

## **English Language Learning in Elementary School by Means of Digital Storytelling: The StoryTimeE-Project**

**Caroline Theurer, Maria Eisenmann, Katharina Kindermann and Sanna Pohlmann-Rother**

### **Abstract**

This paper reports on results of a pilot study that implemented a novel teaching unit in elementary school English lessons in Germany. This teaching unit utilized the digital storytelling approach, which offered contemporary and motivating opportunities of literary learning and, with this, aimed to achieve two main goals: First, it was designed to encourage students' active language production. Second, it provided diverse opportunities for students to enhance their digital competencies by creating their own multimedia stories in collaborative small-group work using a tablet. The students' products confirmed the effectiveness of this open approach, with all students successfully creating their own multimedia stories. However, systematic observations during the production phase revealed a significant need for support at different levels. Analysis of the feedback processes showed that students required assistance both in expressing themselves linguistically and in handling technical issues. Little support was given to help with creative expression. The results of this pilot study are discussed in the context of literary learning and research on instructional quality.

**Keywords:** digital storytelling, ELT, feedback, instruction, tablet

**Dr Caroline Theurer** is a senior researcher and lecturer at the Chair of Elementary School Pedagogics at the University of Würzburg, Germany. She has had several years of experience in video-based research on learning and instruction with a particular interest in non-cognitive developmental goals like motivation and creativity. In her dissertation, for instance, she analyzed how teachers in elementary school can foster students' creativity development within longitudinal, multi-level- and multi-method-design.

**Prof. Dr Maria Eisenmann** holds the Chair for TEFL at the University of Würzburg. She previously worked as a secondary school teacher for the subjects German, English and Ethics. Her primary research interests lie in the fields of global education, (digital) media literacy as well as teaching literature including individual differences. She has published widely in the fields of foreign language education, critical environmental literacies as well as digital and literary literacy in the EFL classroom.

**Dr Katharina Kindermann** is senior researcher and lecturer at the Chair of Elementary School Pedagogics at the University of Würzburg. In her teaching and research, she focuses on the media pedagogical professionalization of prospective teachers as well as digitally supported teaching settings in elementary school.

**Prof. Dr Sanna Pohlmann-Rother** holds the Chair of Elementary School Pedagogics at the University of Würzburg. Her research focuses on empirical teaching and teacher profession in primary school. She deals with questions of media pedagogical professionalization of teachers as well as with the challenges and opportunities of digitalization for schools and teaching. Further focal points of her work are multilingualism and transition research as well as the didactics of literacy acquisition.

### **Introduction**

The status of English language learning in primary education varies across Europe (Rixon, 2018). In Germany, for example, where primary education refers to ages 6-10, most students begin learning English in grade one or two, while some elementary schools start in grades three or even four. In total, the proportion of German students learning English in primary education is remarkably lower than in the EU (eurostat, 2023).

Typically, in Germany, monolingual classroom settings receive two English lessons per week, which is also the current practice for grades three and four in Bavaria, where the current study took place<sup>i</sup>. Given these limited learning opportunities, English language teaching (ELT) in German elementary schools focuses on basic communication skills, specifically listening and speaking, reflecting on the formal requirements students are expected to reach – language level A1 of the Common European Framework of Reference for Languages (CEFR), 2001 (Enever, 2011).

So students are expected to actively produce language to express themselves in simple, familiar communicative situations.

Early ELT in Germany aims to lay a foundation for developing communicative competencies and to cultivate an appreciation for and motivation to learn English, serving as a basis for lifelong language learning. At this stage, instruction emphasizes language production over linguistic mastery. According to the *Kultusministerkonferenz* (KMK; Conference of Ministers of Education) there is generally no grading in German elementary schools (KMK, 2013), meaning that performance in English lessons does not affect students' progression to the next class.

With such limitations, it is especially crucial from an education-theoretical perspective to provide high-quality learning opportunities to engage and motivate students to pursue language learning with a focus on learning goals (e.g., motivation for language learning, literary interests) rather than performance goals (e.g., high-performing in a test). In the following, we will first outline the potential of digital storytelling as a way to realize multimodal language learning and then address questions of instructional quality with a focus on feedback. Building on this background, we outline the motivational quality as well as the linguistic and digital skills that can be promoted with digital storytelling, which at the same time illustrates the importance of learning support from the teacher. We will present the research questions of the project and the methods used to answer them, including the details of the teaching unit and the observation of feedback processes during the production phase. Finally, we will report and discuss the results, to provide an outlook on future implications particularly for tablet-supported ELT but also digitally supported language teaching in general.

### **Multimodal Language Learning and its Implications for Teaching**

Multimodal language learning utilizes various communication modes such as linguistic, visual, auditory, and kinesthetic in order to enhance educational experiences and motivation (Eisenmann & Meyer, 2018). In this context, digital storytelling, which involves creating and sharing narratives through digital media, is particularly effective in primary education, engaging young learners through multisensory scenarios. According to Kress' multimodality theory (2010), meaning is constructed across different semiotic modes such as text, image, and sound. In digital storytelling, students create narratives using a combination of these modes, enriching their language learning

by linking words with visual and auditory elements.

This is also in line with the New London Group's work on multiliteracies (2000), which states that learning is most effective when learners transform texts into different genres or designs, thus creating their own meanings. Unlike traditional storytelling, which emphasizes reception over production, digital storytelling enables learners to become active creators, leading to deeper learning experiences. It integrates diverse media and forms of expression, helping students develop not only linguistic skills but also digital and visual literacies. One of the main goals of multimodal language learning is to enrich the teaching of literature by extending literacy beyond traditional reading and writing and incorporating visual, auditory and digital elements. It deepens students' understanding of literary concepts such as plot, theme and characters by engaging multiple senses, making abstract ideas more tangible.

Our classroom implementation incorporates multimodal language learning into digital storytelling for primary education. This comprehensive method enhances language development and skills by engaging multiple modes such as text, audio, images, and video, catering to adaptivity as it supports diverse learners, including those with learning difficulties, by providing alternative forms of engagement. It also fosters creativity by encouraging students to express themselves through different media and helping them to connect emotionally with themes and characters (Kamata, 2023). We promote collaboration through pair and group work, fostering communication and social skills. Additionally, we help learners develop diverse literacies by expanding their skills beyond traditional reading and writing to include digital, visual, and media literacy in the teaching of basic literary analysis skills through interactive, sensory-rich experiences.

Overall, multimodal language learning makes literature more accessible, inclusive and engaging for young learners, supporting them in understanding, analyzing and hopefully enjoying literature in a dynamic and creative way.

