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## VR in RE and moral education: report from a conference symposium at the NCRE 2022

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### ABSTRACT

This paper reports from a symposium exploring the application of Virtual Reality (VR) in RE. The contributors presented empirical case-studies of interventions and instructional designs that had been tested in classroom settings ranging from primary to teacher education. The presentations illustrate the ways in which VR can be understood as a rapidly developing family of technologies that, as teaching and learning material, offers a new form of mobility and the shifting of grounds in the RE classroom: It can bring learners to places of worship across the globe or provide immersive experiences of being at the receiving end of bullying as a starting point for ethical reflection. VR and 360-images enable us to encounter religion and worldview, oneself and different ways of exploring our subject in ways that strengthen the relevance of RE. The larger picture that emerges from the symposium is not one of revolutionary change but definite enrichment of the RE toolkit with rich avenues for future research.

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## Introduction

The bi-annual Nordic Conference of Religious Education (NCRE) has become an increasingly international gathering since its conception in the 1970s, with English as the preferred language. The symposium titled ‘A Beginners Guide to VR in RE: 360-degree images in RE Practice and Research’ brought together a Nordic panel dominated by Norwegians in the 2022 edition of NCRE held in Riga, Latvia. It was, to our knowledge, the first gathering of scholars to share insights from their research on VR in RE (including moral/ethics education).

The introduction of virtual reality (VR) in school education has been anticipated for many years, and yet empirical research on the educational application of VR remains scant (Dede, Jacobson, and Richards 2017, 2). A recent meta-study found that there have only been seven peer-reviewed studies on the application of VR in K-12 education from 2010 to 2019 (Tilhou, Taylor, and Crompton 2020). VR refers to a variety of technologies.

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Most typically one would think of VR glasses, but VR is also used to designate 3D worlds and 360-images that can be viewed on regular screens. While there is no doubt a ‘VR hype’ found across academia in the Global North, with University and Faculty leadership eager to establish ‘VR learning labs’ of different sorts, we in the symposium wanted to avoid the hype. Instead, we shared empirical case-studies grounded in the discourse of research and practice in RE and moral education.

A useful theoretical starting point is to think of VR as a family of rapidly developing technologies that can be operationalised as teaching and learning materials (TLMs) that, in the context of teaching religion, worldview and ethics, allows for new forms of *mobility* and *shifting grounds*. VR is nothing more or less than a digital TLM that teachers can use in the classroom to support learning and building (formation), much like other TLMs like flashcards, a short story, or a video. Conceptualising VR as a TLM allows researchers and practitioners to freely theorise VR technology in relation to pedagogy and theories of learning. This family of technology exists on a spectrum from high-end to low-end, where our symposium was interested in the latter, meaning forms of VR that are affordable and easy to implement in practice.

This latter point was an important justification for the symposium participants in terms of why we had chosen to investigate 360-pictures and 360-videos (collectively referred to as 360-images). Moreover, 360-images represent a novel TLM that allows students to interact more actively with the material than traditional images, still or moving. Compared to computer generated worlds and video games such as Minecraft, 360-images also has the advantage of giving a fully realistic and lifelike representation of the world ‘out there’.

Another important justification relates to *mobility*. Mobility refers to the way in which VR can transport learners from the classroom in which they are sitting, to places of worship or social situations rich with meanings to inform ethical reflection. Reversely, immersive technology can be understood to bring places of worship or religious artefacts into the classroom, albeit in a digital form. Even as new VR technology supplants older forms, we think this notion of mobility is helpful for researchers when thinking the potential of VR in RE and moral education.

A related concept is that of *shifting grounds*, as VR allows us to shift our perspective, and take the literal perspective of, say, a pilgrim (see [Figure 1](#)) or someone who is bullied. In terms of learning with VR, it is important to remember that students are also shifting grounds in the sense of moving back and forth between the virtual environments and the classroom. The VR experience can be exiting, but the actual learning and potential for formation is founded in the classroom activities that surrounds the interaction with VR. Thus, the notion of shifting grounds implies not just the changing of perspectives but also the tricky art of bridging learning activities and building across the digital and analogue.

