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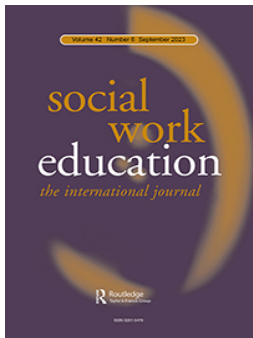
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# Creating sensory-rich experiences to convey qualitative research messages: using 360-degree video as part of an experiential relationship-based practice learning design

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## ABSTRACT

Technology-based immersive learning is an emerging field in social work training and education. This article outlines how findings from a published research project about long-term relationship-based practices in child protection were conveyed to newly qualified social workers using 360-degree videos as part of an experiential learning design. The rationale, production process and the learning design are outlined to demonstrate how learning through sensory-rich observations took place. A mixed methods evaluation from questionnaires and focus groups of the social workers experiences suggests that they felt virtually 'present', 'immersed' and able to 'experience the emotions' of the re-created research scenes through 'sensory-rich observation'. This article explores how these experiences resulted in social workers taking on board the research messages and being motivated to change existing practices to enable them to work in relationship-based ways with managers, other professionals and children and families.

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Relationship-based practice; child protection; 360-degree video; VR; observational learning

## Introduction

While there have been some recent innovations in the use of virtual reality technology in social work settings (Trahan et al., 2019), no literature exists that explores and assesses how these approaches can be used to deliver sensory-rich research messages. The purpose of this article is to outline and assess the effectiveness of a project entitled 'Research informed Virtual Relationship-based Practice Training' (RIVRT). RIVRT was used to deliver sensory-rich research messages to newly qualified ASYE (Assessed and Supported Year in Employment) child protection social workers (SWs) in the UK. The ASYE programme provides workers with extra support during their first year after qualification.

During a series of two-day training events social workers were offered 'the best seat in the house' to virtually follow a researcher. The re-created scenes were based on the events of a real research project (Ferguson et al., 2019)—the findings of which were used to create the RIVRT training materials. In RIVRT, social workers were able to observe what

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the researcher saw, felt, heard and explored when following a fictional social worker and family over an 11-month period.

The 360-degree films were part of an experiential learning design that consisted of a 7-module training package. The modules contained subtle differences between two versions of the same events (drawing on the research findings) to illustrate how 'Barriers' and 'Enablers' can occur in achieving effective relationship-based practice (RBP) in child protection work.

This article explains the learning design, the original research underpinning RIVRT and describes how the materials used in this subsequent project were created and delivered. The article also uses post-training focus groups and questionnaires to explore the effectiveness of the learning design by outlining the trainees views on how effective they felt the immersive 360-degree video headsets were in allowing them to 'feel' the sensory-rich 'aliveness' (Holway, 2015) of the re-created research scenes. Also explored are the learning processes of sensory observation when engaging with the RIVRT design and how the experiences of the training may influence the trainees future practices. The results illustrate that the social workers did feel immersed and able to access the research messages through sensory observation and that these experiences had the potential to change their future RBP practices. To set the context for RIVRT, a brief explanation of the original research project (ORP) is necessary.

## **The original RBP research project**

The author was part of a research team that during 2016–18 spent 15 months shadowing social workers and observing the impacts of organizational life at two local authority child protection teams in the UK. The ORP used an ethnographic approach to gather data and was unique because it was the first-time that participant observation research had been undertaken into long-term child protection work. It aimed to explore what enabled or prevented child protection social workers from establishing and sustaining long-term relationships with children and parents. Reed (2018) and Trevithick (2012) argue that RBP is a highly influential lens through which what goes on between social workers and service users can be theorized and analyzed. The ORP resulted in the publication of several journal papers and outlined the processes that enabled and created barriers to effective RBPs in social work child protection teams (Beddoe et al., 2022; Cooner et al., 2020; Disney et al., 2019; Ferguson et al., 2019, 2021, 2022; Leigh et al., 2021). In late 2019, the author undertook a new project in which the messages from the ORP were used to form the basis of the RIVRT project. The site of this current study was not one of the original research locations.

## **Literature review**

### ***Why create RIVRT?—practitioners accessing research***

As well as journal publications and conference presentations, it is important to find different methods to get research to practitioners, managers and policy makers to influence change (Reed, 2018). Anecdotal experiences during the ORP

suggested social workers and managers found little time to engage with research, this is not an unfamiliar finding in social work literature (Ferguson, 2016; Ravalier et al., 2021).