### **Background and Aims**

Using innovative methodical approaches and implementing digital devices in the classroom requires careful consideration of instructional quality aspects. To clarify how students benefit most in their language and literary learning from a digital storytelling approach, we investigate interactions between students and teacher with a focus on feedback.



## Instructional quality and feedback

Instructional quality refers to the effective orchestration of content, methods, resources, and teacher behaviour in the classroom in order to optimize learning opportunities for students (Mu et al., 2022; Praetorius et al., 2018, 2023). Theories and models that systematize instructional quality recognize the reciprocal nature of offering and using resources in classroom settings: While teachers cannot control whether and how students use these resources, there are strategies to increase the likelihood that many students will engage actively.

The broadest categorization of the basic dimensions of instructional quality includes classroom management, student support, and cognitive activation (Praetorius et al., 2018, 2023). Other categorizations distinguish between more specific core practices that may be general or subject-specific (e.g., Dutro & Cartun, 2016; Fraefel & Scheidig, 2018), but these often overlap significantly with the basic dimensions. Feedback, particularly in the context of student support, is considered a crucial indicator for individual learning processes.

Feedback can be defined as every piece of information given by a teacher (or another agent or technical device) that enables students to minimize the gap between their current state and their desired state of work or progress (Hattie & Timperley, 2007; Hattie & Yates, 2014). In this sense, even small moments of (nonverbal) confirmation, contradiction, suggestion, or stimulation can serve as feedback.

When considered as a means to enhance student support and improve instructional quality, feedback plays a crucial role in adapting learning opportunities to achieve the highest level of individualization in classrooms. It is no surprise that Hattie (2009), in his meta-meta-analysis, identified feedback as one of the most powerful influences on academic achievement. Feedback is especially important when introducing new learning arrangements with open phases and degrees of freedom to explore and experiment, such as *digital storytelling*.

## Digital storytelling, digital devices, and the teacher

**Digital storytelling.** Digital storytelling is a creative task format in which students receive and produce stories through various modes of representation, such as writing, image, audio, and video (Contini et al., 2018; Rahiem, 2021). We argue that unlike traditional read-aloud sessions in the classroom, digital storytelling allows students to independently receive stories through multiple

modes of representation. The effectiveness of digital storytelling for literary learning has been proven for secondary track students (e.g., Rustia et al., 2023; Yang & Wu, 2012; for a review see Rodríguez et al., 2021), while studies with younger learners are rarer. It has been argued how digital storytelling improves language learning and literary skills in early childhood education (e.g., Addone et al., 2022; Rahiem, 2021), and some studies hint towards an effectiveness for improving writing skills in the children's first language in elementary school age (e.g., Yamaç & Ulusoy, 2016), yet the empirical foundation is scarce, especially when it comes to learning new languages.

However, as this approach provides learners with linguistic resources such as vocabulary, pronunciation, and intonation through different types of coding (e.g., writing, images) and sensory modalities (auditory, visual), it appears ideal for differentiating in inclusive learning settings. Furthermore, the approach of digital storytelling does not only focus on linguistic skills; according to multimodal learning theory, it promotes literary skills and motivation for language learning. It thereby matches all the recurring needs of everyday elementary school teaching and learning, especially for ELT (in Germany).

By expanding the focus from shared oral reception in traditional read-aloud sessions to independent reception of stories, digital storytelling is especially suitable in early foreign language teaching (Brunsmeier & Kolb, 2017; Kolb, 2021). Not only can students receive digital stories in early foreign language lessons in a multimodal manner, but they can also produce them independently and multimodally (Addone et al., 2022), which is of special interest in an inclusive classroom. During production, learners can use and combine different modes of representation to create their stories. This approach gives students the opportunity to utilize their linguistic skills in various ways. Language can either be hand-written, typed out or recorded orally in audio tracks and video sequences. Students can develop action sequences for invented characters or toy figures brought from home and create dialogues for them, which promotes the production of spoken language. Figure 4 below provides insight into individual solutions.

At the same time, written communication should be specifically encouraged at primary level, so that pupils can write individual words or complete sentences for their stories (Böttger, 2013; Reckermann & Ritter, 2022). The linguistic components of such a story can range from individual words set to music or written down (e.g., as exclamations) to more complex dialogues. This illustrates the potential of the production phase for natural differentiation (Eikeland & Ohna,

2022) and is particularly suitable for heterogeneous groups of learners (Caspari, 2020; Dausend & Nickel, 2017).

The use of digital storytelling in English lessons addresses the basic communicative skills essential for early foreign language learning in elementary school (Böttger, 2020). Students typically engage with open tasks designed to have a high potential to cognitively activate and motivate them (Yang & Wu, 2012). Additionally, the approach emphasizes task-based language learning, creating a natural context in which students can casually experiment with producing language in familiar settings. In line with the requirements of German curricula (Kultusministerkonferenz, 2013), students should select from the linguistic resources available to them rather than demonstrate mastery of linguistic means (Dausend & Nickel, 2017, p. 184; Müller-Hartmann & Schocker, 2015).

Thus, this approach is well-suited for early ELT. It can help promote digital skills, which are an important component of basic education, whose goal it is to develop essential skills and abilities for everyday life, thereby laying the foundations for a self-determined life and continued learning.

**Digital devices and teaching.** For implementing digital storytelling in the classroom, the tablet is a suitable mobile digital device (Kindermann et al., 2022). Tablets feature various forms of representation, combining different types of coding (symbolic vs. representational) and sensory modalities (especially auditory and visual; Bastian & Kolb, 2020). They offer multiple types of control (e.g., touchscreen, pen) and integrate several hardware components (e.g., photo and video camera, keyboard) into a single device. This allows the characteristic interweaving of different forms of representation in digital storytelling to be achieved with one digital device for both reception and production. However, there is a risk that technical aspects may overshadow the actual learning content (Brunsmeier & Kolb, 2017), necessitating careful selection of the apps used.

While digital devices have the potential to activate students and support individual learning processes (Irion & Knoblauch, 2021), their effectiveness largely depends on the quality of implementation (Lachner et al., 2020; Quast et al., 2021) and how they are used in lessons with appropriate pedagogic support (Sung et al., 2016; Sung et al., 2017). The inclusion of digital media does not automatically ensure innovative or high-quality teaching. Only targeted and cognitively

engaging digital media provide real added value to learning processes (Stegmann, 2020; Wu, 2024), highlighting the crucial role of the teacher (Scheiter, 2021) and the classroom interaction structures influenced by digital devices (Mertala, 2019; Thiersch & Wolf, 2023). In summary, these perspectives reveal a gap in educational research on language learning and the question in which way digital devices might cater to successful language learning.