In what follows, we will present the six case studies that were discussed in the symposium. Here it could be helpful to remind the reader of the distinction between 360-pictures and 360-videos, and invite them to explore the links to various websites where the VR-content used in the study may be viewed. Finally, we offer concluding reflections, looking ahead at possible futures for research on VR and how to theorise VR and immersion in relation to teaching religion, worldview and ethics.



**Figure 1.** Screenshots of the two 360-videos show by pilgrims in Mecca. <https://www.youtube.com/watch?v=Puu9wr4lFPk>; <https://www.youtube.com/watch?v=NSYDC1tk730>. Accessed 31.5.2022.

## Case studies

### *VR ethnography and the interpretative approach. Knut Aukland*

After two quasi-experimental studies involving 32 teacher students, I discovered that 360-video of rituals can be used as ethnographic material to challenge textbook representations and invite reflexivity. While the main purpose of the study had been to compare writing assignments of students that had seen or not seen 360-videos as part of their preparation, it was one of the extra elements in the study that turned out most promising. Half of the students (n:17) had been invited to complete the writing assignment before reflecting on their writing based on what they saw in two 360-videos. In what follows, I will report on these reflections that turned out to be the most compelling.

The writing assignment asked students to imagine that they had spent a day in Mecca and that they at the end of the day would write a letter to a friend telling them about their experiences. They were asked to use the textbook snippet, their own knowledge and fantasy as inspiration and spend 10–15 minutes on the assignment. After the writing assignment they were invited to watch two 360-videos of about 2–3 minutes each. Finally, they were asked to read through the letter they wrote before they had watched the 360-videos and compare what they wrote to what they had just observed. Then they were asked to answer three questions: (1) Did you make any assumptions about Mecca and the Kaba that did not match what you observed in the videos? (2) Would you change anything in the letter if you had watched the videos prior to writing the letter? (3) Does this give you an opportunity reflect on your own assumptions and different sources of knowledge about religion? In the following, I will provide some snapshots of student answers to question 3.

In their writing assignments, the students point to the limitations in textbook representations:

I feel that a text cannot describe reality in the precise way that a video from the place can. (s2)

The experience of different rituals is hard to explain in text. (s4)

Textbook descriptions are often a bit more “black/white” than reality. (s6)

The text is written objectively, and it can be hard to show how different Muslims practice. (s16)

Some students also began to reflect on their understanding of religions in general:

.it turns out that it is easy to imagine many things in different religions, how they do things etc. Media, people you are with shape images you have, and at the same time you get your own ideas of things that might not correspond with reality. (s1)

I am pretty sure that my assumptions regarding different sides of the religions I study this term are misunderstood and/or caricatured. (s6)

I thought for example that it would be completely silent. This might be because I associate religious places with church, where one typically meets the room with silence. (s15)

The influential interpretative approach (Jackson 2009) builds on key insights from ethnography and ethnographic studies of religion. Even though ethnography as a method plays such an important role in the interpretative approach, it seems that ethnography as a method in the classroom has been less discussed. Two exceptions include Eleanor Nesbitt (2009) and Jenny Berglund (2014) who both suggest that teacher students can conduct mini fieldwork. Based on my preliminary findings above, I propose that 360-videos of religious practices are ideal, low-cost and low-threshold materials that can help us include ethnography in the classroom, both on campus and in school. In contrast to regular video where a director has chosen what to focus on, 360-videos makes the viewer an active observer that must choose where to look. Moreover, YouTube has an abundance of 360-videos of religious practices, taken by participants, with a kind of raw, un-edited flavour that makes them rich arenas for ethnographic observation. While my study employed VR-glasses, I believe 360-videos viewed on laptop or tablet screens would also be effective in inviting learners to reflect on the limitations of textbook representations and their own assumptions regarding religion and religious practice. Moreover, using 360-videos as ethnographic material opens other possibilities in RE that should be explored in the future practice and research.