Accessing research or not can result in what Morrison (2006) describes as the ‘authoritarian’ and ‘authoritative’ social worker. The authoritarian social worker may claim they are using research-based approaches but will have difficulty naming the research thus tending to base their decision-making on consensus or status. Authoritarian type decision-making maybe less reliable and more likely to fall apart when challenged (Gambrill, 2001). McCafferty (2022) suggests that in authoritarian type situations social workers may cite research that tends to favor more interventionist decisions discounting opportunities for rehabilitation in cases of permanency planning. In contrast, authoritative social workers may demonstrate they use research to make professional decisions that are evidence-based and informed. These decisions are normally underpinned by social work values and thus tend to be more impartial, reliable and in line with approaches that can support RBP approaches. Therefore, it is important to find creative ways to make research accessible and meaningful for practitioners.

### ***Ethnography, sensory-rich observation and 360-degree video***

In creating the RIVRT project, 360-degree videos were used as one part of an overall experiential learning design. Conveying the immersive, sensory-rich ‘aliveness’ of the 360-degree video observations was important for the following reasons. In the ORP, we used an ethnographic approach to gather data. We observed participants and audio-recorded interactions between service users and practitioners as well as the activities and interactions of social workers and managers in their respective organizations over a 15-month period (Leigh et al., 2021). Social workers were followed everywhere they went, including inside and outside of service users’ homes as well as offices and the community. In this way we captured the movement and atmospheres involved in social work, for example between social workers and families in homes and even in the movement from the car to the front door, all the while capturing their thoughts and feelings. We were able to get near to practice using these mobile, sensory ethnographic techniques to experience what the interactions and connections in social work were like. To ensure our recordings of practice kept the ‘aliveness’ of the observations (Holway, 2015, p. 123), the researchers stayed close to the participants’ experiences and recorded in a style that seamlessly combined events and feelings as they were experienced at the time (Disney et al., 2019). To illustrate the findings, key scenes from the data that best captured what was said and done, as well as the atmospheres of interactions and experiences over time, including their sounds, moods, and emotional textures(basically, how the work and relationships felt)were chosen from the data to be presented in our published works.

An aim of RIVRT was to re-create the ORP observations so social workers could get as close as possible to the researchers, social workers, managers and service users experiences as possible by feeling the ‘aliveness’ of the lived experiences. We aimed to achieve this level of sensory-rich observations by using immersive 360-degree videos. At the time of writing, 360-degree video has not been used to convey RBP research experiences.

### ***Differences between 360-degree video and virtual reality***

The use of immersive virtual reality (VR) technology in social work training and education is an emerging field (Trahan et al., 2019) and it is important to clarify terminology. VR experiences normally involve computer-generated environments and people where the viewer controls their movements and interacts with objects using a VR headset and controller.

In this paper a distinction is made between VR technology and 360-degree video experiences. A 360-degree film enables trainees wearing headsets to be immersed by completely blocking out all external stimuli (Figure 1). Social workers can move their head up, down, back and in front to simulate the feeling of turning one's head to look in various directions like in real life. Compared to VR, 360-degree video uses 'live action films' rather than computer-generated artificial environments and people (Metsis et al., 2019). With 360-degree film, the social workers cannot move independently or manipulate their environment, rather, they are a passenger watching a story unfold with a 360-degree field of view and sound (Roberson & Baker, 2021). 360-degree video made it possible to faithfully re-create and convey the facial features, body language, sounds, tones, interactions, atmospheres etc in the ORP findings.

Cost was also a factor, creating VR is an expensive undertaking requiring multi-disciplinary teams (Davis et al., 2021). Creating 360-degree films is less expensive and research by Metsis et al. (2019) in the United States found that users exposure to 360-degree immersive films compared to VR environments produces equivalent results when addressing issues such as social anxiety. However, little research currently has evaluated the advantages and disadvantages of the various immersive technologies through side-by-side comparison.

### **Method**

The purpose of this study is to examine the social workers views of their learning after engaging with the RIVRT learning design. Three areas are explored and these are based on the following research questions (1) how effective are immersive 360-degree video headsets in allowing social workers to feel the sensory-rich 'aliveness' of re-created



**Figure 1.** Social workers using 360-degree video headsets.

research scenes? (2) What were the learning processes of sensory observation in using the RIVRT design? Finally, (3) how might the experiences of RIVRT influence their future practices?

### **Research design**

The aim of the study design is to explore not only the results of the user experience but also their learning experiences (Oliver & Conole, 1998). A mixed methods data collection approach was used consisting of two stages. The first used a modified questionnaire based on the work of Tcha-Tokey et al. (2016) who look at measuring user experiences in immersive virtual environments. It explores five user experience areas, presence, immersion, usability, emotion and experience consequence.