### Research Questions

The StoryTimE-project aimed to find answers to the question how students can best be fostered in early (foreign) language learning. Based on theoretical and empirical considerations, we developed a digitally enriched learning setting using the approach of digital storytelling, which raised the broad questions:

- How effective is digital storytelling for ELT in elementary school?
- How can digital devices be implemented effectively in the context of storytelling in ELT?

These questions are significant for research on learning and instruction, literary learning, and for teacher training, because we aim to understand what it takes for teachers to integrate digital devices into high-quality learning environments. More specifically, in this paper, we aim to answer the following questions:

- What kind of feedback is needed when implementing digital devices in storytelling units in early ELT?

In our analyses, we wish to describe feedback situations in digital storytelling in terms of:

- What content (*technical-media, language-literature, creative-design*) does the feedback address?
- What does the feedback refer to (*task, process, regulation*)?
- What functions of feedback (*feed-back, feed-up, feed-forward*) can be identified?

### Research Methods

To answer these questions, we use data from the StoryTimE-Project. In this project, we designed, tested, refined, and implemented a digitally enriched teaching unit that used digital storytelling as an approach in ELT. By systematically observing the production phase of this teaching unit, we

evaluated if the unit was suitable for the age group and their age-specific language learning (Kindermann et al., 2024), and we generated data to answer the research questions listed above. We will first provide a detailed description of the developed teaching unit, followed by an explanation of the observation procedures.

### The teaching unit

The teaching unit, titled 'It's storytime: Let's create our own digital fairy tale!', was developed for fourth-grade English-learners in majority language (German) classrooms. It comprises three phases (reception, production, presentation), spread over four modules (see Figure 1). The perception phase is realized in two 90-minute lessons (module 1 and module 2). The production phase also requires two 90-minute lessons but can be adapted into a single 180-minute phase, depending on the school's organizational needs. The teaching unit concludes with a presentation phase (module 4), where students reflect on both the product and the processes; this final module should be at least 90 minutes long. All materials are available for classroom use (Kindermann et al., 2024).

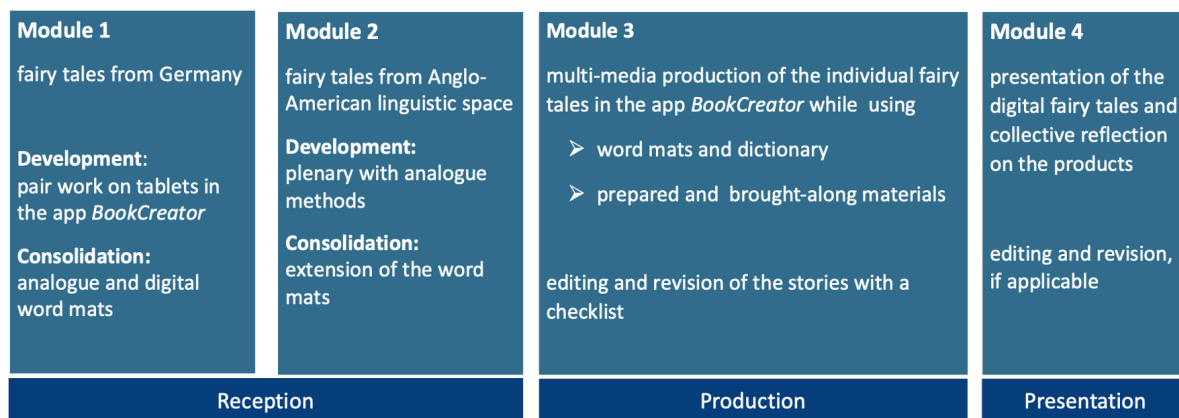


Figure 1. Diagram of the teaching unit 'It's storytime: Let's create our own digital fairy tale!'

During the reception phase (module 1), students worked in pairs using a tablet to read various fairy tales they might already know in German. This allowed them to familiarize themselves with the *BookCreator* app (Tools for Schools Limited, 2011), which they later used to create their own digital stories. Figure 2 illustrates a page from the fairy tale 'Little Red Riding Hood' as presented to students in the *BookCreator* app. The fairy tales used simple language, and each page included audio to support both reading and listening comprehension. Module 2 involved the digital reception

of other fairy tales originating from the anglophone world, likely to be unfamiliar to the students. This phase of the teaching unit was supported by various plenary activities using analogue materials, such as kamishibai and picture boards.

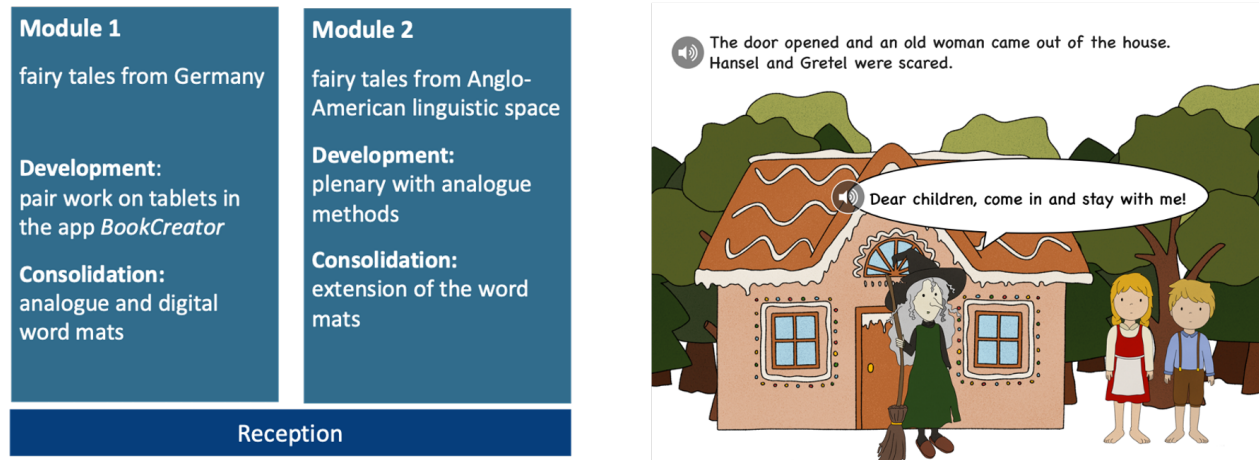


Figure 2. Illustration of the content for modules 1 and 2 (reception phase): Example of a page from the fairy tale 'Hansel and Gretel' in the BookCreator app.

