Five guiding principles for curriculum change

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Abstract

In our chapter on curricular and Implementation challenges when introducing 21st century skills in education (Nieveen & Plomp, 2017), we propose five guiding principles for implementing such change processes in educational practice. As space did not allow us to elaborate and underpin these principles, we decided to do so in this memo. After a short introduction, each of these principles will be briefly discussed and elaborated with reference to relevant sources.

Introduction of the guiding principles

In many countries around the world, broad debates are being held on what should be at the core of education, 'What knowledge is of most worth'? The central question in these debates is how to shape education in such a way that it passes on relevant cultural heritage, prepares students for their participation in society, and allows them to develop their talents to the full (cf. Thijs & van den Akker, 2009). For the reason that major curriculum modifications have consequences at the classroom level, as well as at the school level and the system level, these changes are in need of a mutual adaptation approach (Nieveen, Sluijsmans & Van den Akker, 2014). In this approach, the curriculum renewal process is seen as "a two-way street": adjustments of schools and teachers will also feed the intentions at the national level. Moreover, in this approach *all* components and actors in the education system have to be addressed, including the support from aside by textbook publishers, assessment developers, teacher educators, researchers, and so on. A mutual adaptation approach emphasizes the creation of a spirit and culture of encouragement for *all* involved at the various levels in the curriculum change process. Although there are no recipes for curriculum change, we propose five guiding principles for such change processes:

1. Implementation process is a learning process for all involved
2. Implementation needs care for the old and encouragement for the new
3. Implementation needs freedom within boundaries
4. Implementation needs time to evolve
5. Implementation consists of efforts from 'a meal not a menu'.

In this contribution we are elaborating these five principles and illustrate the principles with a major curriculum change that many regions around the world are working on these days, i.e. the integration of 21st century skills in education. Please refer to Nieveen and Plomp (2017), for details on curricular and implementation challenges when introducing these skills in education.

Guiding principle #1:

Implementation process is a learning process for all involved

An implementation process needs to be viewed as a learning process for *all* groups and people involved. A useful model to illustrate this is the Concerns-Based Adoption Model (CBAM) (Hall & Hord, 1987; Loucks-Horsley, 1996). This model applies to any individual who is experiencing change. For instance, in the context of integrating 21st century skills in education, teachers and school leaders will experience change, but also the policy makers, teacher educators, textbook publishers, test developers, school boards, parents, etc. The model holds that people considering and experiencing change evolve in the kinds of questions they ask and in their use of the change. In general, early questions are more self-oriented: *What is it*? and *How will it affect me*?. When these questions are resolved, questions emerge that are more task-oriented: *How do I do it? How can I make use of the support in order to change my habits? How can I organize my learning process*? and *Why is it taking so much time*? Finally, when self-oriented and task-oriented concerns are largely resolved, the individual can focus on impact. Teacher educators may ask: How can I support teachers in integrating 21st century skills in their teaching? Textbook publishers may ask: How can we integrate the 21st century skills in the learning and teaching resources? Teachers may ask: How can I make sure that all students will improve their 21st century skills? and Are there approaches available that may work even better? (from Loucks-Horsley, 1996). The implementation process needs to be organized in such a way that all groups and individuals will be able to resolve their own change-related questions and concerns. Please, refer to the appendix for the concern-based adoption model as published by Hall and Hord (1987) and Loucks-Horsley (1996). Important to note that authors link the stages of concern about an innovation with levels of use.

Guiding principle #2:

Implementation needs care for the old and encouragement for the new

In the learning process of all involved, the notions of 'care' and 'courage' (cf. Plomp, ten Brummelhuis & Rapmund, 1996) are of help. Paraphrasing their line of reasoning, they argue that in the course of implementing an innovation (here the 21st century skills) in the schools, both 'care' and 'courage' are concepts that have to be taken into account. On the one hand, a program of change should not be exclusively be aimed at what has to be realized in future, but has to take care of the existing practice as well. On the other hand, 'courage' should not be mistaken for an attitude that neglects the values of the existing education system. Where ultimately, 'new' needs to replace 'old', schools cannot and must not focus all attention and resources entirely on the future and ignore the demands of the existing system. A balance between 'new' and 'old' is needed.