Whilst the questionnaire information provided a wealth of data, quantitative data by its nature are quite limited in helping us understand why the social workers chose to respond how they did (Cohen et al., 2000). So, the second data collection stage involved four focus groups that sought to examine in detail an understanding of the social workers complex learning experiences of the RIVRT learning design (Oliver & Harvey, 2002). An open ended semi-structured interview schedule was used to explore the social workers experiences. The focus groups allowed the social workers an opportunity to describe their experiences on their own terms.

### **Procedures**

The research was ethically approved by the participating Children's Trust and the University Ethics Committee. The social workers in the study gave their informed consent and were made aware of their right to withdraw from the study. The data was collected from four cohorts. Prior to attending the training, all social workers were asked to bring their laptops so they could complete the online elements of the evaluation and record pledges. The questionnaire data was collected at the end of the second day of each training event. The social workers inputted their responses to a questionnaire hosted on a secure online Trust website using their laptops. The focus groups took place immediately after the social workers completed the online questionnaire.

### **Participants**

Of the four cohorts that undertook the training, 21 social workers consented to their online questionnaire data (19 female and 2 male) being used for this study. 17 social workers then took part in four focus groups (15 female and 2 male). Their ages ranged from early 20s to mid 50s, were from a range of ethnicities and all were recently qualified and had less than 8-months post qualified front line social work experience. All participants were working in child protection teams.

### **Data analysis**

This study contains descriptive statistical content obtained from the online questionnaire and qualitative analysis data gathered using focus groups. The questionnaire uses



a ranking approach from 1 (strongly disagree) to 10 (strongly agree), other questions use a more specific item (detailed where employed). The mean scores of the five areas are presented in the results section.

All the focus group responses were audio recorded and transcribed. The data was inputted into QSR NVivo 12 software and coded. The research questions were used as a starting point to guide the thematic analysis. The data was examined multiple times to draw out the themes. Standard techniques of constant comparison were used to produce the findings (Bryman, 2012).

Before exploring the findings, the following section provides the context for the study.

## **RIVRT—production, design and process**

### ***Co-production***

RIVRT was funded by a UK Children's Trust seeking to improve RBP in child protection services. The team leading on developing RIVRT consisted of the author and a senior social work manager from the Trust. They created the learning objectives and design for seven modules based on the findings from the ORP. The initial scripts and learning objectives were presented for discussion and revision to Trust-based 'RBP SW Champions Group' and a 'Young People's Group' who had experience of social work involvement. The actors playing the different roles in RIVRT were experienced social workers who volunteered to take part in the project. The young people also provided voice overs in RIVRT and all participants were able to provide ongoing feedback on the development of the scripts as the scenes were filmed and edited. In all revisions, great care was taken to remain authentic to the voices and findings of the ORP. In this way we tried to ensure the voices of the service users were present to inform the development of the research-based work and that the knowledge of the real world did not become secondary to disciplinary knowledge (Gilbert & Powell, 2010).

### ***360-degree video, story, techniques and equipment used***

In using 360-degree videos the aim was to provide the viewer with the 'best seat in the house' as they followed the story of a researcher 'Ranjit' and a social worker 'Louisa' working with a fictional 'Harris' family. Module 1 'Assessment in RBP—Week 1' begins with a referral from a Health Visitor and allocation to Louisa. The reasons for the referral are that the Harris children have witnessed domestic abuse. The father 'John' (age 36) has two children (aged 2 and 9 months) with his partner 'Fiona' (age 26) and is stepfather to 'Fiona's' eldest daughter 'Alarna' (age 11). The family have a history with the agency and this is Fiona's second relationship where domestic abuse has been present. Alarna's father is not on the scene. In RIVRT, we follow Louisa's engagement with the family over an 11-month period.

In the ORP, due to the large sizes of each case study, we focused on creating several smaller cases. In creating the fictional Harris family we were able to recreate what (Wengraff, 2001) calls a 'focal' or 'gold-star' case that 'within qualitative research samples deserve attention because they not only tell their own story but illustrate the general research findings particularly well' (Ferguson et al., 2021, p. 22). Therefore, the RIVRT



films used research findings to re-create scenes where Louisa faces hostility, hate and has to deal with resistance and conflict from John and Fiona. They also illustrate how during her engagement with the family Louisa and her manager deal with strong emotions and experiences of anxiety. The barrier films illustrate approaches from Louisa that prevent her from developing effective RBP approaches. In the enabler films Louisa demonstrates approaches for effective RBP by for example, being reliable, able to immerse herself in the day-to-day life of the family, getting emotionally close, helping them develop relationship skills and using supervision effectively. The differences in approach between the barrier and enabler films were subtle in terms of actions, body language, tone, approach etc. This subtlety allowed for greater realism to stimulate discussion as part of the learning process. Utilising the findings of the ORP, RIVRT demonstrates through Louisa's practises how individuals and organizations can enable effective RBPs.