### ***Two birds with one stone: challenging students to produce and teach virtual tours of local religious buildings in teacher education. Inge Andersland***

As part of their five-year education, students in Norwegian teacher education are required to acquire professional digital competence, as specified by the PfdK Framework.<sup>1</sup> For each year, specific aspects of this competence are marked out for completion.

In the second year, the main focus is on professional digital competence in teaching practise. Therefore, a 15 ECTS credits course in integrative religious education for second year students includes a required activity with the purpose of critically assessing a digital education resource.

In the spring of 2022, we took the opportunity this required activity provided to combine our interests in professional digital competence with our approach to religion education. We were interested in how the production and use of virtual 360-tours in the form of 360-pictures from local religious buildings could serve two purposes. On the one hand, we believe the production of virtual 360-tours is a relevant technology to master as part of future teachers' professional digital competence. On the other, we believe that this technology enables effective and accessible representation of local religious groups in the RE classroom, which we see as a key element in fulfilling the aims of the new Norwegian

curriculum for integrative RE. In this presentation, we will focus on the practical and technological side of our experiences (See [Figure 2](#)).

About 30 students were required to work in groups of 3–4 to produce, use and assess a virtual tour of a local religious building (See [Figure 2](#)). Having had a specific religious group and their building assigned to them, the students were given the task of organising a visit and learn how to use a 360-camera (Insta360 ONE X2). The equipment and technical training were provided by the Learning Lab at the Western Norway University of Applied Sciences.

Using our learning management system (LMS), we also provided the students with an example of a virtual tour from a local church<sup>2</sup> and video instructions<sup>3</sup> on how to go about taking 360-pictures of a religious building. This included both practical information and more



**Figure 2.** Screenshot from the example of a virtual tour of the Søreide Church in Bergen, Norway. <https://prosjekt.hvl.no/360/soreidekirke/>. Accessed 26.3.2023.

strategic choices such as where to take images from and how to imagine the virtual tour.

The student groups were required to take three to eight 360-pictures from their location. They were also to record audio from each room where they took pictures and do a written interview with a representative of the local religious group. The audio was added to the scenes in the virtual tour, while the interview data were used as support for teaching about the religious group.

Before the start of a three-week period of required school placement, the students uploaded their image files and audio recordings to the LMS. These were then used to create virtual tours on the H5P-platform.<sup>4</sup> Each student group was then provided with a hyperlink to the virtual tour based on the images they had taken.

During their school placement at primary schools, each group were required to organise at least one lesson of teaching in RE using the virtual 360-tour. In this instance, the pupils experienced the virtual tour by use of the web browser on their personal laptops, often exploring the tour in pairs. In some cases, the students also showed the tour to the class as a whole using the projector canvas at the front of the classroom.

After the school placement, the students submitted a written text, of about 1000 words, in which they described the lesson and gave their assessment of the virtual tour as a digital learning resource.

Preliminary analysis of these texts indicates that the students all managed to use the technology successfully. In their assessments, they point to strengths and weaknesses of the virtual tours, compared to other learning resources, such as textbooks or physical excursions to religious buildings.

For example, using language drawn from physical excursions, students emphasised the value of letting the pupils ‘walk around’ in the religious buildings – making the virtual tours a ‘very good supplement’ to textbooks. However, compared to their previous experiences in gaming, some of the virtual tours quickly became ‘boring’, and even restricted – as the pupils could see doors that could not be ‘opened’.

