

Transformative learning – in action

Michael Christie
CKK, Chalmers University of Technology
Göteborg, Sweden
mich@chalmers.se

Introduction

In the late 1990s I hosted the visit of an elderly New Yorker to Darwin, a city in the north of Australia. Jack Mezirow and his wife were the guests of Adult Learning Australia, the national organisation responsible for adult learners' week. Jack was scheduled to travel to most of the major cities in Australia to talk about a theory that he was well known for, at least in adult education circles. His theory, called transformative learning, sought to explain how adult learners make sense or meaning of their experiences, the nature of the structures that influence the way they construe that experience, the dynamics involved in modifying meanings, and the way the structures of meaning themselves undergo changes when learners find them to be dysfunctional (Mezirow, 1991).

His theory owed much to the critical theorists and, in particular, to Jurgen Habermas and Paolo Friere. Jack Mezirow is an idealist. The name of his theory implies change. But for Jack it should be a change for the better. The aim of transformative learning is to help individuals challenge the current assumptions on which they act and, if they find them wanting, to change them for the better. The hope of transformative learning is that better individuals will build a better world. In Darwin Jack spoke to a group of Aboriginal teacher trainees and had difficulty adjusting his academic style for the audience but was much appreciated and fielded a number of polite questions.

Transformative learning

Mezirow continued his lecture tour and I met him again a week or so later at Sydney University of Technology where he was a keynote speaker at an international symposium of fifty invited adult educators. The organiser of the symposium welcomed him and the two other female keynote speakers, a German and an English woman, and rather grandly described the symposium as a gathering of some of the finest minds in adult education.

Jack Mezirow gave a similar lecture to the one I had heard in Darwin, a lecture that expounded the building blocks of his theory. Every individual has a particular view of the world. The particular world view may or may not be well articulated but it is usually based on a set of paradigmatic assumptions that derive from the individual's upbringing, life experience, culture or education. When asked to explain their world view most individuals say, in effect 'The world is this way because'. Their explanation is, in turn, based on a set of causal assumptions that are often deeply ingrained and well rehearsed. If the individual is especially committed to his or her world view it is highly likely that a proselytising element will creep in. The individual will argue that 'The world should be

this way' a position grounded in a set of prescriptive assumptions. Mezirow claimed that individuals have difficulty changing because their world views become habits of the mind, frames of reference, which they no longer even see. He argued that particular points of view can become so ingrained that it takes a powerful human catalyst, a forceful argument or what he calls a disorienting dilemma to shake them.

As an adult educator I have seen his theory work in practice, especially for older women who return to study. Their transformations are at times dramatic and involve painful conflict. Attitudes, views and beliefs that are internalised and have become 'habits of the mind' are shaken, questioned and rejected. For many of the women, for example, the belief that 'a woman's place is in the home' had been largely accepted and beginning to study was a departure from this belief. Enrolling in our courses had been difficult and did not always have the husband's approval. This caused conflicts in the individual's external life since she had begun to act according to a new set of assumptions that were not always shared by spouses or friends or family. Enrolling was the first step. The course itself raised other questions, arguments and disorienting dilemmas. They met a different sort of role model among their fellow students and the teaching staff and they started to seriously question some of the assumptions by which they had lived. They began to change. Such transformation rarely occurs unless the individual is convinced it is necessary for their own fulfilment and happiness.

Resolving conflict and the criteria for rational discourse

In any clash of views, whether the struggle is internalised, or between individuals or groups of individuals, there are only a limited number of ways of resolving conflict. When the struggle occurs in the individual mind, decisions to change one's point of view and act on that change are usually based on emotion, reason or a combination of the two. When the conflict occurs externally, that is between individuals and groups, the means of resolving that conflict usually boil down to force (verbal, physical or legal) or discourse.

When the women involved in my courses in Australia acted on their changed view of the world the external conflicts that resulted were settled by the whole range of possibilities: angry words, divorce proceedings, sometimes blows and all too rarely rational argument. The process was often painful but the result for the women (and hopefully even for the men) was greater independence, personal integrity and eventually increased happiness. An essential element of transformative learning is the development of communicative skills so that conflict can be resolved via rational discourse rather than force.

Jack Mezirow made many of these points in his Sydney speech but what remains fixed in my mind is an incident that was so remarkable it is worth relating in some detail. Jack was in the middle of explaining the criteria for rational discourse when he was interrupted by a self-styled communist, who asked, rudely, 'Would it be acceptable in rational discourse for me to interrupt your rambling explanation?'. Jack did not see the trap and said 'Could I just finish what I was saying?'. 'No!' retorted his heckler and continued to pursue his point that rationality is no antidote to irrational rudeness. The academic atmosphere was shattered. Someone else attacked Jack, saying he was caught in

his own Anglo-Saxon, white, middle-class, hegemonic, rationalist framework; another speaker urged us to be emotional, to be threatened, to be hurt. Someone else insisted that Jack's theory is a form of selfish individualism and others criticised him for over emphasising rationalism. I looked on in dismay as otherwise mild mannered adult educators sensed blood and moved in for the kill. Although the pack was led by a man, a number of feminists in the audience also began to savage Mezirow's theory. I watched as Jack tried to hold his ground, attempted to argue rationally, indicated that he was open to critique, indeed welcomed it, but was nevertheless overridden and eventually silenced.