While working with the fairy tales, students learned new words and characteristics of the genre of fairy tales. To aid in consolidation, digital and analogue word mats were created by the teachers and expanded by the students. The word mats could later be used by the students to produce their own fairy-tale-like stories (see Figures 3 and 4).

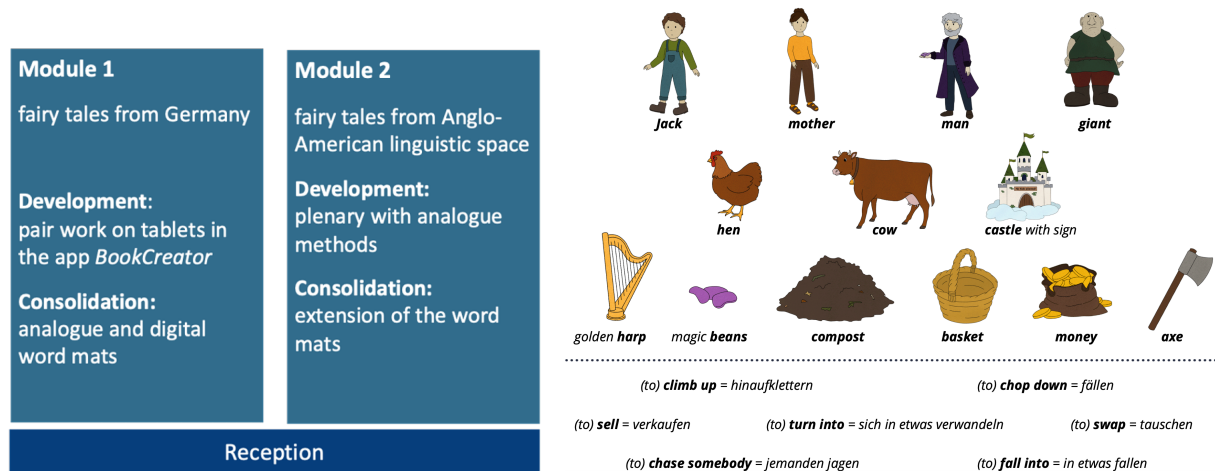


Figure 3. Illustration of the content for module 2 (reception phase): Example of the development of word mats for the fairy tale 'Jack and the Beanstalk'.



At the end of the second module, as preparation for the production phase, students were asked to generate ideas for their own fairy tales. Here, their creative freedom in expressing themselves was emphasized, encouraging them to bring materials from home to further illustrate their stories, in addition to the materials provided during the production phase. Apart from a few guidelines (e.g., the story must include more than one character, feature different settings, and contain a magical element), students were free to decide how to tell their story.

### Sample and description of the products

The teaching unit was implemented in two fourth-grade classes (of 19 and 18 students, respectively), at the end of the school year, in June and July of 2023. Some of the students were somewhat familiar with the tablet as a working device but they did not know the *BookCreator*. Since most students worked in pairs, 18 products were created. Students' products were extremely diverse. All students used multimodal approaches, incorporating writing, speaking, drawing, crafting, playing and/or filming to tell their stories (see Figure 4 for an impression).



Figure 4. Examples of individual realizations (screenshots from the app BookCreator).

In the following, the products will be described from three different perspectives, namely regarding their *media-design*, *linguistic-literary* and *creative-expressive* features. Figure 5 illustrates the diversity in terms of those features.

**Media-design features.** Combinations of different presentation modes can be found in all digital fairy tale products. The pupils mostly combined texts written on the keyboard and photos they had taken themselves. In some products, the written texts were also spoken as an audio track or additional audio recordings were inserted in which the learners recorded, for example, protagonists' dialogues, appropriate music or sounds. For the photos, they often used material provided by the teacher, for example in the form of background images (e.g., *forest* or *house*) and stick puppets. Some groups used toys such as Playmobil figures, sometimes these different props were also combined. Some products contain short video sequences in which stick puppets or toy figures were filmed.

**Linguistic-literary features.** At a linguistic level, text length, syntax, lexis and plot stringency are taken into account. Figure 4 represents the variety of modalities the text was provided in, even videos were created in some cases. The length of the text in particular shows an enormous range, which is closely linked to syntax and lexis. In some fairy tale products, the plot outline is limited to a few words. In these cases, the word choice is limited to those introduced in the teaching sequence (*characters, places, props/items* that have been consolidated in the word mats, see Figure 3). The characters' exclamations in these fairy tales mainly contain interjections. In contrast, fairy tales with more extensive linguistic material contain several syntactically complete sentences. Here, it is far more common to detect language material that is not part of the vocabulary introduced in the sequence (or typical of fairy tales), and direct speech is used more often. In addition, almost all of the student groups succeeded in taking into account at least some of the characteristics of the literary genre of fairy tales (e.g., the story contains magic, there is good and evil).

**Creative-expressive features.** The creativity-pedagogical perspective focuses primarily on new and unusual or unconventional approaches to the content or media implementation of the literary plot. Since the students first learn about and analyze fairy tales from the German and Anglo-American language areas, they are familiar with the genre-specific characteristics. Some products show how the learners primarily use common characters and storylines (according to the principle of a 'mix&match'). On the other hand, there are also digital stories that creatively change these storylines, for example by relocating them to the present day, switch stereotypical roles or add some



twists or humour to the storyline. Intertwined with media-design features, there are also unusual photographic perspectives that can be found alongside more classic text-image combinations in picturebook style. Some groups also created their own drawings or their own stick puppets for their fairy tale. Theurer and Kindermann are currently preparing a more detailed analysis of creative expression in the stories.

The products highlight how deeply the children were engaged in creating their own story. This engagement, however, resulted in many questions or even problems during the production phase that needed to be solved with the help of the teacher. To understand the support given by the teacher, the production phase was systematically observed and the type of support was categorized.



Figure 5. Four examples of individual realizations (screenshots from the app BookCreator).

### Observation of feedback processes

The systematic observations of the production phases were conducted in June and July 2023 through structured, non-participative live observation. Two colleagues observed the production phase while focusing on teacher behaviour during feedback situations (event sampling). The

observers were senior researchers who developed the rating scheme (see below). They were also involved in designing the teaching unit, so they were trained in content matter as well as observational techniques.

Critical incidents (events), defined as interactions between teacher and students when a tablet was involved, were classified using observation schemes. These schemes were developed based on feedback theory (Hattie & Timperley, 2007) and adapted from prior studies that analyzed feedback situations in language learning at elementary schools using analogue methods (Hess, 2019; Lotz, 2016; Pohlmann-Rother & Kürzinger, 2019). Adaptations recurred to the multimodal representation and the digital device, leading to additional observation categories focusing on creative expression or the handling of technical issues.

