

>> THE USE OF MENTAL MODELS IN THE IMPLEMENTATION OF CHANGE IN EDUCATION

Of Glasses and Steering Wheels

Ellen Biersteker, Echnaton College, The Netherlands
Wim Kouwenhoven, Universiteit van Amsterdam, The Netherlands

Introduction

"I have learned to look differently at problems of pupils and teachers."

In all institutions for professional Higher Education in the Netherlands 'lectorates' have been established. A lector gathers around him a think tank with the aim of creating and sharing knowledge on a special theme. In this way research activities should get a firm place in the institutions for professional higher education. At the education faculty of the Hogeschool van Amsterdam a lectorate and think tank is working on the theme: "The teacher with competence in change management". Apart from dealing with the question how to define this competence the think tank has worked as well on practical ways to assist teachers, individually or in teams, to reflect on change processes and ways to manage change.

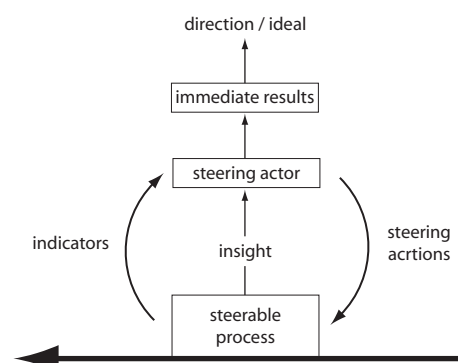
One of instruments is being developed is based on work of George Lengkeek (2004). He describes in his PhD-research project how many problems, relate to change in schools, can be described with a steering model. The way of steering depends on the mental model that the steering actor (or team of actors) applies. Lengkeek discusses, based on a cultural-philosophical quest through Western history, three models or 'glasses' and proposes a fourth, alternative, model of managing change/steering processes.

A pilot version of the instrument has been tried out in the form of a workshop for a team of teachers. During our presentation we will invite the audience to experience the instrument and participate in parts of the workshop as given in the pilot situation. In the rest of this paper we will report briefly on the workshop and its outcomes.

The basic steering model, used in the 'glasses approach'

In order to get more insight into the use of mental models or 'glasses' there is need for a steering language, that implies the use of a steering model. Figure 1 shows the steering model that is used in our work with teachers. The steerable process in this model is the process that can be influenced by steering actions. For example: completing assignments for homework. The steering actor decides on the steering actions and monitors the process via the indicators. Indicators could indicate a problem, for example; 50 percent of the students does not complete the assignments at home. And they function as an instrument for formative evaluation, providing feedback on how far the steerable process has proceeded. The immediate result could be seen as a special indicator that defines when the steerable process has led to acceptable outcomes. This may be the first step towards reaching more distant goals or ideals.

An important aspect in this model is 'insight'. This is the result of observations, reflections and investigations providing the steering actor with ideas for steering actions and the choice of indicators.



A brief explanation of the 'glasses approach' with teachers

A teacher encounters in her professional practice many situations that could be considered 'steering problems'. In the interaction with pupils a teacher tries to steer the development of self-steering of pupils, which might seem a contradiction. A teacher is also subjected to steering actions from the school management and could react in different ways to these actions. A teacher or a team of teachers could influence the steering by the management, just like pupils could intervene in the steering of teachers. Getting awareness of the mental models (see Senge, 1990) used during the steering process is a meta-competence that is part of the competence to manage change processes. Reflection is a necessary tool, while intervision may help to clarify the mental models used during the steering cycles.

The four mental models or glasses could be described as follows:

Glasses 1: Steering on effectiveness.

In this model steering involves a clever use of causal relations. The steering teacher sees through these glasses only mechanisms. For example, the pupil is a (information processing) mechanism. You don't have to assume that it is a living being, only important is how it works. The steering teacher is something like an educational engineer.

Glasses 2: Steering on vitality.

Steering involves the clever use of inborn potential. A teacher sees pupils as living beings with an inborn potential and motivation to learn. They have natural needs that do not need to be subjected to external steering. The important task for the teacher is the creation of stimulating learning environments. Individually or in a team teachers might consider the needs of the school management, and try to place themselves in the footsteps of school managers in order to 'countersteer' processes in which they are part of the steerable process.

