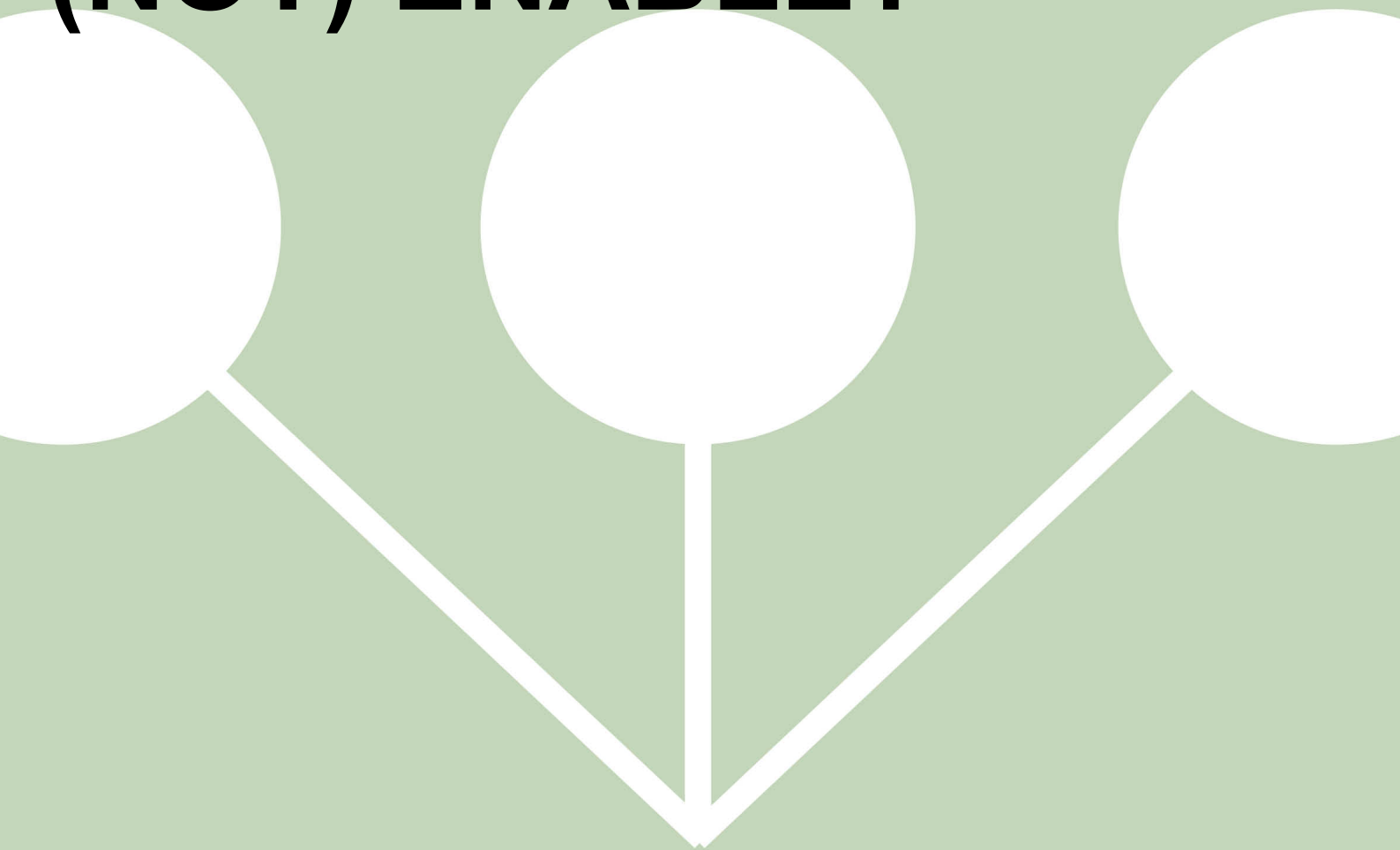


**WHICH TYPES OF
LEARNING /
EDUCATION DOES
THE SOFTWARE
(NOT) ENABLE?**



Technology → Education

Why do education issues need to be reconsidered with the increasing distribution of digital learning software? The use of software in educational settings not only implies the shift from a printed book to the digital e-book, it makes learning arrangements possible without any further personal tuition. Such learning software advertises 'independent learning'. However, the fascination with the technological possibilities does not remove questions concerning access to the software, learning content, what type of education is enabled, and how this is embedded didactically – through the software itself and also beyond.