The two observers documented and coded their observations separately without interacting with one another. To validate their findings, they exchanged impressions and compared their codings after completing the production phase. Table 1 represents the coding scheme and examples of critical incidents.

category	initiator	mode	content	reference	function
subcategory	<ul style="list-style-type: none"> <li>student</li> <li>teacher</li> </ul>	<ul style="list-style-type: none"> <li>verbal</li> <li>nonverbal</li> <li>haptic</li> </ul>	<ul style="list-style-type: none"> <li>media-technical</li> <li>language learning</li> <li>creative-design</li> </ul>	<ul style="list-style-type: none"> <li>task</li> <li>process</li> <li>regulation</li> </ul>	<ul style="list-style-type: none"> <li>Feed-Back</li> <li>Feed-Up</li> <li>Feed-Forward</li> </ul>
examples					
<b>critical incident</b>					
t: "What's your story?" s: "Football." t: "Is there magic involved?" s: "Yes."	teacher	verbal	language/genre	task	Feed-Up
<b>to add a turn to the story:</b> s: "How can we add more places?" t: "Maybe go and look how the others have done it."	student	verbal	language/storyline	process	Feed-Up/-Forward
teacher identifies problems with editing textbox and solves problem herself silently	teacher	haptic	media-technical	task	Feed-Back
<b>audio-graphing does not work:</b> teacher explains the problem, rather than doing it herself	student	verbal	media-technical	process	Feed-Up
<b>varying background options:</b> s: "How can we use a different background?" t: "What if you use those cloths?"	student	verbal	creative-design	process	Feed-Up

Table 1. Coding scheme and examples of critical incidents for the categorization of feedback processes.

As can be seen, the various feedback situations were categorized into five main categories (*initiator, mode, content, reference, function of feedback*), each of which includes two to three sub-

categories to provide detailed distinctions. The first two categories serve as a *basic coding* to simply describe the share of initiations (teacher vs. student) and the mode the feedback has been provided in (verbal, nonverbal, or haptic). With the category *content* we differentiated the issues that needed to be solved in that critical moment. Here, we coded *media-technical* issues (e.g., solving problems with audio graphing, Wi-Fi connection), aspects of *language learning*, which, referring to the subject-specific curriculum, also includes literary learning aspects (e.g., helping with certain phrases or expressions, genre-specific details, or missing vocabulary) and situations where *creative-design* questions arose (e.g., adding graphical elements to express effects or consequences, helping in finding the right font, background, or style sheet). The interactions could further be classified in terms of their *reference*: Some referred to the *task* itself (e.g., help in finding that missing vocabulary) or to a process (e.g., hinting towards options that could enrich the story), while some referred to self-regulation (e.g., students seem to have lost their focus and the teacher wants them to re-engage). Lastly, the interactions can serve different *functions*. While it sometimes might be best to offer a quick and simple *feed-back* (e.g., 'yes' as an answer or the direct verbal translation for missing vocabulary), a *feed-up* can be more motivating and activating (e.g., 'Do you remember the word mats?' as a possible answer for missing vocabulary). Finally, *feed-forwards* can be most activating by leading towards further steps or giving hints to solve problems more independently (e.g., 'What if there were more characters?'). Each of these categories and their respective sub-categories help in systematically analyzing and understanding the different types and roles of feedback observed in the study (see Hattie & Timperley, 2007; Hattie & Yates, 2014).

## Results

As described, all students and student teams successfully created their own multimodal story using a tablet, which might be the most important result of the study. They all accomplished finishing their own stories that met the criteria given, if not exceeding them. Needless to say, this did not happen by itself, but it needed rather a lot of support by the teacher. The classification of these support situations is the main focus of the present paper.

In total, 143 events were identified during the production phase. Regarding initiation, there was a relatively even distribution: 74 were clearly initiated by students, and 57 were clearly initiated by the teacher. The initiator could not be unambiguously identified in 12 incidents. The

majority of feedback was provided verbally (106 instances), while 11 instances involved tactile feedback, and 23 instances included a combination of both. No instances of nonverbal feedback were observed, although its absence does not necessarily indicate it did not occur, which is a limitation of live observation methods, as discussed below.

Figure 6 presents details about the *content* addressed in the feedback situations. It shows that most incidents involved language learning (51 instances), handling the digital medium and its settings (42 instances), or a combination of both (21 instances). A mix of language and creative elements was observed in 14 instances. Additionally, some incidents focused solely on creative aspects (4 instances) or social behavior (5 instances). Two incidents involved a mix of media-technical and creative elements, and only one incident encompassed all three sub-categories.

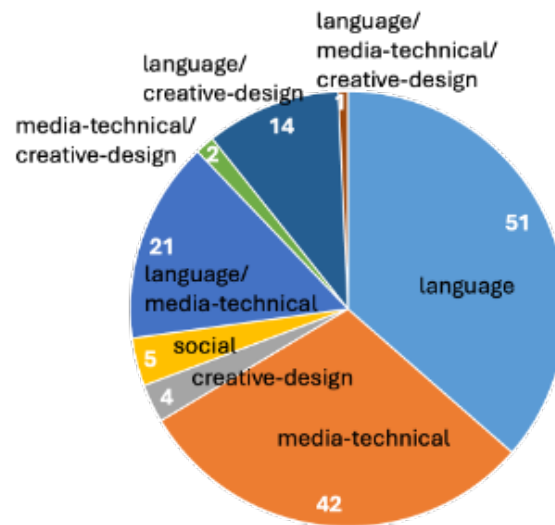


Figure 6. Content of feedback (absolute frequencies).

Interestingly, when language learning was the focus of the situation, often lower-order aspects of language (e.g., translation) were the issue. Aspects like individual linguistic expression or playing with words were seldom seen. Reasons for this observation are discussed below, as are the following descriptions: Figure 7 illustrates the *reference* of the feedback. Mostly, the feedback referred to the task itself (55 instances) or the processes involved (45 instances), or a combination of both (22 instances). Notably, only a few instances of feedback referred to (self)regulation strategies (2 instances and 10 instances in a combination of process and regulation). Given that the learning arrangement was new to the students, this appears surprisingly low and indicates a high

level of involvement, agency, and motivation. This impression by the observers' ratings could be supported by the teachers' (informal) observations. Both teachers experienced the students to be actively engaged and persistent in their endeavours to create their own stories by realizing their individual ideas.