### ***Using 360-videos in religious education – two phenomenological studies highlighting the viewpoints of the students. Martin Smith-Gahrson og Eva Mila Lindhardt***

#### ***Study 1: exploring a synagogue virtually***

How do secondary students (aged 12–13 and 15–16 years) experience virtual field trips (VFTs) to the Jewish synagogue as part of RE? This was the lead research question in a study conducted in a cooperation between teacher educators and student teachers at the University of Agder. In this study, the student teachers produced their own 360-videos in the Jewish synagogue in Oslo, and then used this 360-content as basis for their teaching about Jewish aesthetics during their school-based placements (See [Figure 3](#)). Previous research about this topic is scarce, but some studies have found that VFTs may increase elementary students’ motivation (Delacruz 2019) and may be efficient when it comes to time and cost, as compared to traditional and physical field trips (Lukes 2014; Krakowka 2012). As a didactic tool, VFTs may offer expanded learning opportunities, and elementary students report that experiencing a virtual field trip leads to a feeling of engagement, a sense of realness and virtual presence. However, the same elementary students also report concerns about technical malfunctions and a feeling of nausea and dizziness when using VR for this purpose (Han 2021, 179–195). None of the previous studies have based their findings on the use of



**Figure 3.** Screenshot of a 360-video showing a Jewish guide singing the Shema from the Norwegian Siddur in the Jewish synagogue in Oslo.

self-produced 360-videos from religious buildings, though, and this was a rationale instigating our study. Would low-cost 360-content produced by student teachers give the same affordances as the more advanced equipment used in previous studies?

Our findings show that the students experienced a sense of presence when visiting the religious building virtually, using VR-glasses where they inserted their own smartphones. The fact that they were able to freely look around and discover aesthetic details and religious artefacts supported this feeling. They also reported that the 360-videos provided a stronger sense of presence than a 2D-screen would do. Most of the students therefore preferred viewing 360-content to more traditional classroom methods as reading, writing, or listening to verbal instructions. Some students even reported that the immersive experience in VR made it easier to concentrate and focus on the contents of the video. However, some of them also experienced feelings of physical discomfort like dizziness or nausea if the 360-video was too long. Some of them even complained that it was difficult to grasp the contents of long-lasting 360-videos (9–10 minutes), implying that lengthy 360-scenes may lead to cognitive overload that may limit the understanding of the factual content. Further studies in this area should dig deeper into the question of whether the acquired feeling of presence may strengthen the emic and etic perspectives in RE. That is, how viewpoints from both within and outside a religious group may be comprehended, using VR in education See [Figure 4](#). Would the experience of being virtually inside a religious building, experiencing religious artefacts and practices, lead to a better understanding of a religious group, that is, the way they understand themselves? And to which extent should virtual tours to one religious group be complemented and compared with similar tours to other denominations, acknowledging the fact that virtual tours may be emotionally more predominant than verbal or written instruction?



**Figure 4.** Screenshot of a 360-video where the student ponders if she should react to a bully-situation in the classroom.

### ***Study 2: reflecting ethically on virtual situations***

What opportunities and challenges do elementary and secondary students (aged 10–13) experience when VR technology is used as part of the ethics teaching in RE? This was one important research question in a second study where students were interviewed after a lesson where they saw 360-videos that contained ethical dilemmas with different outcomes. The 360-videos were produced by student teachers at the University of Agder. Previous studies have pointed to the possibility that presence in a virtual environment can

