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**Summer, Theresa; Flämig, Rebecca**

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# Combining Picturebooks with Virtual Reality in the Context of Global Citizenship Education

**Theresa Summer & Rebecca Flämig**

**Abstract**

This paper describes a teaching approach that combines picturebooks with (high-immersion) virtual reality (VR) in English lessons in the context of global citizenship education (GCE). Referred to as the VR-Storyworld Approach, it is based on the deep reading framework and the storytelling circle. It consists of four phases, (1) pre-task, (2) while-exploring, (3) while-reading, and (4) post-task, and aims to increase learners' engagement with texts by immersing them in 360-degree environments based on selected picturebooks addressing global issues. The focus is on encouraging learners to actively engage with the stories and critically reflect on the content. Whereas learners receive an opportunity to explore the setting of picturebooks in VR in the while-exploring phase, the post-task phase invites them to create their own VR environment using an authoring tool (AR2VR) based on the texts they read. The VR-Storyworld Approach aims to promote the knowledge, skills, and values necessary for global citizenship and to encourage learners to promote social justice and sustainability. This paper conceptualizes the VR-Storyworld Approach, provides examples of picturebooks, and describes a lesson sequence, offering insights into the immersive VR learning environment based on the picturebook *If Sharks Disappeared* by Lily Williams. A discussion of pedagogical implications and the potential of the approach for promoting literary and digital literacy rounds up the paper.

**Keywords:** immersive virtual reality, VR, authoring tool, picturebooks, global citizenship education, education for sustainable development

**Theresa Summer** is Professor of English Language Education at the University of Bamberg, Germany. Her research interests encompass learner perspectives, global citizenship education (GCE), immersive virtual reality (VR), pop culture, and grammar education. She has published several edited volumes, academic papers, and practice-oriented publications. One of her projects, part of the competence network *lernen:digital*, focuses on developing research-based teacher training modules integrating VR and GCE.

**Rebecca Flämig** is a Research Assistant at the Department of English Language Education at the University of Bamberg, Germany. Her main research interests are global citizenship education, critical literacy, and digital technologies in English language education.

## Introduction

Virtual reality-assisted language learning (VRALL) has been on the rise in recent years as scholars have sought to identify the potential of virtual reality (VR) for language education (Kaplan-Rakowski & Gruber, 2022). Considering its innovative affordances, such as immersive environments that offer insights into other worlds and perspectives, and embodied interaction with AI-based avatars, VRALL offers a promising shift toward more learner-centered approaches, providing opportunities for digital competence development. Despite this, however, VR technologies have not yet found a substantial place in English lessons, and this also applies to secondary schools in Germany, as a recent study has shown (Schnellbögl et al., 2025). Against this backdrop, the German initiative *lernen:digital*, a nationwide project which funds the development of teacher training courses, has contributed to the implementation of research-based teacher training modules, also for foreign language education (Summer et al., 2025). A key component of this project is the transformation of English language teaching (ELT) practices through the use of VR, which forms a central focus of this paper.


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As digital technologies and artificial intelligence (AI) are starting to take center stage in current academic and educational-political discussions, it is crucial not to neglect further central skills and competencies necessary for future learners of English. Particularly deep reading (Bland, 2023) is of growing importance as adolescents are struggling to concentrate, identify fake news, and reflect thoughtfully on the information they encounter in digital spaces (Gießler & Summer, 2025). Deep reading goes beyond simply understanding the words on a page. It includes actively engaging with texts, contemplating ethical issues, and reading critically while negotiating insights and sharing perspectives (Bland, 2023). In English language education, this means raising questions that promote critical thinking, such as 'Whose perspective is represented in this story?' or 'Whose perspective is missing?'.

With our contribution we aim to combine the dual focus on VR and literature by exploring how deep reading can be fostered through VR-supported learning components within the VR-Storyworld Approach. In the context of global citizenship education (GCE), the VR-Storyworld Approach combines English language learning with the multimodal nature of picturebooks and immersive qualities of VR. GCE, aiming to transcend national borders and fostering a sense of belonging to humanity (De Wet et al., 2024), promotes the knowledge, skills, and values needed to comprehend global issues (UNESCO, 2015). GCE and education for sustainable development are both concepts that address the importance of empowering learners to contribute to a more inclusive and just world (Römhild, 2024); references are thus made to both concepts throughout this contribution.

A challenge for teaching practice is that frameworks for working with VR in language learning classrooms are scarce. While some practical guidelines exist that describe basic preconditions for implementing VR in the classroom, such as acquiring a limited number of headsets, ensuring data protection, involving learners in technical maintenance, and integrating collaborative activities (Zirkel, 2025), approaches that combine VR with analogue texts have not yet been systematically developed. The VR-Storyworld Approach and its conceptual development aims to fill this gap. On the basis of theoretical grounding and previous picturebook-based approaches, it presents a sequence of tasks for combining picturebooks with VR. By working with an authoring tool, a software called AR2VR, we illustrate how deep reading can be fostered in combination with VR – involving both an exploration phase in which a developed environment


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introduces learners to several picturebooks as well as a post-task in which learners are encouraged to get digitally creative themselves.