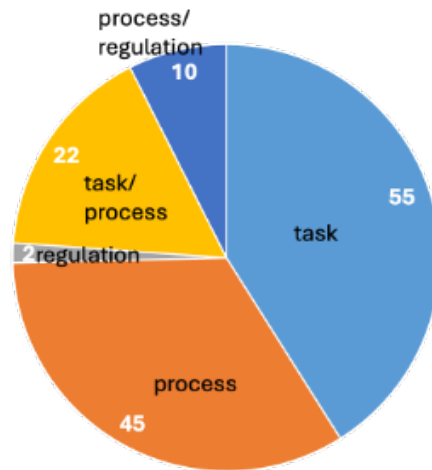


Figure 7: Reference of feedback (absolute frequencies).

Lastly, regarding the *functions* of feedback, most situations could be classified as feed-up (56 instances) and feed-back (43 instances), or a combination of both (19 instances, see Figure 8). In fewer instances, the feedback was classified as feed-up with a tendency towards feed-forward (11 instances) or a clear feed-forward (10 instances). Reasons for this observation are discussed in the following section.

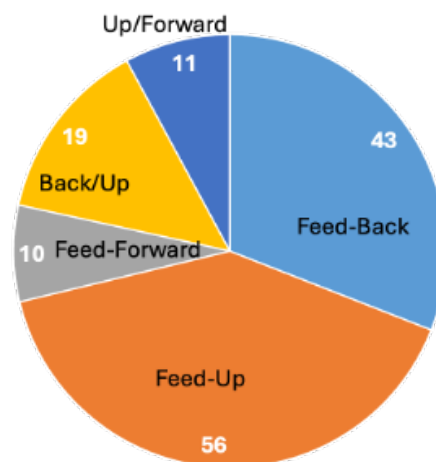


Figure 8: Functions of feedbacks (absolute frequencies).

### **Discussion and Suggestions for Further Research**

This paper reports on a pilot study that developed, tested and evaluated a teaching unit in which students actively created their own digital stories using tablets. Thorough observations of the production phase were conducted to identify the essential requirements for successful implementation by teachers. In the following, the effectiveness of the teaching unit will be examined, followed by a critical assessment of its demands, with a special focus on the feedback processes during the production phase.

Generally, the pilot study demonstrated two points: First, the level of involvement and motivation on the students' part during the production phase support the theoretical assumptions about multimodal learning and teaching approaches (e.g., Eisenmann & Meyer, 2018; Kress, 2010). The teachers' and the observers' impressions throughout the production phase support the potential for deep-learning activities via (digital) storytelling as proposed in the literature (e.g., Kamata, 2023; Yang & Wu, 2012). Second, it became obvious how the teaching unit created learning opportunities in media competence *and* language learning, including literary learning opportunities. Students engaged with digital devices in a way that added value to the processes, but also the products, rather than simply replacing analogue materials. Referring to Stegmann (2020) and Wu (2024), who emphasize individual cognitive activation for qualitative implementation of digital devices, the approach presented here appears beneficial and supportive of learning processes on different levels. The results of the teaching unit validate this assessment: It appears that students benefited from this instructional approach. All student groups developed their own stories based on their individual abilities and expressed satisfaction afterwards. Teachers' expectations for both the final products and the learning processes were generally met, if not exceeded. The goals of supporting language production and developing communication, listening, and speaking skills were achieved. However, we observed a strong need for support, especially on lower-level processes like translating or organizing the workflow. Fundamentally, projects based on multimodal language learning encourage critical thinking and in-depth literary discussions and allow students to explore different interpretations of texts. Digital storytelling allows students to creatively reinterpret literary works and enhance their understanding, while developing technical skills and confidence. We partly observed those higher-order processes in terms of their



representation in the products but also in higher-order questions or feedback situations. Teachers must be aware of students' prior knowledge and regulation strategies, if they, for example, ask a student group presenting their work about possible plot twists: 'What if they [the characters in the fairy tale] were not there already? Think about that and please do not forget to use the checklist when working on your story' or if they expect students to use more than one modality for language expression. Most certainly, these kind of observations co-vary with students' language proficiency, which makes teachers adapt their feedback functions naturally to their students. This leads towards the assumption that students particularly benefit when their language skills are high already. Conversely, even students with limited prior skills managed to create cohesive multimodal stories which they themselves were proud of, which supports the idea of (digital) storytelling being an inclusive and adaptive approach for all learners (Addone et al., 2022; Kamata, 2023).

Certainly worth discussing is the restriction of the sequence to fairy tales. We have opted for this literary genre because its genre-specific characteristics provide learners with a good framework for producing their own stories; the stereotypes contained in fairy tales can be passed on by the students in their own productions or consciously subverted and played with. Generally, the open approach offered individual realization, resulting in stories that differed in their fairy-tale-like appearance.

Overall, this analysis of the student products underscores the open approach during the production phase, despite the systematic observation revealing significant support needed across various levels. This represents a commendable effort on the part of teachers, which deserves recognition. Given that live observations (as opposed to video-based observations) carry the risk of missing critical incidents, one must consider whether the need for support might be greater than documented. This somewhat limits the robustness of the current analysis. As previously mentioned, it is unclear whether no non-verbal feedback was in fact provided by teachers. To enhance this informative value and explanatory power of feedback processes, we plan to conduct video studies with several classes in the main study of the StoryTimE-project.

The total of 143 feedback situations, which, in large parts, referred to rather lower-order processes, underscores a significant need for learner support, imposing substantial demands on teachers. The analyses reveal that feedback primarily consisted of straightforward feed-backs or feed-ups, with few instances of more complex feed-forwards being utilized. Besides addressing

content-language aspects such as translations, many feedback situations also addressed technical and media-related aspects like the functionality of audio recordings. With a more regular integration of digital devices in teaching and learning one can expect those feedback processes to become more content-oriented, so that creativity and individual expression could move into focus more. However, assumptions like this need to be addressed in further research.

Overall, the results from this pilot phase indicate that the classroom dynamic shaped by the use of tablets needs to be further investigated. They describe interactions in depth, yet it needs to be kept in mind that they are based on a small database. Clearly, regional specifics, individual learner and teacher factors and other variables always affect what researchers observe. However, as stated in the introduction, German ELT education lacks quantity when compared to other European countries. This reduced number of lessons spent on English language learning might affect quality aspects as well. So, further endeavours need to be undertaken to offer high-quality learning opportunities for literary, language, and digital learning. Besides this perspective on pupils' learning, insights from studies like this can also directly inform university-level teacher education programmes and professional development courses for practising teachers. By gaining deeper understanding of the processes involved in such teaching units, (future) teachers can be better equipped to meet the diverse challenges they encounter, ultimately benefiting both teachers and students alike.