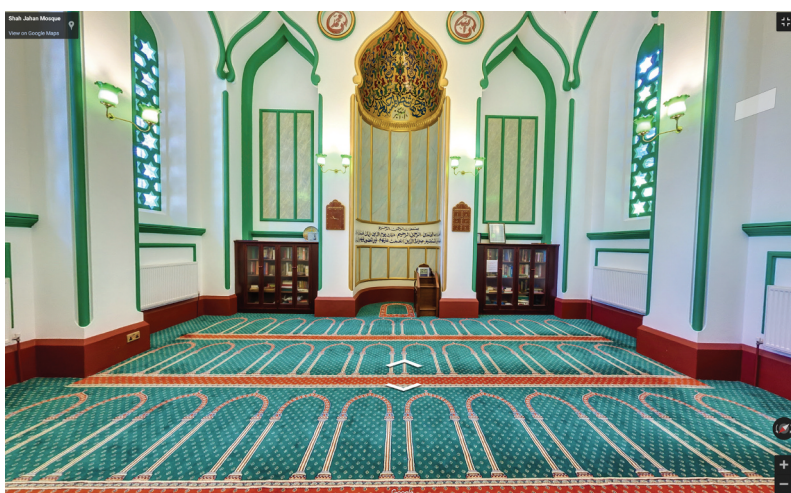


provide an increased learning outcome and create more student engagement (Loup et al. 2016). One of the things that the students highlight in the interviews is the feeling of being present. The use of VR gives the students an experience of physical closeness to the people they see in VR, and this makes it easier to see the facial expressions and to perceive emotions. As one pupil puts it: ‘You can kind of feel what it’s like to be kept out . . .’. Several students express that the experience with the ethical cases in VR can be transferred to other situations, and that it became easier to think about what they themselves could do if they got into similar circumstances. However, some of the students describe challenges of physical and technical nature using VR. This aligns with previous research that points to possible cybersickness and nausea (Fernandes et al. 2016; Madrigal et al. 2016). In addition, some students report of pain on top of the nose using the cardboard-VR-glasses and not being able to see clearly because of the quality of the video.

All in all, the findings show that high-taxonomic teaching programmes with VR can help students to reflect ethically on various alternatives of action and that VR can work well as one of several teaching tools to facilitate ethical reflection in the classroom. However, there is a need for more observational studies that examine how ethical discussions in the classroom are affected by the experience of presence through VR.

### ***Learning about Islam, learning about oneself: exploring the potential of using 360-pictures of mosques in RE. Anne Siri Kvia and Knut Aukland***

This study reports from two interventions in a Norwegian upper secondary school (year 18–19) with teaching materials based around 360-pictures designed by an RE teacher/teacher educator and a researcher. The original problem we wanted to solve was to understand how we can make use of 360-pictures of places of worship viewed on a regular screen (laptop or tablet). In both interventions, we designed writing assignments in relation to 360-images of two different mosques (Al-Aqsa in Jerusalem and Shah-Jahan Mosque in London) (see Figure 5).



**Figure 5.** Screenshot from the Sha Jahan Mosque in London. <https://www.360virtualtour.co/portfolio/shah-jahan-mosque-360-virtual-tour/>, accessed 1.6.2022.

The design of the first intervention took the curriculum for the subject *Religion and Ethics*<sup>5</sup> as its starting point, in particular the aim that students should be able to describe and analyse some aesthetic and ritual expressions in Islam. Inspired by the interpretative approach (Jackson 1997), we wanted to emphasise diversity within religious traditions; hence, we included two different mosques built in a Muslim majority and minority context. In this way, the first intervention began with an introduction to Islam before inviting pupils to locate central aspects of the mosque such as the *mihrab*, compare these across the two mosques, before reflecting on their differences. The pupils worked with these questions in pairs and turned in a text after the lesson.

For the second intervention, we wanted to see if 360-pictures of mosques can be a starting point for more reflexive work, again inspired by the interpretive approach (1997) but also the new RE curriculum in Norway (UDIR 2019). In the second intervention, we therefore let pupils engage with the images without any introduction to Islam or Islamic architecture, and designed writing assignments that asked them to pay attention to thoughts, interests and reactions they might have. The pupils answered individually and handed in their text after the lesson. Whereas the first intervention explored how 360-pictures can be used to learn about mosques and religions, the second explored if 360-images can be used to explore oneself and one's reactions when encountering places of worship.

We gathered a total of 28 texts by pupils from these interventions that we have begun to analyse. Our findings from the first intervention indicate that

- 360-Pictures viewed on a screen are a good tool for pupils to identify key architectural aspects and familiarise themselves inside places of worship.
- By using two different mosques, pupils get first-hand experience of diversity within a tradition.
- The possibility of exploring and comparing two (or more) mosques appears to be a valuable affordance particular to 360-pictures.

