

## PRESS RELEASE

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# Pushing the Button: Study Reveals Importance of Pause Button for the Comprehension of Educational Videos

**How do you calculate the oxygen content of water? How does the European Union work? These and many other questions are addressed in countless videos on various internet platforms, the most prominent of which is YouTube. But how do people actually use these educational videos? In the context of an interdisciplinary research project, scientists at the Leibniz Institut für Wissensmedien (IWM), the German Institute for Adult Education (DIE) and the TIB – Leibniz Information Centre for Science and Technology have now gained first insights into when and why users of online video platforms push the pause button.**

Educational videos and tutorials are in high demand – among all age groups. “These formats are readily and frequently deployed across all educational sectors, whether in schools, universities, in-company training or simply on YouTube,” says DIE researcher Dr. Martin Merkt. If you haven’t understood something, you can press the pause button, rewind, and repeat the sequence as often as necessary – in contrast to the traditional chalk and talk method of teaching. But when exactly do users push the pause button during educational videos? A recent study by the Leibniz Institut für Wissensmedien (IWM), the German Institute for Adult Education (DIE) and the TIB – Leibniz Information Centre for Science and Technology addresses this question.

### When Do Viewers Push the Pause Button?

Based on video usage data from the TIB’s AV portal, the researchers investigated when and, above all, why users pause educational videos. “This essentially depends on two factors,” explains IWM researcher Prof. Dr. Markus Huff. The head of the IWM’s *Knowledge Exchange* lab notes that “a frequent use of the pause button can be observed at particularly complicated passages and between different content sequences in the videos.” In contrast, the formal video structure, such as edits and graphic design elements on the video platform, did not affect viewing behaviour.

The study findings can be incorporated into the conceptional design of educational videos: „In the next step, we can tailor educational videos to the needs of different target groups,” says Martin Merkt, who leads the junior research group *Audiovisual Instruction and Information* at the DIE. By

setting automatic pauses or inserting comprehension questions at suitable video sequences, complex content can be presented in a way that is easier for users to understand.

## **Authentic Usage Data as a Milestone for Future Research**

Moreover, the study results are also significant for future projects from another point of view: For their study, the researchers relied on anonymised usage data from real applications and not on data from controlled experimental settings in order to obtain the most authentic picture of viewing behaviour possible. "We have succeeded in drawing psychological conclusions with real video log files and thus gaining an insight into natural viewing behaviour," Markus Huff emphasises. In the future, this approach can help shed light on further questions concerning the natural viewing behaviour of users.

The study results were published under the title „Pushing the button: Why do learners pause online videos?“ in the international journal *Computers & Education*.

### **Leibniz-Institut für Wissensmedien (IWM)**

*The Leibniz-Institut für Wissensmedien (IWM) in Tübingen investigates how digital media influences knowledge and communication processes. Foundational and applied research focuses not only on institutional learning fields such as schools and universities, but also on informal learning on the Internet, at the workplace, or in museums. At the IWM, researchers from various disciplines work together, with many colleagues coming from the areas of psychology, communication science, neuroscience, and computer science.*

### **German Institute for Adult Education - Leibniz Centre for Lifelong Learning (DIE)**

*The German Institute for Adult Education - Leibniz Centre for Lifelong Learning (DIE) successfully embraces the socially and educationally relevant task of substantiating learning and adult education. As a central institution for research, politics and practice, it supports stakeholders in the field of continuing education with research findings and services. The DIE's range of tasks includes application-relevant and fundamental research, infrastructural services as well as counselling for politics and practice. It endeavours to improve personal development, social participation and employability for the entire adult population in Germany. Therefore, the institute constitutes the key interface between relevant sciences and adult educational institutions, associations and initiatives.*

### **TIB – Leibniz Information Centre for Science and Technology**

*Making knowledge and information freely available, sharing it and preserving cultural heritage: TIB – Leibniz Information Centre for Science and Technology holds a unique collection of science and technology worldwide. The library is committed to openness, open access to information, publications and scientific data: it aims to make information and knowledge more easily accessible, more transparent and better reusable. As a research institution, TIB is continuously expanding its role as the German information centre for the digitisation of science and technology. Its research focuses on Data Science & Digital Libraries, Scientific Data Management, Non-Textual Materials, Open Knowledge, Open Science and Visual Analytics.*

#### **Further Information:**

Prof. Dr. Markus Huff  
Schleichstraße 6  
72076 Tübingen  
E-Mail: m.huff@iwm-tuebingen.de  
Tel.: +49 7071 979-215

#### **Further Information:**

Dr. Martin Merkt  
Heinemannstraße 12 – 14  
53175 Bonn  
E-Mail: merkt@die-bonn.de  
Tel.: +49 228 3294-334

#### **Further Information:**

Prof. Dr. Ralph Ewerth  
Welfengarten 1 B  
30167 Hannover  
E-Mail: ralph.ewerth@tib.eu  
Tel.: +49 511 762-19651

#### **Press Contact IWM**

Simone Falk von Löwis of Menar  
Schleichstraße 6  
72076 Tübingen  
E-Mail: presse@iwm-tuebingen.de  
Tel.: +49 7071 979-286

#### **Press Contact DIE**

Beate Beyer-Paulick  
Heinemannstraße 12 – 14  
53175 Bonn  
E-Mail: beyer-paulick@die-bonn.de  
Tel.: +49 228 3294-208

#### **Press Contact TIB**

Dr. Sandra Niemeyer  
Welfengarten 1 B  
30167 Hannover  
E-Mail: sandra.niemeyer@tib.eu  
Tel.: +49 511 762-2772