### References

- Addone, A., Palmieri, G., & Pellegrino, M.A. (2022). Engaging children in digital storytelling. In F. De la Prieta et al. (Eds.), *Methodologies and intelligent systems for technology enhanced learning, 11th International Conference* (pp. 261–270). Springer.  
[https://doi.org/10.1007/978-3-030-86618-1\\_26](https://doi.org/10.1007/978-3-030-86618-1_26)
- Bastian, J., & Kolb, C. I. (2020). Tablets in Schule und Unterricht. Anforderungen an den Kompetenzerwerb von Lehrkräften und Konsequenzen für die Lehrkräftebildung In M. Rothland, & S. Herrlinger (Eds.), *Digital?! Perspektiven der Digitalisierung für den Lehrerberuf und die Lehrerbildung* (pp. 127–42). Waxmann.
- Böttger, H. (2013). Weil Kinder es können und wollen: Lesen und Schreiben im Englischunterricht der Grundschule. *Grundschule Englisch*, 45, 4–9.



- Böttger, H. (2020). *Englisch lernen in der Grundschule: Eine kindgerechte Fachdidaktik*. Verlag Julius Klinkhardt.
- Brunsmeier, S., & Kolb, A. (2017). Picturebooks go digital – The potential of story apps for the primary EFL classroom. *Children's Literature in English Language Education*, 5(1), 1–20.
- Caspari, D. (2020). Kreative Aufgaben. In W. Hallet, F. G. Königs, & H. Martinez (Eds.), *Handbuch Methoden im Fremdsprachenunterricht* (pp. 226–229). Klett.
- Council of Europe (2001). *Common European framework of reference for languages: Learning, teaching, assessment*. Cambridge University Press.
- Contini, A., Bertolini, C., Manera, L., Martin, I., Schlemmer, D., & Kiefer, M. (2018). *Guidelines for digital storytelling in early childhood education*.  
[https://ec.europa.eu/programmes/erasmus-plus/project-result-content/fede56b0-7a42-4bde-9b4d-463871c653c2/GUIDELINE\\_English%20language.pdf](https://ec.europa.eu/programmes/erasmus-plus/project-result-content/fede56b0-7a42-4bde-9b4d-463871c653c2/GUIDELINE_English%20language.pdf)
- Dausend, H., & Nickel, S. (2017). Tap'n'Talk. Differenzierte Förderung von Sprachproduktionen durch tabletgestützte Lernaufgaben. In C. Solveig, & K. Vogt (Eds.), *Heterogenität und Diversität im Englischunterricht: Fachdidaktische Perspektiven* (pp. 179–203). Peter Lang.
- Dutro, E., & Cartun, A. (2016). Cut to the core practices: Toward visceral disruptions of binaries in PRACTICE-based teacher education. *Teaching and Teacher Education*, 58, 119–128.  
<https://doi.org/10.1016/j.tate.2016.05.001>
- Eikeland, I., & Ohna, S. E. (2022). Differentiation in education: A configurative review. *Nordic Journal of Studies in Educational Policy*, 8(3), 157–170.  
<https://doi.org/10.1080/20020317.2022.2039351>
- Eisenmann, M., & Meyer, M. (2018). Multimodality and multiliteracies. In M. Eisenmann, & M. Meyer (Eds.), *Multimodality and multiliteracy. Theme issue of ANGLISTIK 1* (pp. 5–23). Winter.
- Enever, J. (Ed.). (2011). *ELLiE: Early Language Learning in Europe*. British Council.
- eurostat (2023). *Foreign language learning statistics*. Eurostat: Statistics explained  
<https://ec.europa.eu/eurostat/statistics-explained/index.php>
- Fraefel, U., & Scheidig, F. (2018). With pragmatism to professional practice? The 'core practices' approach in teacher education. *Beiträge zur Lehrerinnen- und Lehrerbildung*, 36, 334–364.

- Hattie, J.A.C. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. Routledge.
- Hattie, J.A.C., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, 77(1), 81–112. <https://doi.org/10.3102/003465430298487>
- Hattie, J.A.C., & Yates, G.C.R. (2014). Using feedback to promote learning. In V.A. Benassi, C.E. Overson, & C.M. Hakala (Eds.), *Applying the science of learning in education: Infusing psychological science into the curriculum* (pp. 45–58). American Psychological Association.
- Hess, M. (2019). Niedrig und mittel inferente Kodierung: Feedback in Leseübungsphasen. In M. Hess, A.-K. Denn, & F. Lipowsky (Eds.), *Technischer Bericht zu den PERLE-Videostudien. Bd. 2: Beobachtungssysteme zur Beschreibung und Qualität von Grundschulunterricht* (pp. 173–240). GfP.
- Irion, T., & Knoblauch, V. (2021). Lernkulturen in der Digitalität. Von der Buchschule zum zeitgemäßen Lebens- und Lernraum im 21. Jahrhundert. In M. Peschel (Ed.), *Kinder lernen Zukunft. Didaktik der Lernkulturen* (pp. 122–145). Grundschulverband e.V.
- Kamata, S. (2023). Creating and presenting mash-up stories in the English language classroom in Japan. *Children's Literature in English Language Education*, 11(2), 14–27.
- Kindermann, K., Fromm, J., Theurer, C., & Krüger, N. (2024). *It's storytime: Ein digitales Märchenprojekt für den Englischunterricht in der Grundschule*. OPUS: Universität Würzburg. <https://doi.org/10.25972/OPUS-35304>
- Kindermann, K., Warmdt, J., Frisch, H., Pohlmann-Rother, S. & Ratz, C. (2022). Lehramtsstudierende entwickeln digitale Bilderbücher für den inklusiven Anfangsunterricht. *Grundschule aktuell*, 157, 34–37.
- Kultusministerkonferenz [KMK] (2013). *Fremdsprachen in der Grundschule – Sachstand und Konzeptionen 2013*. Beschluss vom 17.10.2013. Sekretariat der KMK. [https://www.kmk.org/fileadmin/veroeffentlichungen\\_beschluesse/2013/2013\\_10\\_17-Fremdsprachen-in-der-Grundschule.pdf](https://www.kmk.org/fileadmin/veroeffentlichungen_beschluesse/2013/2013_10_17-Fremdsprachen-in-der-Grundschule.pdf)
- Kolb, A. (2021). Story apps – New ways in teaching reading in primary EFL? In S. Frisch, & J. Rymarczyk (Eds.), *Current research into young FL and EAL learners' literacy Skills* (pp. 197–216). Peter Lang.