It was not the first or the last time his theory would be attacked. Stephen Brookfield points out in his overview of adult education (Tuinjmans, 1995) that educators in Nigeria, the United States, New Zealand and Canada have criticised Mezirow for focusing too exclusively on individual transformation (Collard and Law, 1989; Ekpenyong, 1990; Clark and Wilson, 1991). Since then the number of dissenters has grown, as academics in Australia, England and elsewhere see the makings of an article, even a theory of their own, by revising or rejecting the notion of transformative learning. The current entry for 'Transformative Learning' in Wikipedia is prefaced with a broom icon and the warning that the introduction lacks sufficient context and the article itself is, in places, confusing or unclear. Indeed as one googles for the theory, the impression is that while appreciated in adult education circles Mezirow's theory has never really taken off. Even Jack Mezirow's own website does not seem to have been updated since 2005. There are of course others who continue to research and publish under the banner 'Transformative Learning'. Stephen Brookfield is one of them and his books, talks and articles build on Mezirow's tradition.

What fascinated me on the occasion of the Sydney symposium was that in their effort to dismember Jack's theory his critics, had in many senses validated it. What were lacking in the debate were the very criteria he had been trying to establish for rational discourse. Mezirow had argued that a rational discourse demands complete and accurate information, freedom from coercion or distorting self-deception, an ability to weigh evidence and assess arguments objectively, an openness to other points of view, an equal opportunity to participate, critical reflection of assumptions and a willingness to accept informed, objective and rational consensus as a legitimate test of validity. Any dispute should be settled using such criteria but judgement is always provisional until new perspectives, evidence or arguments that can yield a better judgement are encountered and subsequently validated through discourse. The international symposium, which had been called to debate the common goals of adult education, was a debacle not a discourse. There was no openness to other points of view (apart from Jack's) and no obvious transformative learning. If these were some of the brightest minds in adult education I certainly did not want to be counted among them.

Transformative learning and engineering education

I have seen the theory of transformative learning work in practice as an adult educator in Australia. Can it have the same effect in engineering education? One of the difficulties facing engineering education, which already has an overloaded curriculum, is how to

define, implement and assess generic competencies such as leadership, teamwork, problem solving, cross cultural competence, ethical behaviour, gender awareness, environmental responsibility and concern for equity issues. In the hands-on workshop for which this paper was written I demonstrate how engineering educators can be encouraged to acknowledge the fact that no matter how objective they endeavour to be in the classroom differences in values exist and that those differences, if they come to the surface, can help or hinder learning. An obvious example is the emphasis today on sustainable development in engineering education. If sustainable development is to be taught across the curriculum we need to be mindful that it a value that not all of our students will share. Reckless development is blamed for many things including global warming. However, when engineering educators face a mixed group of an international masters students they need to be aware that some of those students may pay lip service to what is becoming a 'dominant paradigm' in the west but in their hearts believe that their countries should have the same right to improve their standards of living as the west had. We can argue logically that this is not wise but we need to know that some students believe that the west's standards of living were built on unsustainable development and so why should their countries have to forgo rapid development and improvements in lifestyle by suddenly becoming globally responsible. Certainly any attempt to change such values must begin by enabling people to become aware that they hold such values and that despite the unfairness of it a global commitment to sustainable development may be the only option today – for developing and so called developed countries.

Learning to Learn

All experience is culturally framed and shaped. The experience of a great many engineering students encourages them to see the world through positivistic eyes. This is not altogether a bad thing. It tends to make them decisive, down-to-earth and certain of their knowledge. They are often good problem solvers, capable of determining and weighing up the 'facts' and expressing solutions in succinct and unambiguous terms. But there are drawbacks. Humanities students are more likely to question the very notion of facts, to see that many intellectual positions, even well established ones, theories for example that are taught in our universities, are socially constructed. We cannot simply accept them as given. In many ways it is harder for science or engineering student to see and change their frames of reference, their habits of mind, because the subject matter they study presupposes a rigorous process of scientific proof but rarely questions the nature and validity of such proof. As Stephen Brookfield (1995) argues:

How we experience events and the readings we make of these are problematic; that is, they change according to the language and categories of analysis we use, and according to the cultural, moral and ideological vantage points from which they are viewed. In a very important sense we construct our experience: how we sense and interpret what happens to us and to the world around us is a function of structures of understanding and perceptual filters that are so culturally embedded that we are scarcely aware of their existence or operation.

If we are to introduce 'learning to learn' early on in engineering education we should be clear about what we mean by the phrase. There is very little research done in this area although in the late 1980s and early 1990s, researchers like Jarvis (1987), Brookfield above (1986, 1987 and 1990), Smith (1990), Candy (1990) and Kitchener and King (1990) addressed the topic. The latter refer to 'learning to learn' as a self-conscious awareness of how it is that one comes to know what one knows; an awareness of the reasoning, assumptions, evidence and justifications that underlie the belief that something is true.