The article is structured as follows: After an outline of the central role of literature and VR in the context of GCE, we introduce the VR-Storyworld Approach. A sample unit exemplifies its steps and goals. Reflections and a discussion of the pedagogical potential of the approach and VR follow, suggesting avenues for practical steps in this area.

## Picturebooks in the Context of GCE

Literature plays a crucial role in preparing learners to realize their agency in preparing the world for change (Bland, 2018). According to Nussbaum (2003), world citizens should read literary texts with opposing viewpoints to understand differences and to develop empathy because this leads to an 'expansion of sympathies that real life cannot cultivate sufficiently' (2003, p. 111). As multimodal texts, picturebooks are unique forms of literary texts that combine visual and verbal forms of meaning-making (Nikolajeva & Scott, 2006). Therefore, when paired with goal-oriented learning tasks, multimodal texts can effectively foster the development of multimodal literacy by encouraging learners to analyze not only verbal narration but also other modes of communication (Eisenmann & Summer, 2020). Moreover, picturebooks can foster empathy, promote emotional literacy, and prepare learners to tackle difficult situations (Daly, 2021; Nikolajeva, 2014; Tørnby, 2020). Additionally, picturebooks can promote literary and visual literacy (Burwitz-Melzer, 2013), as well as critical literacy (Kim, 2016; Louloudi, 2023; Turner et al., 2023), and they are particularly suitable for developing an awareness of global issues (Summer, 2023).

Although picturebooks are typically used in primary schools (for an example of a digital storytelling project using tablets, see Theurer et al., 2024), they also hold significant potential for English language education among older learners, especially for addressing social justice and citizenship education (Alter & Merse, 2023). Notably, there is a rise in picturebooks catering particularly to adults that address typical topics related to the existential state of adulthood, or war, life, and death (Ommundsen, 2014). Traditional picturebooks or crossover picturebooks that address several age groups as readers can be interpreted in different ways and therefore hold great potential for English language learning with older learners (Kist & Kolb, 2022). Research has

shown that even literature-averse learners find working with self-selected picturebooks to be a motivating and positive experience (Kist & Kolb, 2022).

Additionally, digital picturebooks, such as e-picturebooks, picturebook apps, or story apps have their own aesthetic and educational value because they can provide learners with unique interactive learning experiences (Al-Yagout & Nikolajeva, 2021; Serafini et al., 2016). They may include interactive elements, music, or animations (Al-Yagout & Nikolajeva, 2021; Kümmerling-Meibauer, 2015). The multimodal and interactive nature of story apps and software for digital literature can facilitate the reading process, as additional animations and sounds aid learners' understanding and make them feel in control (Brunsmeier & Kolb, 2017). Digital storytelling offers motivating opportunities for literary learning and promoting digital competencies (Theurer et al., 2024).

In their model of literary competences, Alter and Ratheiser (2019) suggest using literature for literary literacy based on four pillars of (1) empathic, (2) aesthetic and stylistic, (3) cultural and discursive, and (4) interpretive competences. Picturebooks can be used to promote empathic competence by asking learners how a text makes them feel. Aesthetic and stylistic competences can be promoted by encouraging learners to understand the relationship between the text and illustrations. When relating to the text personally and discussing ways to act, their cultural and discursive competences can be fostered. Their interpretative competences can be enhanced through analyzing and interpreting symbolic meanings (Alter & Ratheiser, 2019).

As indicated above, picturebooks can be used as teaching and learning tools to approach global issues. Their multimodal literary format can provide opportunities for communication, emotional reactions, the acquisition of new words in the target language, and the development of reflective environmental awareness (Cad et al., 2022). To implement picturebooks in the context of GCE, teachers can draw on three domains of learning: cognitive, socio-emotional, and behavioural (UNESCO, 2015). At the cognitive level, learners can acquire knowledge about social justice and sustainability in ELT (Mastellotto, 2023). Moreover, picturebooks provide plenty of opportunities for socio-emotional learning, which includes the development of 'values, attitudes and social skills that enable learners to develop affectively, psychosocially, and physically and to enable them to live together with others respectfully and peacefully' (UNESCO, 2015, p. 22). Particularly picturebooks highlighting diversity, environmental responsibility, and social justice


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can foster values and attitudes promoting civic engagement (Cad et al., 2022; Mastellotto, 2023). The behavioural learning domain nudges learners, among other matters, in the direction of acting responsibly toward a more sustainable world (UNESCO, 2015). As Römhild (2025) argues, learners need to develop a sense of agency to feel they can effectuate change and have visions of a better future to which they feel it is worth acting. Picturebooks can help achieve this by exemplifying sustainable actions, raising awareness of injustices, and promoting outlooks for sustainable and socially just futures. For instance, learners can develop sustainable projects based on the texts, discuss characters' choices and role-play alternative endings to help connect the picturebooks to real-world issues.