Turning to the second intervention, our understanding so far of the data indicates that

- Many pupils report positive feelings and reactions in their encounter with the mosques and point to the beauty of the building and art in both mosques.
- 360-Pictures can give pupils the feeling that they 'are there', even when viewed on a regular screen. Some pupils report that 'it felt like as if I was actually standing there'.

We found it difficult to understand the pupils' strategies in making sense of their encounter with the 360-pictures. Both because most pupils provided very short answers in the writing assignments, and because of the limitation of the data collected. Turning to the second intervention, we think that the pupils' positive feelings and reactions to the mosques may be a fruitful point of departure in utilising 360-pictures to combat prejudice against Islam and Muslims (Toft 2021). Toft suggest two didactical approaches when working to prevent prejudice: (1) empathy and shifting perspectives and (2) to establish alternative cognitive associations (Toft 2021, 172–77). In further research, interviews with the pupils would provide more insight into their experiences with working with 360-pictures. The interviews could focus on whether the encounter

confirmed previous understanding or provided new insights, and if the encounter gave them new understanding of themselves and their view of religion in general. Connecting the encounter with 360-pictures of places of worship with the pupils' reflexivity is something we would like to develop further in future research.

### ***Ethical competences and VR in moral education: using VR-glasses and 360-video from the perspective of a victim of bullying. Simon Simchai Hansen***

My master thesis examines how a teaching design with VR glasses and 360-video can enhance pupils' ethical competences in moral education for age 11–13 years. The study explores three research questions; how and to what extent does the instructional design support (1) cognitive competence, (2) emotional competence and (3) action competence. The framework for the study is inspired by educational design research and aims to contribute practically and theoretically. The study proceeds by proposing a model (see [Figure 7](#)) for ethical competences consisting of cognitive, emotional and action competence, as well as developing and designing teaching materials that were tested with two interventions, at sixth and seventh grade. The model for ethical competences is inspired by Eidhamar et al.'s description of moral development and Narvaez & Bock's (2014) 'four component model'. The studies data material consists of pupil texts (n = 30), focus group interviews (n = 14) and observation, that is thoroughly analysed based on the model for ethical competences.



**Figure 6.** Screenshot from a scene in the 360-video where the viewer is placed in role of someone who is bullied. [https://www.youtube.com/watch?v=Sxd2gTWUA\\_k](https://www.youtube.com/watch?v=Sxd2gTWUA_k). Accessed 26.3.2023.

The pupils watched a 360-video where they were invited to take the perspective of a victim of bullying (see [Figure 6](#)). Bullying as a topic was picked because it is a familiar issue for the pupils. Also, discussions and reflections on relatable issues can be applicable to the pupils' own life, and it has been argued that moral education works best when it affects pupils personally (Franck and Löfstedt 2015, 50–55). Based on the 360-video the pupils were to answer written assignments inviting them to reflect on different aspects of

Ethical competences			
Competences	Cognitive competence	Emotional competence	Action competence
<b>Explanation</b>	<i>The competence to reason and reflect ethically</i>	<i>The competence to use emotion as motivation to act morally</i>	<i>The competence to use emotion and ethical decisions in specific moral acts.</i>
<b>Sub competences and characteristics</b>	<ul style="list-style-type: none"> <li>• Understand ethical problems</li> <li>• Reason and reflect ethically</li> <li>• Reason and reflect critically</li> <li>• Understand consequences</li> <li>• Reflect on process and outcome</li> <li>• Value tradition and institutions (rules and norms)</li> </ul>	<ul style="list-style-type: none"> <li>• Empathy, shame, guilt, care etc.</li> <li>• Conscience</li> <li>• Understand emotions and emotional expression</li> <li>• Take others perspective</li> <li>• Immerse oneself in other people's life situation</li> <li>• Good at communicating</li> <li>• Respecting others</li> <li>• Past experiences</li> </ul>	<ul style="list-style-type: none"> <li>• Desire to solve problems and conflicts</li> <li>• Brave</li> <li>• Taking initiative</li> <li>• Intervene and stand up (for yourself and others)</li> <li>• Help others</li> <li>• Develop ethical identity and integrity</li> <li>• Caregivers</li> <li>• Violence and revenge</li> </ul>