This applies also to the people involved. Implementing a change or innovation requires care and attention out of respect for the people and for what has been achieved and out of trust that professionals and their organizations will be able to change. Both concepts of care and of courage and the relative attention for these in the course of time are depicted in Figure 1.
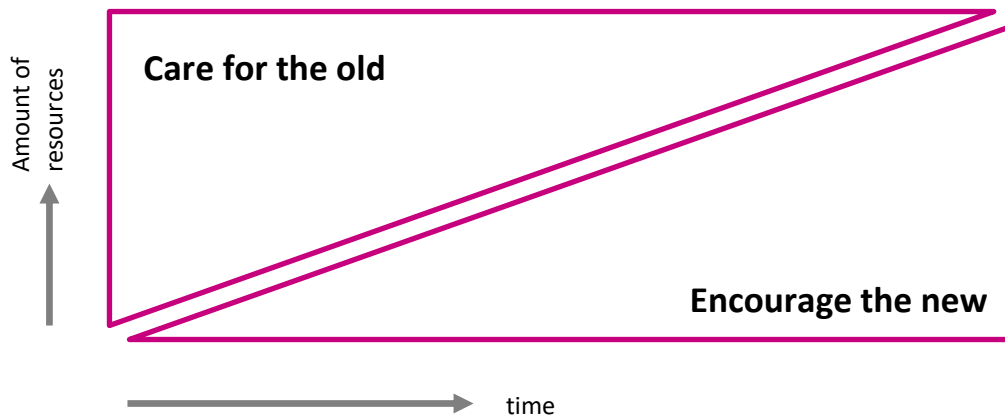
Figure 1: 'New' replaces 'old'

Change is a process, and we have to realize that the transformation to new forms of education will start while the 'old' still exists. New or emergent practices may compete for the same sources as the existing ones. As more and more people are getting involved in these emergent practices, the consequences for the existing practice will gradually become clear and this may cause resistance. Without a program of action to help these emergent practices to flourish, the existing practice will have the tendency to continue, the more so when the existing interests of people involved benefit from continuation of the status quo.

Guiding principle #3:
Implementation needs freedom within boundaries
A 'one size fits all' approach will not be of help in implementing major curriculum changes (cf. Nieveen, Handelzalts & van den Akker, 2005). The system needs to remain open to variation within certain boundaries. Individual schools may decide for different emphases in the processes of change they will embark on. This implies that – across schools - the balance between what is traditionally valued and what is considered important for the future may have different representations. It is important that schools work on their own processes of implementing 21st century skills starting from a vision on how they see schooling in a future society, based on which they will operationalize this in various curricular components. This also means that the direction and facilitation from the top (the government) and the lateral support from aside (e.g. from teacher education, textbooks, assessment procedures, support agencies, other schools) need to value variation as well as need to provide enough guidance in order to keep the change within the intended boundaries.

Guiding principle #4:

Implementation needs time to evolve

From this view, change can't and should not be not seen as an one-off event, but as a process that needs time to evolve. Related to this, Fullan (2007; p.65) points to it that in processes of change at the school and the classroom level three broad phases can be distinguished, viz.:

1. Initiation or adoption, i.e. the process that leads up to and includes a decision to adopt or proceed with a change;
2. Implementation, i.e. the initial use and experiences (usually the first 2 or 3 years of use) of attempting to put an idea or reform into practice;
3. Institutionalization or incorporation, i.e. the change gets built in as an ongoing part of the system (or disappears by way of a decision to discard it).

Applied to the integration of 21st century skills, the outcomes of the three phases should be twofold, viz. students acquiring the 21st century skills and schools having a curriculum and an organization capacity to make this happen. This entire process, not only at the classroom level and school level but also at the system level needs enough time to evolve so that all potentials can be tapped.