## Virtual Reality in the Context of Global Citizenship Education

Virtual reality (VR) can be defined as a computer simulation of real or imagined physical contexts that allows users to disconnect from their surroundings (Chang et al., 2021). More specifically, VR generates virtual immersion in a digital environment (Villena-Taranilla et al., 2022), and immersion thereby relates to feeling disconnected from the real world (Radianti et al., 2020) through the use of head-mounted displays that lead to high-immersive VR experiences (Hockly, 2024). To give an example, the VR-app *Immerse* places users in interactive, real-life communication scenarios, such as ordering food, thereby promoting communicative competence in an immersive environment. There are two main types of VR headsets: smartphone-based and standalone headsets (Zirkel, 2025). For both types, authoring tools offer an efficient and accessible means of creating immersive learning environments without the need for programming expertise (Zirkel, 2025). Authoring tools such as AR2VR offer several functions that allow teachers to develop interactive VR environments based on their own prompts with the assistance of AI in the software or uploading 360-degree pictures or videos, as illustrated in Figure 1. Furthermore, the tool enables users to add music, textual input, and multiple-choice quizzes. Particularly when used for smartphone-based (e.g., cardboard) headsets, such authoring tools offer a rather convenient and sustainable way of integrating VR into school practice, provided that the software is made accessible to schools.


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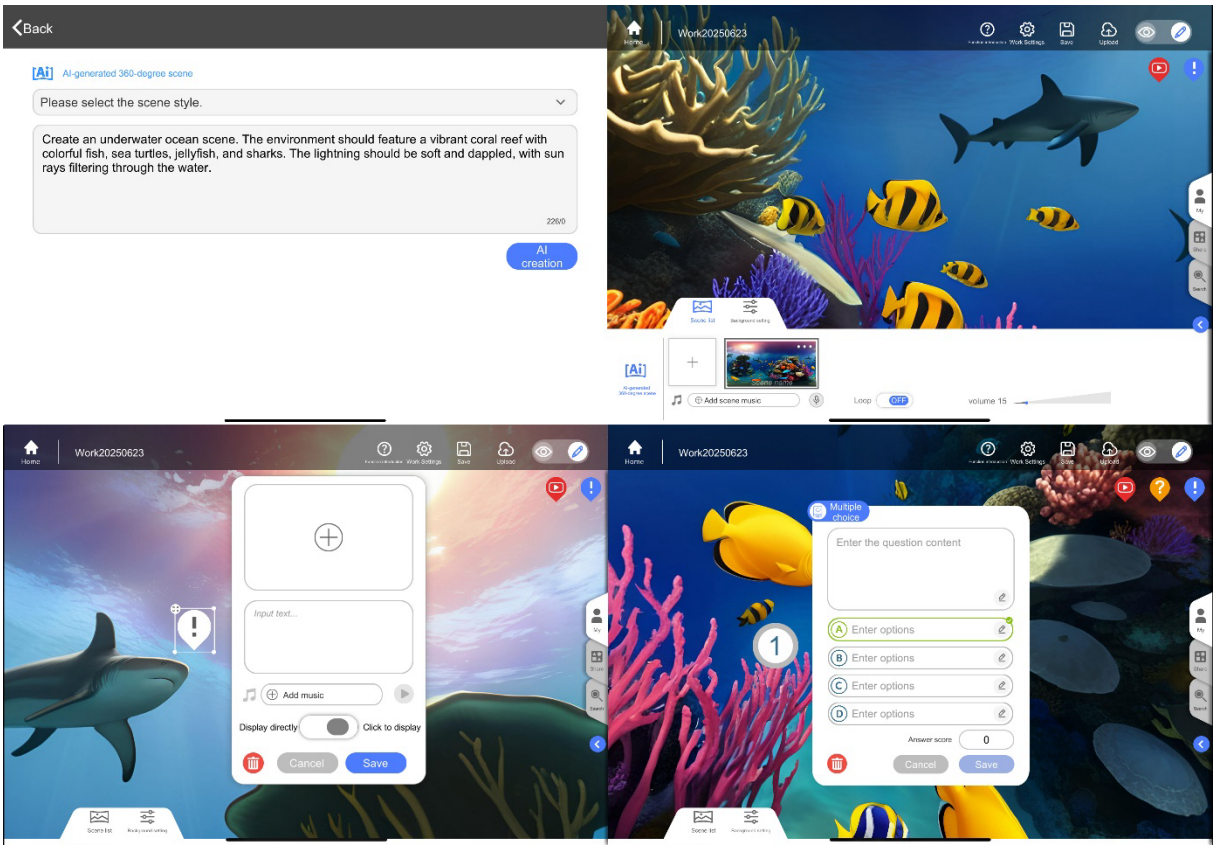