- Kress, G. R. (2010). *Multimodality: A social semiotic approach to contemporary communication*. Routledge.
- Lachner, A., Scheiter, K., & Stürmer, K. (2020). Digitalisierung und Lernen mit digitalen Medien als Gegenstand der Lehrerbildung. In C. Cramer, M. Drahm, J. König, M. Rothland, & S. Blömeke (Eds.), *Handbuch Lehrerbildung* (pp. 67–75). UTB.
- Lotz, M. (2016). *Kognitive Aktivierung im Leseunterricht der Grundschule. Eine Videostudie zur Gestaltung und Qualität von Leseübungen im ersten Schuljahr*. Springer Fachmedien.
- Mertala, P. (2019). Paradoxes of participation in the digitalization of education: A narrative account. *Learning, Media and Technology*, 45(2), 179–192. <https://doi.org/10.1080/17439884.2020.1696362>
- Mu, J., Bayrak, A., & Ufer, S. (2022). Conceptualizing and measuring instructional quality in mathematics education: A systematic literature review. *Frontiers in Education*. <https://doi.org/10.3389/educ.2022.994739>
- Müller-Hartmann, A., & Schocker, M. (2015). Lernaufgaben in heterogenen Gruppen. In O. Börner, & C. Lohmann (Eds.), *Heterogenität und Inklusion. Lernaufgaben im Englischunterricht* (pp. 5–16). Diesterweg.
- New London Group. (2000). A pedagogy of multiliteracies: Designing social futures. In B. Cope, & M. Kalantzis (Eds.), *Multiliteracies: Literacy learning and the design of social futures* (pp. 9–37). Routledge.
- Pohlmann-Rother, S., & Kürzinger, A. (2019). Niedrig und mittel inferente Kodierung: Individuelle Lernunterstützung im Schreibunterricht. In M. Hess, A.-K. Denn, & F. Lipowsky (Eds.), *Technischer Bericht zu den PERLE-Videostudien. Bd. 2: Beobachtungssysteme zur Beschreibung und Qualität von Grundschulunterricht* (pp. 367–386). GfP.
- Praetorius A., Klieme, E., Herbert, B., & Pinger, P. (2018). Generic dimensions of teaching quality: The German framework of Three Basic Dimensions. *ZDM Mathematics Education*, 50, 407–426. <https://doi.org/10.1007/s11858-018-0918-4>
- Praetorius A., Klieme, E., Herbert, B., & Pinger, P. (2023). Correction to: Generic dimensions of teaching quality: The German framework of Three Basic Dimensions. *ZDM Mathematics Education*. <https://doi.org/10.1007/s11858-023-01514-2>

- Quast, J., Rubach, C., & Lazarides, R. (2021). Lehrkräfteeinschätzungen zu Unterrichtsqualität mit digitalen Medien. *Zeitschrift für Bildungsforschung*, 11(2), 309–341.
- Rahiem, M. D. H. (2021). Storytelling in early childhood education: Time to go digital. *International Journal of Child Care and Education Policy*, 15(4), 1–20. <https://doi.org/10.1186/s40723-021-00081-x>
- Reckermann, J., & Ritter, M. (2022). Reading and writing in the primary school EFL classroom. In T. Summer, & H. Böttger (Eds.), *English in primary education: Concepts, research, practice* (pp. 49–68) University of Bamberg Press. <https://doi.org/10.20378/irb-57525>
- Rixon, S. (2018). Teaching English to young learners in Europe. In S. Garton, & F. Copland (Eds.), *The Routledge handbook of teaching English to young learners* (pp. 493–507). Routledge.
- Rodríguez, C.L., García-Jiménez, M., Massó-Guijarro, B., & Cruz-González, C. (2021). Digital storytelling in education: A systematic review of the literature. *Review of European Studies*, 13(2), 1–13. <https://doi.org/10.5539/res.v13n2p13>
- Rustia, C.D., Dalleda, C.R., & Sumalinog, J.A. (2023). Effectiveness of digital storytelling in teaching literature. *Cognizance Journal of Multidisciplinary Studies*, 3(2), 83–90. <https://10.47760/cognizance.2023.v03i02.005>
- Scheiter, K. (2021). *Lernen und Lehren mit digitalen Medien: Eine Standortbestimmung*. Springer Fachmedien.
- Stegmann, K. (2020). Effekte digitalen Lernens auf den Wissens- und Kompetenzerwerb in der Schule. *Zeitschrift für Pädagogik*, 66(2), 174–190.
- Sung, Y., Liu, T., & Chan, K. (2016). The effects of integrating mobile devices with teaching and learning on students' learning performance: A meta-analysis and research synthesis. *Computers & Education*, 94, 252–275.
- Sung, Y., Yang, J., & Lee, H. (2017). The effects of mobile-computer-supported collaborative learning: Meta-analysis and critical synthesis. *Review of Educational Research*, 87(4), 768–805.
- Thiersch, S., & Wolf, E. (2023). Interaktion im digital mediatisierten Unterricht. Situative Ethnographien sozialisatorischer Praktiken und Strukturen. In S. Aßmann, & N. Ricken (Eds.), *Bildung und Digitalität* (pp. 247–271). Springer Fachmedien. [https://doi.org/10.1007/978-3-658-30766-0\\_10](https://doi.org/10.1007/978-3-658-30766-0_10)

- Tools for Schools Limited (2011). *Book Creator for iPad* (Version 5.5.3) [Mobile app]. Apple App Store. <https://apps.apple.com/de/app/book-creator-for-ipad/id442378070>
- Wu, X.-Y. (2024). Exploring the effects of digital technology on deep learning: A meta-analysis. *Education and Information Technologies*, 29, 425–458. <https://doi.org/10.1007/s10639-023-12307-1>
- Yamaç, A., & Ulusoy, M. (2016). The effect of digital storytelling in improving the third graders' writing skills. *International Electronic Journal of Elementary Education*, 9(1), 59–86.
- Yang, Y.-T.C., & Wu, W.-C.I. (2012). Digital storytelling for enhancing student academic achievement, critical thinking, and learning motivation: A year-long experimental study. *Computers & Education*, 59(2), 339–352. <https://doi.org/10.1016/j.compedu.2011.12.012>

- 
- i Additionally, the position of English in primary school has recently been weakened somewhat by a decision by the Ministry of Education: If deemed necessary, English can be reduced to just one lesson per week in an effort to increase the number of lessons offered in German and Mathematics. This can be decided on an individual basis by each school.