Guiding principle #5:

Implementation efforts form a 'meal' not a 'menu'

Fullan (2007) makes an important distinction between the subjective meaning of change (as perceived by e.g. schools and teachers) and the objective reality of educational change, being that usually change is not a single entity, but often multi-dimensional. This distinction points to the importance of a shared meaning about the change among all people working on it and the need to achieve program coherence among the many efforts. Fullan (2007, p.44) proposes a set of ten elements of successful change (please see below) 'to achieve greater success on a large scale'. Fullan (2007, p. 44 and further) emphasizes that this list is a coherent set like a 'meal' and not a 'menu' from which one may choose just any six or seven. When applying this 'meal' of ten elements to the changes related to the integration of 21st century skills in the curriculum, this results in the following:

1. Define closing or decreasing the gap between high and low performers as the overarching goal (i.e. when implementing 21st century goals one has to focus on all students and their teachers and not just on one particular group).
2. Attend initially to the three basics of education (i.e. literacy, numeracy and well-being of students).
3. Be driven by tapping into people's dignity and sense of respect (i.e. it is important to respect and take into account teachers' and school leaders' feelings towards the change, especially of those who have doubts about the value and relevance of 21st century skills linked to their subject).

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4. Ensure that the best people are working on the problem (i.e. encourage the new and have the highest probability that the implementation of 21st century skills will be successful by supporting teachers who are willing and able to enact the change).
5. Recognize that all successful strategies are socially based and action oriented (i.e. this can be reinforced by working with teacher design teams who collaboratively work on the enactment of the change for their students).
6. Assume the lack of capacity is the initial problem and then work on it continuously (i.e. in order to secure new beliefs and high expectations, teachers first need new, successful experiences).
7. Stay on track through continuity of good directions by leverage leadership (i.e. careful attention has to be paid to the development of leadership and of others in the organizations in the interest of continuity and deepening of implementation and integration of 21st century skills).
8. Build internal accountability linked to external accountability (i.e. align individual responsibility, collective expectations and accountability data when implementing 21st century skills).
9. Establish conditions for evolution of positive pressure (i.e. pressure that is motivating people involved and seen as fair and reasonable; it should work both ways, viz. government to schools and vice versa).
10. Build public confidence (important to realize that support is needed to perform better, and that better performance garners further support).

As stated before, Fullan (2007) emphasizes that this list is a coherent set like a 'meal' of which each dish needs to be prepared and consumed', because they furnish a well-balanced reform agenda.

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Successful curriculum change usually calls for a layered mutual adaptation approach, including efforts and engagement needed at the classroom level, the school level and the system level. Nieveen and Plomp (2017) elaborate this approach for integrating 21st century skills in education and the five guiding principles introduced in this memo go well together with this approach.

The takeaway message is that to initiate an emergent practice it takes creativity and endurance of *all* involved to end up with useful and sustainable results and it takes courage of *all* to keep up the intention of replacing existing practices. Moreover, this also means that *all* stakeholders at all layers in education need to prepare for 'the leap for the future'.

Nieveen, N., & Plomp, T. (2017). *Five guiding principles for curriculum change*. Enschede: SLO.

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Thijs, A. & van den Akker, J. (2009). *Curriculum in development.* Enschede: SLO

APPENDIX

The Concerns-Based Adoption Model (CBAM): A Model for Change in Individuals

*Reprinted with permission from the chapter entitled " Professional Development for Science Education: A Critical and Immediate Challenge," by Susan Loucks-Horsley. **National Standards & the Science Curriculum**, edited by Rodger Bybee of the Biological Sciences Curriculum Study. Dubuque, Iowa: Kendall/Hunt Publishing Co., 1996. For more information call 1-800-KH-BOOKS (542-6657).*

Another framework that has implications for the *practices* of professional development acknowledges that learning brings change, and supporting people in change is critical for learning to "take hold." One model for change in individuals, the Concerns-Based Adoption Model, applies to anyone experiencing change, that is, policy makers, teachers, parents, students (Hall & Hord, 1987; Hord, Rutherford, Huling-Austin, & Hall, 1987; Loucks-Horsley & Stiegelbauer, 1991). The model (and other developmental models of its type) holds that people considering and experiencing change evolve in the kinds of questions they ask and in their use of whatever the change is. In general, early questions are more self-oriented: What is it? and How will it affect me? When these questions are resolved, questions emerge that are more task-oriented: How do I do it? How can I use these materials efficiently? How can I organize myself? and Why is it taking so much time? Finally, when self- and task concerns are largely resolved, the individual can focus on impact. Educators ask: Is this change working for students? and Is there something that will work even better?