Figure 1. Functions of the VR authoring tool AR2VR

VR has the potential to transform ELT in numerous ways. It can be used for inter- and transcultural learning (Hein et al., 2025), for contextualized learning experiences (Dhimolea et al., 2022), to promote speaking skills (Ironsi, 2023) and pragmatic competence (Gracia, 2024), and to reduce language learning anxiety (Kaplan-Rakowski & Gruber, 2023). The immersive characteristics of VR are especially relevant in the context of GCE, as they allow learners to view topics from different points of view or to experience the effects of climate change firsthand. However, certain challenges must be acknowledged. For instance, learners using high-immersion headsets may experience motion sickness due to the delay from sensations in the virtual and real environment. Moreover, teachers often lack the time, resources, and expertise to effectively implement VR (Cowie & Alizadeh, 2025).

Combining VR and literature provides learners with the unique chance of experiencing literary texts by being fully immersed in virtual storyworlds, which can promote empathy, allow

learners to view the world from different perspectives, and reflect on actions (Ludwig, 2021). To give an example, narrative virtual reality texts such as *Wolves in the Walls* (Fable Studio, 2019) enable readers to experience an immersive sense of presence (i.e., a sense of actually being in another world), a strong connection to characters, and user agency, as a recent study has shown (Oughtred et al., 2021).

However, a research gap lies within the combination of VR and picturebooks for GCE. Picturebooks have been identified as an appropriate medium for promoting social justice (Louloudi, 2023), fostering critical environmental literacy (Summer, 2023), implementing education for sustainable development (Kuty, 2022), and for promoting GCE (Mastellotto, 2023). Combining analogue picturebooks with VR in ELT, therefore, appears to be a unique approach that merges the affordances of both VR and picturebooks by making complex global issues more accessible, fostering deeper engagement through multimodal storytelling, and fostering critical thinking in immersive and context-rich environments.

## The VR-Storyworld Approach

When working with texts in ELT, the three-step structure of pre-, while-, and post-reading is a well-known procedure among educators. It includes a pre-reading phase that aims to prepare learners for the topic by relating the content to their own experiences and prior knowledge, a while-reading phase to support the reception process, and a post-reading phase to foster deeper content engagement and an opportunity to express reactions (Surkamp & Yearwood, 2018). Gibbons (2015) suggests scaffolding during the while-reading phase by modeling good reading strategies and helping learners engage actively with the texts. After reading, the texts can be used as a springboard for new learning and creative responses to them (Gibbons, 2015). Paran and Robinson (2016) suggest starting with learners' experiences when working with literature to motivate, engage, and prepare them for the literary text. Afterwards, learners are given opportunities for responding to the texts through questions about their enjoyment and feelings while reading. Furthermore, learners need to be sensitized to key themes, such as issues of human life, so that they can connect the topic to their own lives and experiences (Paran & Robinson, 2016).

Building on Ghosn (2013) and Bland (2023), the VR-Storyworld Approach was developed to combine VR with picturebooks in English lessons in the context of GCE. Ghosn (2013) suggests

a storytelling circle for working with picturebooks comprising the phases: (1) preparing for the story, (2) in the story world, (3) reflecting on the story, and (4) return to the story. Literary texts, particularly picturebooks, facilitate language learning by offering contextualized vocabulary and culturally situated stories (Ghosn, 2013). The deep reading framework by Bland (2023), on the other hand, consists of the following steps: (1) unpuzzle and explore, (2) activate and investigate, (3) critically engage, and (4) experiment with creative response. It emphasizes the potential of reading literature to promote empathy, world knowledge, and critical literacy (Bland, 2023). The VR-Storyworld Approach is based on these two frameworks. It particularly draws on the reflective, active, and critical engagement components of the frameworks and adapts them to fit the digital environment.

The VR-Storyworld Approach (see Figure 2) highlights the potential of using VR as a pre-reading activity to activate prior knowledge, arouse curiosity, and introduce key vocabulary, as well as a post-reading activity for creative responses, which is what Bland (2023) describes as literature as doing. Here, learners first explore VR environments inspired by the themes and settings of selected picturebooks. This engages them emotionally and prepares them for the reading experience. Drawing on Krashen's (2004) concept of free voluntary reading, learners are then encouraged to self-select one of the picturebooks shown in the immersive VR-worlds, based on their interests. As a post-reading task, learners return to the VR environment and adapt, augment, or potentially create their own VR scenes. They can add dialogues, characters, reflective questions, or visual elements. These learner-created environments can then be used as pre-reading material for their peers, creating a collaborative learning cycle.