This idea fits in well with Mezirow's notion of transformative learning. Transformative learning, however, goes further. It emphasises the importance not only of awareness but also the ability to determine if the paradigmatic, causal and prescriptive assumptions on which belief and behaviour are based have validity. The hardest step of all, and the main aim of transformative learning, is to change invalid assumptions and the behaviour that is based on them.

Reflective workshops

Each year since arriving in Sweden in late 1999 and up until the end of 2005 I have run critical reflection workshops for doctoral students at Chalmers. The numbers vary from year to year but on average I ran four workshops per year with roughly 25 students in each workshop. The students varied in terms of their nationality, language, gender and year level. Of the 300 students that have taken the workshops so far, 60% are Swedish and 40% non-Swedish. The latter group come from a wide range of countries including East European, European, Asian and South American countries as well as places like Russia and China. Because of the variety of languages English is used as the means of instruction but small group work can occur in ones own language if there are sufficient numbers. On average the gender breakdown is 40% female and 60% male.

The workshop is part of a larger two week pedagogical course and takes place over two days. Its aim is two-fold. Firstly to open the minds of participants to a 'humanities subject' so that participants can get the full benefit from their experience. Secondly to give engineering postgraduates the insights and tools necessary to go on improving their teaching and learning long after the course is over. In that sense the workshop is a 'learning to learn' exercise, as defined above. Fortunately I have a spread of cultures, customs, language and societies in the groups I deal with. It is easier for individuals to question their own viewpoint when they are confronted with a number of others. I begin by getting the participants to introduce themselves in pairs or small groups and describe their personal and professional background and a form of polite behaviour in their particular society. In the plenary session it often turns out that politeness in one culture is impolite in another. For example in some countries it can be polite to arrive early for a dinner engagement, in others it is polite to arrive on time, while in some cultures one is expected to arrive late. I also use an anonymous survey where participants are asked to register the strength of their reaction to issues such as adoption by gay couples, internet censorship, euthanasia, abortion, working for unemployment benefits, nuclear

disarmament or capital punishment. This is the survey that forms the basis of the hands-on activity in the ALE2009 conference. After filling in the survey the group is asked to guess what the responses will be to a certain question and the predictions are noted down. The results are tabulated over lunch. When shown the results the groups discuss their divergence on certain issues and the gap between predicted and actual results. In this way the students themselves raise issues such as the way religion, class, society, politics or family upbringing affect world views. In this context it is easier to explain the theory of transformative learning.

Conclusions

I want to argue for the introduction, early on in an engineering program, of separate or integrated courses on critical/analytical awareness. I believe that if engineering students are given the motivation, the means and the knowledge necessary to critically assess, challenge and change their assumptions they will have the chance to become lifelong learners capable, of acting for the best in a rapidly changing world. The workshops I have run at Chalmers where I introduce doctoral students to the theory of transformative learning and provide them with tools to develop critical, analytical reflection could be used as a model for a critical awareness course. If students are more critically aware they will be able to transfer the knowledge they acquire in their discipline to new and unexpected situations once they graduate and enter their particular professions.

Mezirow's theory of transformative learning has a lot in common with Bourdieu's concepts of 'habitus' and 'field' (1977). Habitus is not unlike 'habits of the mind'. Individuals are socialised by the various fields they inhabit, whether it be the field of family, institution or state. We have already noted that within universities students are also socialised by the particular academic field they belong to. It would be depressing if fields, constructed over time by powerful individuals and social forces, always determined the behaviour of the individual. But as Bourdieu points out the process can be two way. Field structures habitus, as for example in engineering universities, where many students see the world from a positivistic perspective. Both the nature and content of the subjects taught reinforce positivist beliefs. But students exposed to workshops and courses that are constructivist in nature, that reveal the way in which all knowledge, all fields are social constructs, offer participants an opportunity to reconsider their own world view, to critique the assumptions that underlie it and to assess the validity of those assumptions. If they decide that some of those assumptions are invalid they have the possibility to change both their beliefs and their behaviour. If enough individuals within a field change, the field itself is likely to change.

Mezirow would say that such change must always be provisional. At the beginning of his disastrous talk in Sydney he quoted a bumper sticker he saw back home in New York. The sticker read 'subvert the dominant paradigm'. When paradigms dominate, at either the individual, group, institutional or state level it is probably time to begin to question if not subvert them. The best way to do that is to train people to think for themselves. Transformative learning is another term for independent thought. It helps us critique our own thought processes, our points of view and the fields that shaped them, whether they

are family, friends, fashion, the media, academic discipline, educational institution, church or state. Transformative learning adds value to other types of organised learning by helping us regularly reassess the validity of that learning and by enabling us to apply what we learn in unexpected situations. Because of this it has a place in engineering education.

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