To address problems other developers such as Roberson and Baker (2021) found in trying to remove 360-degree video equipment from their scenes, the author acting in the role of the researcher (Ranjit), was able to film and also record the movement in social work (e.g. office to car, car to front door, living room to kitchen, back to car, journey in car to next visit etc.) and ask Louisa questions prior to and after her visits with the family and other professionals. In this way, utilizing 360-degree video we were able to capture the thoughts and feelings of Louisa, her manager and family members. Several settings were filmed, including Louisa's open plan office, her manager's office during supervision, in the car going to and from home visits, core group meetings, interviewing parents in a waiting room before core group meetings, child protection review meetings, meetings with an Independent Reviewing Officer and different settings in the parents' home. During the training, the social workers viewed the immersive films on ClassVR Standard Headsets and headphones. Handheld controllers were used to navigate the films (ClassVR, 2022). The social workers were introduced and orientated to the headsets during the first module.

Some 2d films were also consequently embedded into the learning design to trigger observations and discussions. They also allowed the different characters to further outline their thoughts, feelings and reflections pre and post the 360-degree film scenes. The author filmed and edited all the scenes.

### ***Theoretical frameworks for the learning design***

The theoretical frameworks grounding the RIVRT project are Kolb's (2015) experiential learning theory (ELT) and Albert Bandura's social learning (SLT) and social cognitive (SCT) theories (Bandura, 1977, 1991, 2008).

ELT theory encourages 'learning through doing'. Learning is a 'process whereby knowledge is created through the transformation of experience' (Kolb, 2015, p. 49). The attitudes, skills and knowledge learners develop in an ELT process can influence change within their practice. ELT contains four processes that comprise the learning experience, these are experiencing, thinking, acting and reflecting. The immersive nature of 360-degree video and the associated learning activities in RIVRT were designed to encourage social workers to engage in sensory observation experiences to encourage thinking, relate their current practices to the re-created scenes and reflect on what changes they may need to make to engage in more effective RBPs.

In SLT (Bandura, 1977) and SCT (Bandura, 1991) Bandura argues that learning does not always require direct experiences and people can, by observing others learn to develop specific behaviors. He calls this process modeling; it is one through which a person can imitate observable behaviors and adapt them. Bandura (2008) contended that people learn by observing others because they can also vicariously experience the affect-level experiences of the person they are modeling. For example, after engaging in the ‘Enabling’ element of the RIVRT training, the learner might not feel anxious about using a RBP approach if they observe the satisfaction and joy of a social worker and family who have worked hard together to come off a child protection plan. Bandura puts forward four elements in how a learner may engage in vicarious learning through the observation of modeled behaviors:

- (1) Attention—This refers to the learner’s level of attention to the modeled behaviors. Greater attention may be encouraged if some kind positive outcome is available within the learning environment.
- (2) Retention—Defined as ‘an active process of transforming information about modeled events into conceptions for generating new patterns of behavior’ (Bandura, 2008, p. 1). Asakura et al. (2022) state that ‘This process requires the learner’s engagement with their own cognitive, affective and motivational skills to code their observation into their own learning’ (p. 304). To retain the knowledge, the learner must also have opportunities to rehearse the modeled behavior through activities such as discussions about what they have observed.
- (3) Motor reproduction—Is the learner’s capacity to imitate the observed behavior by putting the symbolically coded knowledge into practice. Though this may not occur until they are out in the field.
- (4) Motivation processes—The final level of observational learning depends on the learner’s motivation to adopt the desired modeled behavior.

These four elements when taken together illustrate the many ways learners can engage in observational learning by modeling and reproducing behaviors that are related to or different to those of the social worker they observe in the Barrier and Enabler films. In this approach to vicarious learning, the value of observational learning is highly related to watching the social worker’s success or failure in implementing RBPs.

### ***Learning process***

Prior to the four training events reported here, the author and senior social work manager ran a training event in which seven trainers from the Trust were introduced to the materials and engaged in the learning process as learners. The trainers then used these experiences to deliver the training events reported here.