Concretely, the approach consists of the following four phases (see Figure 2):

1) Pre-task: Thematic and linguistic introduction into the storyworld(s)
2) While-exploring: VR-immersion into elements of the picturebook stories
3) While-reading: Investigation and critical engagement with the picturebooks
4) Post-task: Creation of VR-storyworld(s) by learners


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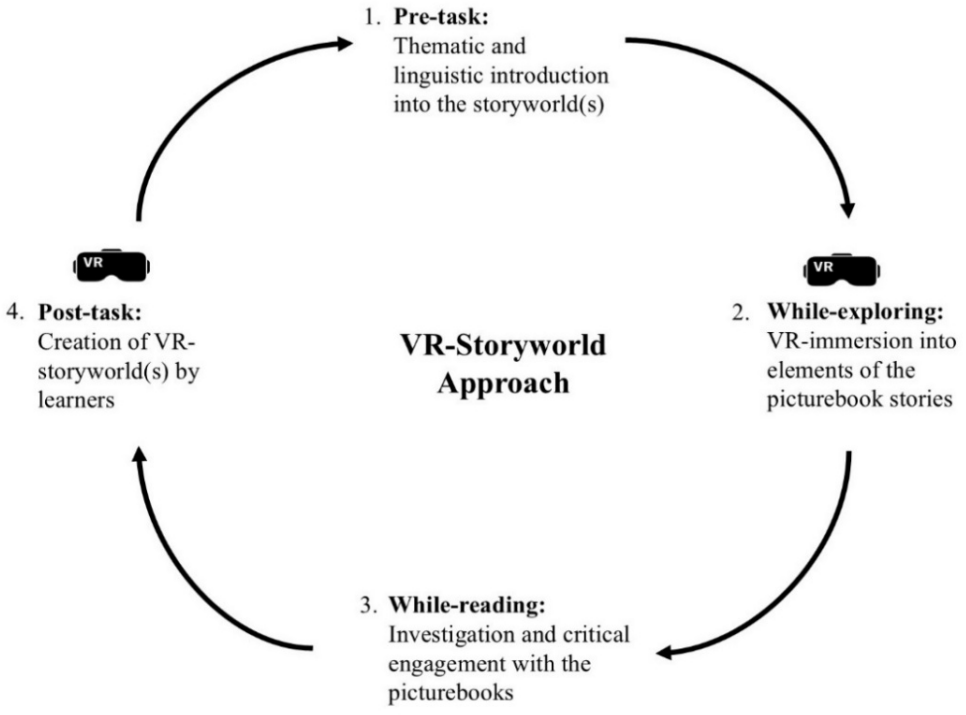



Figure 2. The VR-Storyworld Approach

The first phase aims to prepare students thematically and linguistically for entering the storyworlds. As a side note, teachers should introduce their learners into the functionalities of an authoring tool (e.g., AR2VR) prior to working with a smartphone-based headset and the software for the first time. This, for instance, means informing learners about the fact that buttons are selected through gazing at them for a few seconds, as the headset lacks external controllers. The while-exploring phase includes activating prior knowledge and exploring the setting of the picturebooks in VR. Thus, the learners are immersed in virtual storyworlds based on the texts before reading them in the third phase. While reading, learners investigate the setting, examine the plot, develop critical literacy, and engage critically with the content and themes of the picturebooks. Importantly, this takes place outside VR in an analogue setting as readers ideally read the printed picturebook, so that deep reading can be fostered and learners receive a break from VR to avoid motion sickness (Yudintseva, 2024). As the post-task, learners return to the storyworlds in VR and experiment with creative responses to the texts. They can then share what they created with other

learners and start the cycle anew. The student-created VR environments can be explored by other learners, who may therefore become motivated to engage with another picturebook.

Figure 2 illustrates the cyclical nature of the approach and emphasizes how VR can be used in both the pre- and post-reading stage. Teachers can adapt the order or intensity of phases based on learners' language proficiency, interests, and thematic focus. VR environments developed with authoring tools can be used as a pre-reading activity for learners to immerse themselves in. Similarly, the tool gives students the ability to complete creative post-reading tasks with the authoring tool, offering immense potential for individualized learning scenarios, depending on the selected picturebook, as well as the learning needs and goals in focus.

Based on the model for literary competencies by Alter and Ratheiser (2019), learners can develop their empathic, aesthetic and symbolic, and interpretative competencies. The VR environment can help learners relate to the characters of texts and help them connect emotionally with the text. Moreover, learners can analyze how the visuals and texts work together to create meaning, both in the immersive VR environment as well as in the picturebooks. Symbolic meanings can be analyzed, which helps develop learners' interpretative competencies.

Learners actively engage with and create meaning through different types of activities in the VR-Storyworld Approach. Learning and multimodal meaning-making can include the four knowledge processes of experiencing, conceptualizing, analyzing, and applying (Kalantzis et al., 2016). Based on these knowledge processes, the VR-Storyworld Approach focuses on analyzing and applying. Learners are encouraged to critically analyze the texts they read and evaluate their own perspectives with the help of while-reading questions. As a post-task, learners then creatively apply what they have learned while reading and they can integrate their own experiences while editing immersive VR environments and simultaneously using English to communicate meaningfully. Due to the growing importance of multimodal meaning-making (Kalantzis et al., 2016), combining VR with picturebooks in ELT seems to be an effective way of promoting multiliteracies. An example for this is illustrated in the subsequent section through a sample unit using the VR-Storyworld Approach.