Glasses 0: Steering on destabilisation

Sometimes the use of glasses 1 or 2 is not working. Attempts to steer for change fail because certain old habits and patterns remain under a surface of cosmetic changes. Another way of looking may help. Looking through glasses 0 means a systemic approach, where the process that is steered is seen as the disturbance of the equilibrium of a system. Self-organisation in the system could lead to a new equilibrium that is to a great extent non-predictable. In the case of a teacher and students, the teacher sees the students as elements of a system. A non-predictable action in the complex system could lead to a new (self)organisation of the system. Steering through glasses means recognising patterns, having a feeling for systems. It is also using cleverly (and at the right moment) of destabilising and self-organising processes in complex systems.

Glasses 7: Steering on values, joint meaning

Glasses 1, 2, and 0 have in common that the steering actor is in charge, determines the steering actions and develops insight in the steerable process. These mental models seem to be flawed when the steerable process involves the development of self-steering. There is need for another model, other glasses, where steering and equivalent cooperation do not exclude but reinforce each other. The basis of this model, called glasses 7, is trust. It may be characterised by togetherness in dialogue, joint responsibility, together being actors. Because both the steering actor(s) and those who are part of the steerable process are in fact steering the process through a constant dialogue, the outcome of the process is not certain anymore. Both actors

and those acted upon embark on a journey where trust and the jointly giving of meaning are the leading principles.

The design and development of a workshop for teachers

As outlined above the question arose whether the glasses approach could work with teachers. A research project was started with the aim of contributing to the design and development of a course on steering processes in education, meant for teachers, through the try-out and evaluation of the effects of a pilot course. In this development research approach the research/design questions were:

1. To what extent can the glasses approach be used with teachers, educators and trainers with the result of enhancing their insight in steering processes?
2. Is, in this context, the workshop "Steering processes and self-steering for teachers" a satisfactory intervention?

The workshop was administered to a team of ten teachers of a school for secondary vocational education. It consisted of two days with one week between day one and day two. Day one started with an elaborate exchange of views of the participants on their role as teacher researcher and their opinion on the need for an increased self-steering of their pupils. After an explanation of the generic steering model the teachers discussed, in small groups, a case of one of them and tried to translate this case into a steering model. After presentation of the models the glasses approach was introduced and the produced steering models characterised. All of them had the characteristics of glasses 1 or 2. In order to introduce the other glasses the participants discussed preconceived cases that were characteristic for glasses 0 and 7. At the end of the first day the participants got a booklet with information on the theoretical concepts used and also received a homework assignment, related to the writing up of a personal case related to steering problems. The second day started with an assignment; participants had to work out a broad case according to one of the glasses. This exercise served to enhance the knowledge and skills of participants in handling the different mental models. The second half of this day was used to discuss in an intervision setting the own cases that the participants had prepared.

The effects of the interventions were measured through evaluations on paper and orally immediately after each day. Also an interview was held with three participants about two months after the workshop.

Based on the evaluation the following results can be reported:

1. Almost all of the ten teachers appreciated the course. They reported an increased ability to describe situations in terms of steering and steering problems/questions. They also had gained consciousness of the various ways in which steering can be done.
2. It became also clear that teachers did not learn as much from the glasses approach as they did from the making of steering models. The fact that they could picture themselves as steering actor in various situations increased apparently their self-consciousness.
3. A tentative conclusion could be that the workshop is useful. However, at least two more pilots should be held before a more elaborate research project can be carried out.
4. Based on the experiences during the first pilot and comments from the participants changes will be made

in the set-up of the workshop. One major change will be to add a third session, some time after the two day introduction of steering models and glasses approach where reflection will take place on the handling of the steering problem that has been presented and discussed during day two.

References

Lengkeek, G. (2004), *Steering for selfsteering. Theory book accompanying the Mastercourse Integrated leadership in education*, published by the author.

Senge, P. (1990), *The fifth discipline. The art & practice of the learning organization*, New York, Currency Doubleday.