**Figure 7.** Model for ethical competences developed by Simon Simchai Hansen.

the movie, including taking the perspective of different actors in the film. The assignments were analysed as data. Supplemented to this, pupils were also interviewed in groups about the 360-video. The goal was that the instructional design would stimulate the pupils to reflect morally, and in this way contribute to enhance pupils' ethical competences.

The primarily findings indicate that the instructional design did support the pupils' ethical competences. The study further provides insight into the characteristics of ethical reasoning of pupils aged 11–13 years. Most interesting is the pupils' distinct tendency to reason ethically in relation to consequences as part of the cognitive competence. This is something that RE and moral education should utilise by building on pupils' tendency to reflect in terms of consequences, and at the same time challenge such views with other ethical perspectives. In relation to emotional competence, the pupils show the ability to take the perspective of several different actors from the 360-video through empathy, and some pupils also got emotionally involved in the movie. VR glasses is often referred to as the 'ultimate empathy machine', because of the high level of immersion and possibility to experience any situation from any point of view (Herrera et al. 2018, 1–4). Therefore, an interesting empirical question is to what extent VR glasses and 360-video, to greater extent than other teaching materials (such as movies and literature), contribute to the pupils taking the perspective of the main character and in this way experience empathy. The pupils display great confidence in adults and caregivers in relation to action competence. Caregivers as a topic is not discussed in in the research literature related to how pupils reflect ethically. The role caregivers play in pupils' ethical reflection is therefore something the field should explore further. Some pupils also highlight revenge and violence as possible course of action, raising interesting questions in moral education.

## Final reflections: the future for VR in RE and moral education. Knut Aukland

It is worth asking what the symposium discussions generated in terms of insight, and indeed why scholars and practitioners of RE should care about VR at all. An important take away for the broader field, is that it is instructive to think of VR as related to the use of images and films in the classroom on the one hand, and field trips on the other. Many scholars would be quick to point out that an immersive experience of being inside a church with VR glasses could never replace a field trip. This is true in the same way that studying images of a church in a textbook could never replace a field trip. The point, however, is that studying images (or using VR technology) provides us with opportunities of learning that field trips do not, and vice versa. The value of VR as a TLM is not in competing with but rather complementing existing ways of working in the RE classroom.

Another important lesson from the case studies is that the use of 360-images does not acquire any special knowledge, know-how with technology or a classroom set of VR-glasses. All you need is basic familiarity with computers or tablets. Our claim would be that any RE teacher can visit sites like [visitmysmosque.org](http://visitmysmosque.org) or Al Jazeera to explore 360-images of mosques and pilgrimage in Mecca, and begin to test their usefulness in their own teaching the next day. Moreover, two of the case studies show how RE teacher students themselves can create 360-content for their own learning and teaching.

The larger picture that emerged from the symposium was not one of revolutionary change, or a sense that VR as the alleged ‘empathy machine’ holds a great promise for RE and moral education. However, the case studies do show the broad range of possibilities and actual relevance of VR for teaching about religion, worldview and ethics. Several of the case studies confirm that 360-images give students and pupils a sense of being present in the another (virtual) world, a characteristic referred to as *immersion* in VR research. There is no doubt in our minds that the active use of VR technology and the enthusiasm it creates in the classroom can help stave off the impression that RE or religion as such is something old-fashioned, out of date or of little relevance in the contemporary world. At the same time, two of the case studies also find that students can find 360-pictures boring and 360-videos too long. That being said, the conclusion is that VR ought to occupy both a legitimate and promising place in the RE toolkit today and in the future.