The RIVRT project placed an emphasis on creating authentic, relatable learning experiences representing real world type situations. The storyline of Louisa’s engagement with the different members of the Harris family and other professionals over 11-months of casework was the theme that ran throughout the modules. The seven modules, periods and events are illustrated in [Table 1](#).

**Table 1.** RIVRT - Context of training materials.

Module title	Time period and stage
1. Assessment in RBP	Week 1 - The beginning
2. Developing a Plan in RBP	Week 4 - The process of developing the plan
3. Updating a Plan in RBP	Month 3 - Core Group Meeting before the first Review Child Protection Conference
4. Supervision in RBP	Month 4 - Louisa in Supervision with Andrea
5. Direct Work in RBP	Month 6 - Louisa engaging in direct work
6. Reviewing the Plan in RBP	Month 8 - second Review Child Protection Conference
7. Endings in RBP	Month 11 - reflections

RIVRT ran over two consecutive days with modules 1 to 3 delivered on day 1 and modules 4 to 7 on day 2. Each of the 7 module PowerPoints contained a consistent learning design. Table 2 uses ‘*Module 5 – Direct work in RBP—Month 6 - Louisa engaging in direct work*’ with the parents as an illustrative example of the design.

**Table 2.** Module 5 - direct work in RBP - month 6 - learning design.

Step	Activity	Resource(s)
<b>Introduction</b>		
1.	Module introduction and learning material links to the ORP. Introduction to where in the timeline Louisa is with the Harris family (e. g. Month 6). Note to trainees to raise any well-being concerns related to the storyline and approach trainers if headsets cause motion sickness, migraines etc.	PowerPoint.
2.	Introduction to <b>Barrier</b> section of module. Reminder of basic details of Harris family members. Set context of the scenes the social workers will view (location, and other pre-scene information).	PowerPoint.
3.	Outline learning aims and objectives (related to the ORP).	PowerPoint.
<b>Barrier version</b>		
4.	Outline questions (drawn from the ORP) for the trainees on Direct Work to think about as they undertake the next steps.	PowerPoint.
5.	Watch 2d Barrier film (3-min 3-seconds) where Ranjit discusses with Louisa (pre-session) her thoughts about direct work with parents.	PowerPoint. 2d film(s).
6.	Put on headsets and watch 360-degree Barrier film (3-min 7-seconds) of direct work in sync with other learners in group.	360-degree headset.
7.	Take off headsets and watch Louisa’s reflections on the activity – 2d Barrier film (1-min 53-seconds).	PowerPoint. 2d film(s).
8.	Social workers individually write down responses to questions posed in step 4 (handouts to record thoughts created specifically per module).	PowerPoint. Handouts.
<b>Enabler version</b>		
9.	Same as step 4 above	PowerPoint.
10.	Watch 2d Enabler film (4-min 24-seconds) where Ranjit discusses with Louisa (pre-session) her thoughts about direct work with parents.	PowerPoint. 2d film(s).
11.	Put on headsets and watch 360-degree Enabler film (6-min 37-seconds) of direct work in sync with other learners in group.	360-degree headset.
12.	Take off headsets and watch Louisa’s reflections on the activity – 2d Enabler film (3-min 34-seconds).	PowerPoint. 2d film(s).
13.	Same as step 8 above	PowerPoint. Handouts.
<b>Discussion and future changes</b>		
14.	As a group social workers share and discuss their barrier and enabler responses and learning. Trainers draw on ORP findings during discussions to encourage links between the research messages and future practice (using a ‘Training the Trainer’ guide). These discussions also contain opportunities for critical discussion about the ORP findings and their potential uses in practice. Then collectively discuss and share at least 3 to 4 pledges they will take from these discussions into supervision and practice to improve their RBP. End with a reminder of how the learning materials relate to the ORP.	PowerPoint. Handouts. Discussion with colleagues and trainers. Pledges document.

In some modules additional voiceovers from Alarna and 2d and 360-degree videos of John and Fiona giving their thoughts on current circumstances were also provided in steps 5, 6, 7 (Barrier) and 10, 11, 12 (Enabler) versions.

At the end of module 7, the storyline is that the research period has come to an end. At this point the researcher talks to Louisa, both parents and Alarna. This module contains two outcomes, the Barrier version sees the family remain on the child protection plan and Louisa frustrated and the family unhappy. The Enabler version sees the family no longer on a child protection plan, Louisa can demonstrate the steps required for a good RBP ending and the family feel equipped to deal with their circumstances with support from non-statutory agencies.