Education & Technology

Schools are societal institutions which support students' education and autonomy. Therefore, the didactic approach to a topic is of importance: it shows students how they can acquire new knowledge and form their own opinions. Learning software comes with a specific didactic impact. The way in which such technologies approach a topic – for example through nudging – requires precise attention.

In order to evaluate the didactic approach of a learning software, four aspects should be considered:

1. Rehearsing routines instead of acquiring new skills

The core of most learning software consists of sets of exercises. These are usually characterised by testing existing knowledge. External signs for this are, for example, multiple choice formats rather than open text fields that allow answering in whole sentences. When learning software focusses on practising existing knowledge, it leads to a reduction of learning: rather than exploring an unknown topic and acquiring new skills and knowledge, students retrieve and recall topics that are already familiar. At its core, this does not constitute an understanding of an unknown subject or theme, but rather consists of rehearsing routines through repetition.

2. Learning from mistakes

Learning software allows an immediate verification of right and wrong answers. Mistakes are usually corrected by repeating the set of exercises. Thus, the software cannot analyse the students' answers. Most software shows explanatory texts about the topic rather than providing help with the specific exercise itself. The repetition of exercises suggests an underlying limited understanding of education: merely repeating the same exercise seldomly leads a student to an improved understanding. It is thus left to chance whether students are able to learn from their mistakes.

3. Focus on the digital present

Learning software trains learners to pay attention to what is currently presented on the screen. Gaining an overview of the entire set of exercises or the overarching topic is often not possible. What counts is what is apparent on the screen: the connection between the topics in general, the actual task and the following exercises is more or less cut off.

4. Acquiring new knowledge

Learning software relies on learners' independency. They have to be able to acquire new knowledge and understanding by reading texts or listening – regardless of their age and the topic that is covered. This format reduces learning to an approach via reading. It underestimates the need to introduce pupils to independent learning as well as the need for didactically diverse and age-appropriate approaches to different topics.

Introduction to educational uses of computers and software

Being a "digital native" in the first instance means having an unsystematic knowledge about using digital media. Therefore, also "digital natives" need to be systematically introduced to the application of digital media: schools are encouraged to develop – for example through media concepts – a systematic introduction to working with digital media. This is the only way to lay the foundation for teaching and working with digital media for all subject areas – and for a reflective use of digital media in children's spare time.

→ Questions

- Which didactic-pedagogical approach to a topic does the learning software support?
- Is the software suitable for all parts of the lesson? If not, for which?
- Which types of exercises and answer formats are predominant?
- For which pupils or age groups is the software (not) suitable?
- Does the teaching objective change through the learning software?

Literature and References

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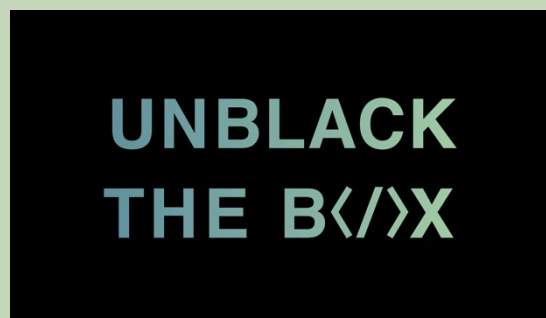
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UNBLACK THE BOX is a network initiative founded in 2019 by researchers from education science, sociology, information technology, media and health education, as well as teachers in schools, universities and pedagogical training. Our goal is to enable educational institutions and teachers to respond to the growing datafication and digitization of education with enlightened, critical and conscious decision-making, even without extensive IT knowledge.

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