We recognise the need for further theorisation and empirical work on VR and 360-images in our fields. Any claim that teaching/learning with VR is more valuable or effective than other forms of teaching/learning bring our research into a complex landscape of causality, quantitative methods and randomised control trails that are a far cry from the methods used by most of us with backgrounds in the humanities and social sciences. Such studies would be welcome, but we think our case studies reveal the value of qualitative and experimental studies that contribute to and bridge RE theory and practice, both at the university and school level. The symposium sets the stage for future research, promising leads, but also point to methodological paths not taken. For instance, none of our studies tried to capture more closely the way in which students directly engaged with 360-images through video/audio recordings from classrooms or screen recordings from laptops/tablets. Much of the research was also ongoing at the time of the symposium and thus under-theorised.

How can we theorise VR in RE? And how are we to theorise the quality of *immersion* in relation to teaching religion, worldview and ethics? In the ‘Introduction’ section, we

suggest framing VR as a family of technology that constitutes a TLM that enables new forms of mobility and a shifting of grounds across the insider and outsider, the digital and analogue. A second theoretical framing is that of *encounters* on three levels, inspired by Rob Freathy and Helen John's article on big ideas about the study of religion (Freathy and John 2019) and the concept of *learning how* to explore religion (Aukland 2022). As a TLM, VR facilitates three forms of encounters: Encountering (1) religion and worldview, (2) encountering oneself and (3) encountering different ways of exploring religion and ethics.

At the first level (1), there is no doubt that 360-images allow us to stage novel and exciting ways for learners to encounter religion and worldview, but also to create such encounters by building their own virtual TLMs. In contrast to costly fieldtrips, 360-pictures give low-threshold access to explore different mosques side-by-side, giving pupils and students a first-hand experience of diversity within a tradition.

At the second level (2), 360-images allow us to encounter ourselves in various ways. This is a less obvious point. Two of the case studies show that teacher students and upper secondary pupils could successfully use their engagement with 360-images of religion to explore their own emotional and cognitive reactions, and what those reactions might tell them about the way they view and understand religion or specific religions. 360-Images successfully facilitate reflexivity because they can be used to stage productive encounters with diversity and the religious/non-religious Other. In the context of teaching ethics, 360-videos put pupils in ethically rich situations that enable them to reflect with reference to a shared experience that their bodies have had individual responses to. VR can thus enrich moral education by including embodied dimensions of emotions and actions (our capability to act in difficult situations) in the work of ethical reflection.

Finally (3), 360-images and VR represent a new way to explore religion, worldview and ethics. Using 360-video as ethnographic material brings ethnography into the classroom and can be used to stage participatory observation as a method among others to explore and understand religion. It is also a new method for teacher students to create and prepare TLMs in their own practice, and to develop their own understanding of religion, place and materiality. In the context of teaching ethics, 360-videos with VR-glasses represent a new method to elicit empathy and emotional responses. Simulation is a relevant concept here since VR simulates situations that call for ethical responses in the viewer. The use of fiction is not new in ethics/moral education (e.g. Sporre et al. 2022), so a key question for future research is whether VR fiction brings something qualitatively different beyond being a new and exciting way to tell stories.

It is our hope that the symposium, the case studies, and our theoretical framing of VR and 360-images in relation to mobility, shifting grounds and three forms of encounters can be useful in the future research and practice.

## Notes

1. <https://www.udir.no/in-english/professional-digital-competence-framework-for-teachers/> [accessed 08.06.2022].
2. <https://prosjekt.hvl.no/360/soreidekirke/> [accessed 08.06.2022].
3. [https://youtu.be/Phg\\_cgW7sv4](https://youtu.be/Phg_cgW7sv4) [accessed 08.06.2022].

4. <https://h5p.com/> [accessed 08.06.2022].
5. Religion and Ethics is a mandatory subject for upper secondary pupils enrolled in Program for General studies in Norway. The subject is taught three 45-minute lessons per week in their last year of secondary school and students are assessed with a final grade and an oral exam.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

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