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## A Sample Unit of the VR-Storyworld Approach

Implementing the VR-Storyworld Approach requires teachers to carefully plan their lessons while pre-selecting appropriate picturebooks for their learners. This also includes conceptualizing and designing the VR environment and appropriate while-reading activities. To access the VR environments, learners need to download the software to their smartphones and a stable Wi-Fi connection is required throughout the lesson. Alternatively, they could view the VR environment on a screen using a tablet, laptop, or display, which is also a suitable option for learners with epilepsy or vision difficulties. This experience will reduce the degrees of immersion and interactivity. When designing the VR learning environment, teachers should consider their learners' level of proficiency and cognitive load, providing scaffolding as needed. Furthermore, appropriate cardboard headsets are needed and some copies of the picturebooks for learners to choose from depending on their interests.

Lidström Brock (2024) argues that the following criteria should be taken into consideration when selecting picturebooks for education for sustainable development: the picturebook should be captivating, trigger self-reflection and thinking, foster solidarity and empathy, its vocabulary and pictures should promote diversity and inclusion, and at least one of the three major aspects of sustainable development should be in focus, such as the environment, society, or economy. For selecting literature in ELT, Bland (2018) suggests several criteria, such as the importance of texts providing material for genuine communication on complex dilemmas and being accessible in terms of language, culture, and age. Additionally, the texts should include empathetic characters, involve emotions, be imaginative or informative, challenge readers to re-examine their beliefs, and offer gaps that encourage speculation and creative solutions (Bland, 2018). In line with these criteria, six picturebooks were selected (see Table 1) as they provide learners with diverse perspectives on the issues of migration, climate change, and cultural diversity. The narratives encourage reflection on social and environmental issues, and the visuals support comprehension in a motivating manner. By selecting several picturebooks, it can be ensured that a variety of perspectives are included, and that learners have a choice in selecting a picturebook they would like to read. Table 1 gives an overview of the selected texts, their content, and thematic focus. It is important to note, however, that the selected picturebooks serve as examples rather than as an actual suggestion for a lesson sequence, with the goal of illustrating the overall potential of the VR-Storyworld Approach.

| Author/illustrator, year of publication | Book title | Content | Thematic focus |
|---|---|---|---|
| Robert Munsch & Saoussan Askar with Rebecca Green, 2017 | *From Far Away* | A young girl migrating to a new country and finding her way | Migration |
| Hannah Moushabeck with Reem Madooh, 2023 | *Homeland: My Father Dreams of Palestine* | A father telling his daughters about his homeland in Palestine | Migration |
| Lily Williams, 2022 | *If Sharks Disappeared: Why Sharks Are Important for our Whole Planet* | The interconnectedness of our marine wildlife | Environment |
| Loll Kirby with Adelina Lirius, 2020 | *Old Enough to Save the Planet: Be Inspired by Real-Life Children Taking Action Against Climate Change* | Real-life stories of children all over the world who help to protect our environment | Climate change |
| Sandra Dieckmann, 2017 | *Leaf* | A polar bear who ends up in a forest, misunderstood by the other animals, finds his way home | Migration and climate change |
| Jacqueline Woodson with Rafael López, 2018 | *The Day You Begin* | A book about diversity and finding comfort despite one's differences | Cultural diversity |

Table 1. Selection of picturebooks

The following section gives detailed insights into the implementation of the VR-Storyworld Approach using the picturebook *If Sharks Disappeared* by Lily Williams (2022), which illustrates what would happen if sharks disappeared, having devastating effects on the ocean and other species (also suggested for older learners in Summer, 2023). This book illustrates the interconnectedness of our ecosystem, making it ideal for environmental learning and GCE. Figure 3 shows parts of the VR learning environment, including an AI-generated 360-degrees image created with the software AR2VR that shows the book cover alongside a prediction question to raise learners' interests in the book. Information points provide basic background information and encourage learners to reflect on the visual content presented.


