The future for learning
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Introduction
My grade school was an experimental school and was one of a kind in Iceland where I was born and raised. What this school had to offer was a new and experimental approach to teaching - personalization it was called. The school celebrated its 30th anniversary this year. Through the years the school has been forced to move towards more traditional forms of teaching although there are still remnants of the “old” way of teaching within the school.

Today, the term personalization is gaining more and more attention. Research efforts during the past several years have yielded various tools to enable learners to participate in more personalized learning environments – however, further research and development is still needed. Although we have come closer to our ultimate goal, we still have some barriers to cross in order to provide our learners with acceptable personalized learning environments.

The most compelling barrier is that we need to build more highly interactive learning models. This position paper discusses the importance of creating an environment for the mass, where creation and sharing of highly interactive learning modules is made easy and where each learning module provides mastery for certain objectives, whether they be one or many.

Individualization and Interaction
In my opinion, individualization or personalization is a fundamental factor in making learning more effective and efficient. Everyone needs to set their personal goals and actively work towards those goals by conquering some objectives. These objectives need to be measurable. Having worked as a teacher and having been a student for a number of years, I know that most teachers are basically practicing this today. The problem is that the learning goals are created for a classroom full of students and not on an individualized basis. This situation needs to be altered. We are all both similar and different in our unique way and there is no guarantee that learning material that works well for one learner will work equally well for the other. Hence there is a compelling need to create an abundance of learning models to cope with the personal differences of our learners.

Interaction is another basic factor that will play an important role in the personalized learning environments of the future. There are many forms of interaction and we can divide them into two categories:

- interaction with other human beings
- computer assisted tutoring

Both of these categories are important when discussing learning. Terry Mayse [3] has constructed a framework for learning technology, which he divides into three stages, conceptualization, construction and dialogue. For dialogue he states:

“In education, the goal is testing of understanding, often of abstract concepts. This stage is best characterised in education as dialogue. The conceptualisations are tested and further developed during conversation with both tutors and fellow learners, and in the reflection on these” [3]

Grades or Mastery
The modern school system is driven by grades, and a common assumption is that the grades are normally distributed. This is a very narrow approach and the question is why the practice of assigning grades has been so widely used.
According to Benjamin Bloom and others [2], almost all students are able to learn through a tutorial approach, with human tutors. This method is called Mastery learning. The major difference between grades and mastery is the roles of the examinations or the students assessment. In mastery courses, evaluation determines which learning material is presented to the student in the next phase. This approach is very important when assessing learners towards certain objectives and in our book [1], Alfred Bork and I explain how this approach could be easily included in tutorial learning.

How do we get there?
Today most educational ministries and/or educational institutes have created a list of objectives where they follow the basic principle that “One size fits all”. In fact they should be considered lucky if these objectives fit anyone at all. These objectives are in most cases based on the age of the learners rather than their level of knowledge and skills. The creation of these objectives is not the criticism and is in fact a necessary source for our future learning environments, but it is the means of how they are used in the school today that can be criticised.

My vision is that each learner will have a personalized learning profile, which includes the already mastered learning objectives, the goals for future objectives and how to achieve those goals. Through our learning profiles we will talk to a networks of systems, through standardisation, which keeps information, actual learning modules and objectives databases, learning styles etc.

Conclusion
The future for learning will involve personalized learning environments with access to highly interactive learning modules as well as advanced communication environments.
To make this dream a reality, we need to create an abundance of learning resources, which have to be shared and be accessible to those who need to use them. The resources need to be created according to standards that can track which objectives they relate to and what to do when the learners have fulfilled their objectives.

References