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1. NEW LEARNING: THREE WAYS TO LEARN IN A NEW BALANCE.

INTRODUCTION

People are learning all the time. They could not even stop learning when they would want to. The one learning experience, however, is not the other. There are various kinds of learning. Are some forms of learning better than other? When we want to decide whether there are differences in the quality of forms of learning, we need criteria for good learning. How can we come to these kinds of criteria? There are, in our view, two ways. The one is looking at society and deriving criteria for good learning from there. The other is looking at research on learning and instruction and the theories that were developed. Fortunately, the two ways tend to agree in the outcomes. From both perspectives similar ideas are put forward that can be summarized in the term "new learning". It is the word we use for: new learning outcomes, new kinds of learning processes and new instructional models that are both wanted by society and stressed in educational and psychological theory.

In this chapter, an overview will be given of the kinds of new learning outcomes needed, the learning processes that will lead to these outcomes and the kinds of instructional processes that can bring about these learning processes. We also give an overview of the contributions made to new learning by the authors of this book in the chapters that follow our introduction.

NEW LEARNING OUTCOMES

New learning outcomes as described by politicians, parents, teachers and company representatives refer to outcomes that are **durable, flexible, functional, meaningful, generalizable** and **application-oriented** (see also Engeström, 1994; Lodewijks, 1993). They should be **durable** in the sense that they remain over a long period of time. Instead of learning for today and tomorrow people should be learning for months, years or even lifetime. Learning outcomes should be **flexible** in that they can be approached from different angles and perspectives instead of being tight to one perspective rigidly. Results of learning should be adaptable to new contexts and changes in contexts. This can only happen when there is deep understanding instead of rote learning. Flexibility relates to internal relational networks between

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R. J. Simons et al. (eds.), New Learning, 1-20.
knowledge elements that are approachable in an easy way. The \textit{functionality} of learning outcomes refers to their “just in time, just in place” character: the results of learning should come to the fore at the right time and place. People should learn what they need at a certain time and place, not less not more (Mellander, 1993). Learning outcomes should also be \textit{meaningful}: real understanding of a few basic principles with far-reaching importance for understanding is more important than superficial understanding of many facts that become obsolete anyhow. Learning outcomes should be \textit{generalizable} in the sense that they are not restricted to one context or situation but reach out to other contexts and situations. Finally, learning outcomes should be \textit{application-oriented}: people should know the possible applications and their conditions of use: when and where is application of the learning possible or necessary.

Furthermore, new learning asks for new \textit{kinds} of learning outcomes: learning-, thinking-, collaboration and regulation-skills. Where the previously described characteristics all relate to the transferability of rather traditional knowledge oriented learning outcomes, these ones refer to skills that can be applied on information and on learning processes. These kinds of skills will be needed because of the information overflow and the exponential increase of information. It will be impossible and unwise to focus on "taking in as much information as possible". Instead, a focus on the skills of learning, thinking, collaboration and regulation should prevail. It is more what people can do with information than the information itself that becomes important. Finding one’s way in the growing body of knowledge becomes more important than having many factual details in memory.

From the perspective of educational and instructional psychology the kinds of outcomes that are wanted follow from some theoretical assumptions about representations in memory (Simons, 1993). A distinction is made between three ways to represent information in memory: episodic representation where concrete happenings and narrative kind of information (with a date and a place) are represented; conceptual representation, where generalized meaning and relations are represented and action representation where procedural, action-related information is represented. \textit{Episodic} representations are based on personal, situated and affective experiences with instances of the concepts and principles (like I love the little bird that I have at home). \textit{Conceptual} (semantic) representations refer to concepts and principles with their defining characteristics (like a bird is an animal with feathers). \textit{Action} representations refer to the things one can do with the semantic and episodic information: solving certain kinds of problems, using the knowledge (like birds can bring over messages).

Good learning outcomes have to do with rich and complex memory representations showing a high degree of connectedness (see Prawat, 1989). Memory representations have a high degree of connectedness when there are many and strong relationships between the elements of the representations. These occur within the three kinds of representations and between them. Strong relations between semantic, episodic and action knowledge refer to conceptual representations with strong relations with examples and concrete experiences or to episodic representations fitting in a well-understood meaningful context or practical