of a novel solution and a new construction. In more traditional schooling scenes where misconceptions take place within the learner's head it may be far more difficult for teachers to engage with the learner to gain access to the private on-goings in the head to help the learner correct mistakes or to facilitate learning.

This interplay between the private and public life of ideas is striking in the following examples. In a school there were two brothers, Brendan in the mainstream class and Peter in the special class. Peter (in the special class for children with learning difficulties) made a car with a rack and pinion steering system that was so highly regarded by the other children in the mainstream class that they told Brendan his brother Peter was a genius. Peter needed to work with these computational materials to make it evident that he was clever in some ways that were concealed normally by the standard curriculum. In addition the children in the mainstream class and the special class worked with each other sharing the materials. This organisational inclusive strategy made it easy for the children in the mainstream class to become aware of the technical sophistication of Peter in the special class.

So here we can observe the interplay between inter-individual consistencies or shared knowledge and its modification when it did not fit with the experience of Peter. Peter had changed though his own work. While this meant that his own ways of knowing had changed, it is

clear that social experiences can have a very important role in the emergence of new forms of intra-individual consistencies. There are many examples of parents taking an interest in their child's school activities when the children are working on their Lego models precisely because they can easily relate to the success and ingenuity that is evident in the work produced by their child. The ingenuity of the invention is there to admire precisely because it is a construction that can be shared and admired socially.

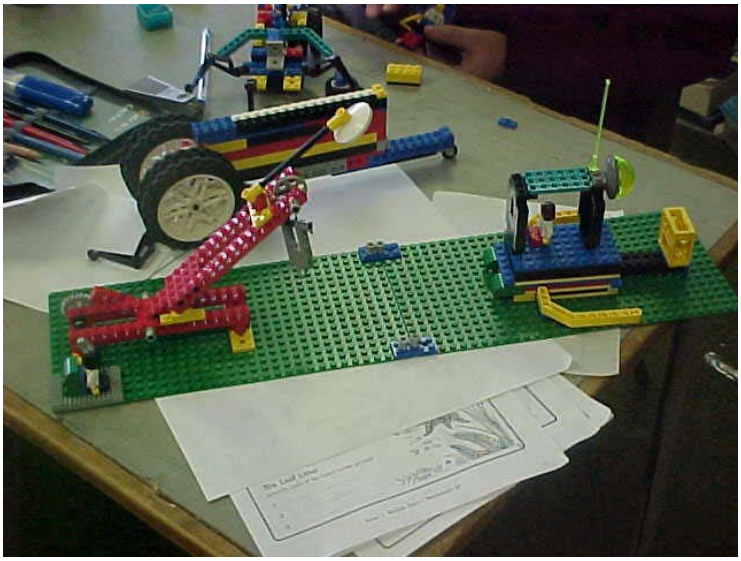
There is also considerable variation in individual style of working with the materials. Some children are planners and work independently. Their plans may arise from visits to their school environments where they notice objects they want to build. One boy, David, wanted to build a crane he had seen in the locality. He drew it and then planned it, deciding which Lego materials he needed and then executed the plans. Other children are what Turkle and Papert have called "bricoleurs", they play with the materials and have a different creative style. We have watched different people cooking in this way: some want to have all the ingredients so they can cook the recipe exactly as prescribed, others take whatever ingredients are available and create a prefect dish creatively. The consequence though of creating an object that is recognised as having excellence, brings recognition in the group.

It is this that is striking with the EmpoweringMinds project. The tale is repeated in each school in different forms. Some children who have been labelled as failures within the context of the traditional school curriculum and the way it was taught. These children, when they work with these materials, can express their creativity in ways that are recognised. This recognition alters the group's perceptions of these children who were in some difficulty and affirms their capacity to be excellent when they are working with ideas that excite them.

In another school it was not with Lego that this type of transformation occurred but with video editing. This class of ten year olds began making animations that were built up using digital photos run in sequence with software called Microworlds. The children graduated from this to more complex projects using video editing software. One child who had a severe reading problem spent considerable each day working on the video editing software. He is a child who on account of his learning difficulty is shy and quiet. However his expertise is not only recognised by the class and also in the school. His disposition to others is still shy and diffident but he is now regarded as the expert and valued a lot by the others. Interestingly his pedagogical style remains shy and diffident, a manner of being that fits well with the idea of constructivist teaching, but his status in the class and the school has changed utterly and positively.

Our final example stresses the need to communicate, to sharing, and the importance of the development of relationships with mutual common bond. In some schools children arrive in Ireland without knowledge of the English language. One boy and others in other schools with similar backgrounds and difficulties with the language began to talk about their Lego models in the schools and began to use words, their first words in English, talking about Lego. This also demonstrates their immersion in a community of acceptance where there is mutual respect. They didn't have to have any particular cultural experiences to engage with the building and the materials. They used concrete objects to learn and forge identities in the peer group. The need to communicate is driven by desire to share and solve problems. The special moments that creativity

provides are often sacred and wonderfully transformational. We finish with a picture of his model and the first words that this boy Ibrahim from Bosnia wrote.



" I like lego. I made this boat and winch. "

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