## Results

### Quantitative

In exploring the responses to how effective the 360-degree video headsets were in allowing social workers to feel the ‘aliveness’ of sensory observation in re-created research scenes, data from the questionnaire provided the following insights.

### Presence and immersion

When exploring presence and immersion, the questionnaire sought to find if the user through the virtual environment had a sensory feeling of ‘actually being there’, in the scene (Table 3).

**Table 3.** Presence.

Presence questions – Ranked: 1 = strongly disagree -> 10 = strongly agree	Mean score
The headset was responsive to the actions I initiated	9.43
The 360-video environment allowed me to feel as if I was ‘present’ in the scene	8.61
I was able to easily look around the scenes in the 360-films	8.52
I was able to look and examine the different features of the scenes freely	9.34
The visual display quality distracted me from concentrating on what was going on	3.65
The audio quality distracted me from concentrating on what was going on	2.86
I felt stimulated by the scenes	8.52
I became so involved in the scenes that I was not aware of things happening around me outside the headset.	8.28
I started to lose concentration while I was in the 360-degree film environment.	2.62
<i>The following immersion questions were ranked using the text in bold below.</i>	
I found this 360-degree film environment:	8.04
<b>Please rank: 1 = Amateurish -&gt; 10 = Professional</b>	
I found the 360-degree films:	8
<b>Please rank: 1 = Unrealistic -&gt; 10 = Realistic</b>	

**Table 4.** Emotion.

Emotion questions – Ranked: 1 = strongly disagree -> 10 = strongly agree	Mean score
I could empathise with the social worker in the 360-degree films.	9
I could empathise with the manager in the 360-degree films.	8.67
I could empathise with the members of the family (service users) in the 360-degree films.	9.52
I felt worried by something happening in the 360-degree film.	4.81
I enjoyed being in the 360-degree film environments.	7.48
At times I felt tense whilst in the 360-degree film environments.	8.48
At times I felt nervous whilst watching the 360-degree film scenes.	3.3
When I recognised good relationship-based practice it gave me a rush.	7.14

**Table 5.** Experience consequence.

Experience consequence questions – Ranked: 1 = strongly disagree -> 10 = strongly agree	Mean score
I suffered from fatigue during my interaction with the 360-degree film environment.	3.90
I suffered from headaches during my interaction with the 360-degree film environment.	2.38
I suffered from eyestrain during my interaction with the 360-degree film environment.	3.08
I suffered from nausea during my interaction with the 360-degree film environment.	2.19

**Table 6.** Usability.

Usability questions – Ranked: 1 = strongly disagree -> 10 = strongly agree	Mean score
I thought the headset was easy to use.	8.38
I worried whether I could cope with all the instructions given to me.	2.4
I felt confident using the headset controls.	8.57
I felt confident selecting the films.	9.05
If I use the 360-degree films again, I will find them easy to use.	8.62
<i>The following usability questions were ranked using the text in bold below.</i>	
Personally, I would say the 360-degree film environment is:	7.48
<b>Please rank: 1 = Confusing -&gt; 10 = Clear</b>	
I found the duration of the films to be:	5.76
<b>Please rank: 1 = Too short -&gt; 5 = Just right -&gt; 10 = Too long</b>	

The results appear to suggest that the trainees did have sensory feelings of being ‘present’ in the scenes and that their concentration was on the interactions taking place. They did not appear to experience any distractions and found the film environment professional and realistic and the quality of the video and audio did not distract them from the scenes.

### Emotion

Emotion is explored by what feelings the environment evoked (Table 4). Did the user feel empathy, worry, enjoyment, tension, nervousness in the virtual environment?

From the responses it appears the trainees did feel emotions, but some were felt more keenly than others as indicated. It appears that there was an element of emotional ‘aliveness’ felt using this medium.

### Experience consequence

This segment sought to explore issues such as fatigue, eyestrain, nausea, dizziness when using the 360-degree headset (Table 5).

The results indicate that whilst some discomfort was felt (fatigue, eyestrain) it appears that overall using the headsets did not cause too many issues that would have distracted the trainees from engaging in sensory observation.

### Usability

These questions (Table 6) assess how useable the social workers found the headsets and controllers.

Overall, the scores suggest that the trainees found the headsets easy to use. The trainees also seemed to find that the length of the films was ‘just right’.

The findings above suggest that the headsets did provide opportunities for sensory observation through a sense of presence and immersion in the scenes. When exploring emotion, it appears empathy was felt but emotions such as worry and nervousness were

not felt as strongly. There was also some discomfort in using the headsets but not a significant amount and the controls appear to have been easy to use. Some of these points are explored in more detail below.