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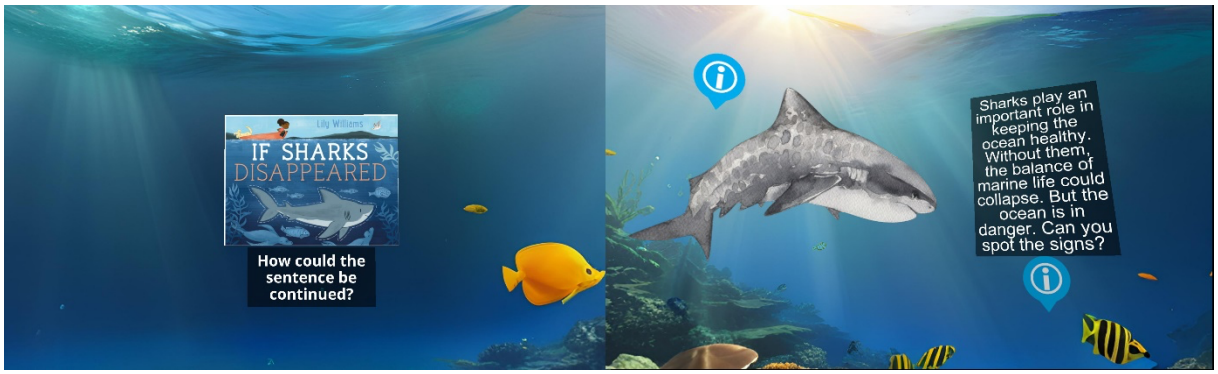



Figure 3. Screenshot of the immersive VR environment based on the picturebook *If Sharks Disappeared* (created with AR2VR)

As part of the pre-task, learners need to be informed of the purpose of the VR environment and receive a brief introduction to the functions of the VR tool and how to use it. Depending on the learners' level of language proficiency and their familiarity with VR, a linguistic introduction of important chunks might be needed (e.g., to keep oceans balanced, the top of the food chain). During the while-exploring phase, learners are immersed in a 360-degree VR scene created by the teacher that is based on the text and illustrations of the picturebook (parts of which can be seen in Figure 3). In this case, the VR scene shows an underwater ocean scene featuring various animals, such as sharks, turtles, and fish. Several information points and quizzes aim to raise learners' awareness of the importance of sharks in the ecosystem (see Figure 4). This aims to encourage learners to examine the values that guide specific actions, which is mentioned as a goal of GCE by the UNESCO framework (2015). As a pre-reading activity, learners can see the cover and title of the picturebook and are asked how the title *If Sharks Disappeared* might be completed (see Figure 3). With this reflection question, learners can activate their prior knowledge of the interconnectedness of the ecosystem. Understanding the effects of events on local and global levels is crucial for citizens to make informed and responsible decisions (UNESCO, 2015).


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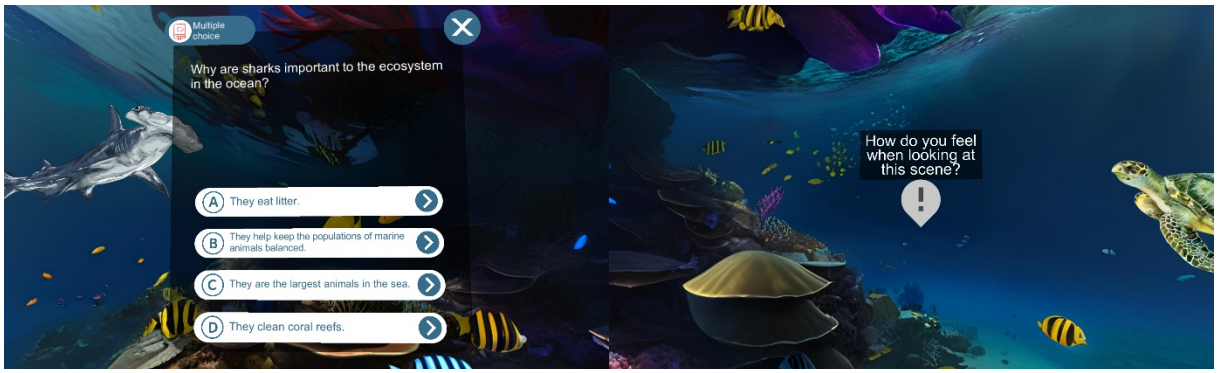



Figure 4. Screenshot of the immersive VR environment based on the picturebook *If Sharks Disappeared* (created with AR2VR) to illustrate the quizzes and reflection questions

VR learning environments that provide a high level of presence and agency increase learners' interest and motivation, thereby improving learning outcomes (Makransky & Petersen, 2021). Since the developed lesson sequence uses the tool AR2VR and (cardboard) VR headsets, it is an immersive VR environment. Furthermore, students can move through the different scenes independently and at their own pace, which increases their feeling of being in control. To decrease cognitive load, the focus is on the relevant content, and scaffolding is provided, including clear signs for moving to the next scene and icons for quizzes, input, and reflection questions that are used consistently. Additionally, real-world connections and gamification through quizzes can foster intrinsic motivation (Müller, 2018). In the VR-Storyworld Approach, learners are active users of digital technology and not only passive observers.