The concerns model identifies and provides ways to assess seven stages of concern, which are displayed in Table 3. These stages have major implications for professional development. First, they point out the importance of attending to where people are and addressing the questions they are asking when they are asking them. Often, we get to the how-to-do-it before addressing self-concerns. We want to focus on student learning before teachers are comfortable with the materials and strategies. The kinds and content of professional-development opportunities can be informed by ongoing monitoring of the concerns of teachers. Second, this model suggests the importance of paying attention to implementation for several years, because it takes at least three years for early concerns to be resolved and later ones to emerge. We know that teachers need to have their self-concerns addressed before they are ready to attend hands-on workshops. We know that management concerns can last at least a year, especially when teachers are implementing a school year's worth of new curricula and also when new approaches to teaching require practice and each topic brings new surprises. We also know that help over time is necessary to work the kinks out and then to reinforce good teaching once use of the new practice smoothes out. Finally, with all the demands on teachers, it is often the case that once their practice becomes routine, they never have the time and space to focus on whether and in what ways students are learning. This often requires some organizational priority setting, as well as stimulating interest and concern about specific student learning outcomes. We also know that everyone has concerns-for example, administrators, parents, policy makers, professional developers-and that acknowledging these concerns and addressing them are critical to progress in a reform effort.

Nieveen, N., & Plomp, T. (2017). *Five guiding principles for curriculum change*. Enschede: SLO.

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Professional developers who know and use the concerns model design experiences for educators that are sensitive to the questions they are asking when they are asking them. Learning experiences evolve over time, take place in different settings, rely on varying degrees of external expertise, and change with participant needs. Learning experiences for different role groups vary in who provides them, what information they share, and how they are asked to engage. For instance, addressing parents' and policy makers' question "How will it affect me?" obviously will look different. The strength of the concerns model is in its reminder to pay attention to individuals and their various needs for information, assistance, and moral support.

Traditionally, those who provided professional development to teachers were considered to be trainers. Now, their roles have broadened immensely. Like teachers in science classrooms, they have to be facilitators, assessors, resource brokers, mediators of learning, designers, and coaches, in addition to being trainers when appropriate. Practitioners of professional development, often teachers themselves, have a new and wider variety of *practices* to choose from in meeting the challenging learning needs of educators in today's science reform efforts.

Typical Expressions of Concern about an Innovation/ Table 3.

Stage of Concern	Expression of Concern
6. Refocusing	I have some ideas about something that would work even better.
5. Collaboration	How can I relate what I am doing to what others are doing?
4. Consequence	How is my use affecting learners? How can I refine it to have more impact?
3. Management	I seem to be spending all my time getting materials ready.
2. Personal	How will using it affect me?
1. Informational	I would like to know more about it.
0. Awareness	I am not concerned about it.

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Levels of Use of the Innovation: Typical Behaviors

Levels of Use	Behavioral Indicators of Level
VI. Renewal	The user is seeking more effective alternatives to the established use of the innovation.
V. Integration	The user is making deliberate efforts to coordinate with others in using the innovation.
IVB. Refinement	The user is making changes to increase outcomes.
IVA. Routine	The user is making few or no changes and has an established pattern of use.
III. Mechanical	The user is making changes to better organize use of the innovation.
II. Preparation	The user has definite plans to begin using the innovation.
0I. Orientation	The user is taking the initiative to learn more about the innovation.
0 . Non-Use	The user has no interest, is taking no action.

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9