## Qualitative

### *How effective are immersive 360-degree video headsets in allowing social workers to feel the sensory-rich 'aliveness' of re-created research scenes?*

The focus group responses suggest the social workers did feel a sense of presence because they felt the experience was *'very engaging ... like you're sitting next to them'* [SW4]. The following response is typical of the way social workers actively felt immersion in that the 360-degree video replaced their own senses in the virtual environment by enabling them to feel the emotion and tone in the scene and develop a level of empathy *'... I literally felt myself clenching my fists and having a physical reaction at points during the barrier videos, how the family were being spoken to'*. [SW10]. Immersion also appeared to allow the social workers to experience the atmosphere, body language, tone and emotions, *'The initial visit, where John was stood at the door. So, we sat down, but actually physically looking up at him stood at the door, feeling that feeling of if I wanted to get out of this situation, I couldn't because he's blocking the exit'* [SW6]. Here to trainees talk as though they are 'in' the scene. The scenes also appeared to evoke emotions such as:

*... 'like when for example good relationship-based practise was shown or good progression, you felt like at ease because it was like, OK, you're not sitting in an awkward, intense room ... and it felt just, not necessarily like I was jumping for joy, but there's less tension that I felt physically from being in the headset.'* [SW3]

An important element that appeared to bind this sense of presence and immersion was being able to relate to the family's journey, *'I felt I was involved in that case and it was almost as if it was mine. You know, I lived and followed the journey for the family from start to end and in that sense, it was very powerful'* [SW1]. The ability to relate was *'because I found the acting quite realistic you know, they were really good actors and I think that definitely played a part in making me believe that it was real'* [SW14]. This seems to indicate that having experienced social workers playing the different roles was important because they were able to convey a level of realism that may not have been possible using other actors.

There were some issues raised infrequently to note. Some social workers who wore glasses felt uncomfortable wearing the headset at times, there was a case of migraine and two social workers reported experiencing mild motion sickness due to movements in the scenes. However, ease of use, realism and relatable scenes appeared to enable the social workers to feel presence, immersion and emotion. This suggests that using the 360-degree headsets did appear to enable the social workers to feel a high degree of sensory-rich aliveness from the re-created research scenes.

### ***What were the learning processes of sensory observation in using the RIVRT design?***

Qualitative responses suggest several of the activities in the learning design encouraged learning through sensory observation. One factor that focused attention and concentration was the ability of the headset to block out external stimuli, *'I felt with the 2D videos if you guys were talking I would look over, but obviously when you've got your headphones and VR thing on, you can't do that'*[SW1]. This meant that they were immersed and *'... felt like I was a colleague of Ranjit, almost like a second observer'*[SW3].

Responses suggested social workers actively engaged in a process of transforming modeled behavior with a view to retaining this learning and adopting it into new practices, *'when you see good practice ... you kind of pick up ... role modeling that. So that gives you a template to use in your practice'*[SW16]. Also, a motivating factor was *'I think recognizing RBP I know I have already adopted in my practice and I was recognizing that and that made me feel quite good in some ways'*[SW7]. What appeared to help this process was the fact that *'... we had two versions so that really made you see what is and isn't good practice so it gave you that understanding, which I think was really good and made you reflect about yourself as a practitioner'*[SW16]. These types of responses suggested that the observations were not passive, but the social workers were engaging in cognitive, motivational and affective activities to code observations into their own learning with the potential to reproduce these in their practice.

The 360-degree videos were not the only effective elements of the design, the 2d video/audio, writing and discussion activities also encouraged reflection and learning based on what was observed. The social workers found that smaller groups of 6 to 8 participants made discussion comfortable because *'that facilitates discussion ... you're not feeling like when you're speaking, there's twenty other people looking at you'*[SW12]. Also, the discussions appeared to make the learning more *'meaningful than it would have been if we hadn't done that'*[SW6]. There were some disagreements about when the writing activities should occur *'... personally I think the discussions were good, but in terms of writing, not really because you discussed it anyway'*[SW13] compared to *'... following the videos ... that silence and writing down afterward what we'd taken from it. For me that was the main point of reflection ... I was thinking throughout, what would I have done?'*[SW4].

Finally, the data suggests the RIVRT activities aided learning because the model catered for *'... so many different learning styles'*[SW2]. However, based on feedback some changes will be made to the learning design (Table 2). This will involve writing then group discussion at Stages 8 and 13 given it was suggested this should be a group rather than individual activity.