After having explored the VR environment, learners can read the picturebook in small literary circles while answering questions that encourage deeper engagement and critical thinking during the while-reading phase. To include all learning dimensions of the UNESCO framework, teachers should be mindful about incorporating questions that highlight ways to take action, promote reflection on values guiding specific actions, and foster knowledge about global issues. In this case, learners can be asked to describe how the picturebook influences their emotions with the aim of encouraging reflection on the use of colours and illustrations to create the mood. Furthermore, learners can be asked to find adjectives describing sharks to analyze how word choices influence opinions. For deep reading, even when working with more fact-oriented

picturebooks, it is important that learners move beyond traditional comprehension questions but critically analyze the texts and relate them to their own experiences (Bland, 2018). For instance, learners can be asked to think about ways to actively help protect sharks in their daily lives. Hence, by integrating analogue picturebooks with a digital virtual environment, this approach supports the promotion of sustainable actions according to the action dimension of the UNESCO framework.

As a post-task, learners then return to the VR-Storyworld. This time, however, they are asked to create a new environment or edit existing scenes with input, reflection questions, or quizzes for their peers. This aligns with the domains of digital communication and collaboration, as well as digital content creation of the European digital competence framework (DigComp), as they use AR2VR responsibly to create and edit digital content (Redecker, 2017). Here, learners can be asked to add information about other marine animals and identify their role in the ecosystem. This helps highlight the interconnectedness of our world. Additionally, they can practice their writing skills by drafting a clear and detailed prompt that AI can use to create an immersive VR scene inspired by the picturebook they read. Learners can start by choosing a scene from the picturebook they find particularly important and describe the setting and mood in detail. Process scaffolding is needed to support them. For instance, the steps for describing the elements of the prompt can be outlined. Learners can focus on describing the setting, characters, atmosphere, and other details shown in the illustrations of the book. Then, sentence starters can help them to develop a final version for the prompt.

## Pedagogical Potential and Suggestions for Practical Steps

The application of the VR-Storyworld Approach as presented in this contribution illustrates how a VR authoring tool (here: AR2VR) can be used in ELT to promote the reading of picturebooks in the context of GCE. Consisting of four phases, (1) pre-task, (2) while-exploring, (3) while-reading, and (4) post-task, the approach suggests using VR in the second phase through teacher-generated worlds that introduce pre-selected picturebooks, and in the fourth phase through learner-generated worlds that encourage learners to design their own worlds on the basis of a picturebook of their choice. As such, learners are given an opportunity to create content for their own VR environment in a digital space while developing language skills and connecting with issues of sustainability.

The approach can be adapted to other types of texts, such as songs, poems, and young adult literature, or a combination of different types of eco-artefacts (Summer, 2021). It may also be an option to transform analogue texts into a VR environment that includes digital interactive elements. However, it must be noted that learners should not wear VR headsets for an extended period, as high-immersive VR might lead to motion sickness (Yudintseva, 2024). It is advisable for VR not to replace traditional approaches to reading and dealing with texts in ELT, but to explore themes and language items before reading. Combining literature and VR, learners are offered an even more immersive and active form of engagement that goes beyond the relatively passive nature of traditional reading (Zahiu et al., 2023). The focus should always lie on fostering autonomy and giving students plenty of choice. This requires scaffolding and differentiation to make texts and technology accessible to the diverse needs of learners. Evidently, and this is important to note, '[t]he inclusion of digital media does not automatically ensure innovative or high-quality teaching' (Theurer et al., 2024, p. 47). Instead, the integration of digital technologies, particularly VR, in ELT, requires careful planning, rather time-consuming preparation, scaffolding, and, very importantly, effective classroom management for learning goals to be fulfilled (Summer, in preparation). When implemented successfully, working with VR in English lessons can foster learners' digital competence as they learn to create, adapt, and share their digitally created VR environments in alignment with the competence domains of digital communication and collaboration and digital content creation of the DigComp framework (Redecker, 2017). As Zirkel (2025) highlights, however, VR should only be used sustainably if it offers a clear advantage over other traditional forms of media. In this approach, VR allows learners to create immersive digital learning environments, a unique advantage of this digital technology.

With reference to the SAMR model by Puentedura (2006), VR provides opportunities for the creative redefinition of tasks that was previously not possible. Through the VR environment, learners can increase their awareness of injustices and their relevance to their own lives as the technology allows them to be immersed in new learning scenarios and view issues from other points of view. This helps them develop a sense of agency and visions of a more just and sustainable future, which, as Römhild (2025) emphasizes, is crucial. Combining the affordances of picturebooks and VR, the VR-Storyworld Approach thus promotes the knowledge, skills, values, and attitudes needed 'to contribute to a more inclusive, just and peaceful world' (UNESCO, 2015,

p. 15). Importantly, careful planning and a consideration of learners' needs, context, and language proficiency levels are required for a successful implementation, while also considering risks and dangers associated with the use of VR. Although the VR-Storyworld Approach aims to foster critical thinking and deep reading in the context of GCE, it remains to be seen to what extent these benefits can be realized in classroom practices.

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