### ***How might the experiences of RIVRT influence their future practices?***

The data suggested social workers became aware that being able to immerse themselves in the day-to-day lives of families by using tools such as *'genograms and ... getting to know their family ... is something that is really important moving forward'*[SW1]. One theme was the need to ensure all relationships are explored and respected *'... contacting Alarna's biological father ... that kind of went in a more positive direction ... to be aware of things like that and think outside the box and not just take things for granted like, oh well Dad's not been on the scene ... but explore why ... just being more aware'*[SW16].



Also, typical responses were how changing practice by being reliable and respecting power and inequalities can improve relationships with families, *'I probably have turned up to a visit 10-minutes late and assumed that I'm still going in ... it's not terrible practice, but practice where there is a lot of room for improvement'*[SW7] and *'... you know just being calm, being I wouldn't say persistent, I mean that in a positive way ... if families want you to leave, just making them aware that you are here and ... that you are there for them to talk to'*[SW3]. A raised awareness that they could get emotionally close to families through *'... active listening, being empathetic and then using all those values to work with families and focusing on their needs ...'*[SW11] led to an understanding that it is important to develop good holding relationships because if *'... the right support isn't in place it almost feels like a missed opportunity and also creates more resistance from the family'*[SW3]. The data demonstrated the social workers *'... had conversations about how we can make sure ... the social worker can also get help from other professionals involved with the family and to kind of consider what the needs of the family are and how we can best work together in a RBP way'*[SW13]. Also, recognizing that *'not one size fits all in RBPs ... you need to adapt to meet the needs of each family ... and their children...'*[SW12].

The responses also demonstrated a strong theme to change how social workers used supervision (Beddoe et al., 2022). Whilst they empathized that *'manager's also got boxes to tick and data to check'*[SW6]. They were aware that due to their ASYE status *'... our caseloads are low, but I think it's really kind of made me really think ...'*[SW17]. They appeared alert to the time issues caused by higher caseloads illustrated by the Barrier films and concerned these pressures did not negatively impact their RBP *'... the first thing I noted is the time element ... we need to focus on the time and share it out appropriately between our workload ...'*[SW12]. There was a determination to access support with anxiety and strong emotions when dealing with experiences of hostility and hate, being able to 'stand back' and observe this happening to Louisa in supervision meant that:

*... 'the one that stood out most was the supervision one ... I overlook it sometimes because it's to do with me rather than families, but actually being removed from the situation and watching someone else in that, I was recognising feelings that I felt and I was thinking, well, why isn't she (Louisa) saying anything? Why isn't she challenging it? And I thought, well you know that's me. So, I can't do that in the future, and I think it took that kind of removal to really show that.'* [SW16]

## Conclusion

Using a theoretically informed, mixed-methods research approach, this study illustrates that the design of the RIVRT training materials enabled social workers to experience the sensory-rich 'aliveness' of the findings of an ORP. The realism, ease of use, ability to reflect, record and discuss their learning suggested that they felt affirmed in what they do well and motivated to change elements of their practices to incorporate the RBP finding from the ORP. Whilst there were some experiences of discomfort in using the headsets, the shorter films of 3 to 10 minutes did not appear to cause many issues but the longer 360-degree films ranging from 10 to 13 minutes caused discomfort for a small number of

trainees. In designing future experiences, shorter films to prevent discomfort should be considered. Using a Barrier and Enabler method to illustrate examples of personal and organizational practices that can result in effective RBPs over a longer term in child protection work worked well in outlining the sometimes-hidden elements of social work practices. The themes suggest that social workers can use sensory observations to feel, reflect upon and code practices they want to retain or adapt to develop effective RBP with families. Whilst immersive learning in social work is an emerging field, it is suggested that using this method, compared to text-based methods, not only enables researchers to make their work accessible in a more authentic and realistic fashion, but also offers opportunities for practitioners to become research-informed by being able to articulate the sources that inform their practices. The findings from this study suggest that this method would be useful in other areas of social work education and training where a similar level of sensory-rich observation could develop learning. Whilst RIVRT type projects can be time consuming and costly to produce, the reusability of the materials can make the training cost effective in the longer term. Also, with the costs of 360-degree consumer video equipment and editing software becoming more affordable, it is hoped that sharing the findings of this project can stimulate others to develop equally creative methods of research dissemination and learning to promote good social work practices.

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## Ethical approval

This research was ethically approved by the Sandwell Children's Trust and the University of Birmingham Ethics Committee (ERN\_20–0140).

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