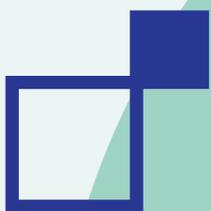




# **Preliminary Evaluation of the VR Pilot Programme**

Interim report  
September 2018



alma economics

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# Background

The purpose of this short paper is to summarise some initial findings from the preliminary evaluation of VR Pilot Programme. The aims of the evaluation are to:

- Have a clear theory of change that identifies the outcomes
- Identify what works well and what could be improved through a process evaluation
- Estimate the impact(s) of the programme

To complement the evaluation, we will carry out a cost benefit analysis, which will attach monetary values to costs and the benefits of the programme.

# Theory of Change

The complete theory of change is included in the separate document. Below is a summary of the key outcomes and their measurement.

Isolating the impact of the pilot programme will be challenging as VR is a single tool used in a complex environment with many external variables. For example, changes in policy and funding will affect some of the proposed key outcomes. Consequently, we will combine qualitative (e.g. feedback and case studies) and quantitative (e.g. administrative data) data collection strategies to understand the implementation context and impact of the programme.

Outcomes	Measurement tool	Description
<b>Final outcomes</b>		
Transformed and accelerated decision-making	Feedback forms	<ul style="list-style-type: none"> <li>Ask social workers and legal professionals if their decision-making has been changed through 3 different dimensions (i) quality of decisions, (ii) confidence during their decision making, (iii) timing of decision making</li> </ul>
	Case studies	<ul style="list-style-type: none"> <li>Asking interviewees how it has impacted their decision-making, particularly legal professionals and social workers</li> </ul>
Increased placement stability	Feedback forms	<ul style="list-style-type: none"> <li>Ask social workers, adopters and foster carers whether the sessions have helped them to avoid deterioration of placements<sup>1</sup></li> </ul>
	Data collection <sup>2</sup>	<ul style="list-style-type: none"> <li>Adoption disruption rates</li> <li>Placement moves for children looked after (3 or more moves in a year)</li> </ul>
	Case studies	<ul style="list-style-type: none"> <li>Asking carers and social workers about the impact on placement stability</li> </ul>
Tailored and suitable support is offered to children and carers	Feedback forms	<ul style="list-style-type: none"> <li>Ask social workers and education professionals about how they think it will affect the support they offer</li> </ul>
	Case studies	<ul style="list-style-type: none"> <li>Ask social workers and carers about the support offered/received, the targeting of the support and when it is offered (e.g. before crisis)</li> </ul>
Improved recruitment of adopters and foster carers	Feedback forms	<ul style="list-style-type: none"> <li>Ask social workers using the VR recruitment in practice – specifically whether i) more adopters and foster carers are recruited and ii) more suitable adopters and foster carers are recruited</li> </ul>
	Data collection <sup>3</sup>	<ul style="list-style-type: none"> <li>Number of enquiries from foster carers/adopters</li> <li>Number of approvals of foster carers/adopters</li> </ul>
Enhanced action to avoid the re-traumatisation of children	Feedback forms	<ul style="list-style-type: none"> <li>Ask social workers, adopters, foster carers, education and legal professionals whether based on their improved understanding of trauma, they will take further action to avoid any accidental triggers</li> </ul>

<sup>1</sup> This question will also be used to measure the intermediate outcome “Difficult cases are less likely to break down”.

<sup>2</sup> It should be emphasised that this information alone will not prove impact. All administrative data collected will be triangulated with qualitative responses to provide multifaceted understanding of the implementation context.

<sup>3</sup> Will be used to understand the implementation context.

	Case studies	<ul style="list-style-type: none"> <li>Ask for examples of enhanced action</li> </ul>
<b>Intermediate outcomes</b>		
Better quality assessment of placements and matches	Feedback forms	<ul style="list-style-type: none"> <li>Ask social workers whether the programme has provided them with knowledge that can be used to improve their assessments and matches</li> </ul>
	Data collection <sup>4</sup>	<ul style="list-style-type: none"> <li>Adoption disruption rates</li> <li>Placement moves for children looked after (3 or more moves in a year)</li> </ul>
Greater urgency in decision-making	Feedback forms	<ul style="list-style-type: none"> <li>Ask legal professionals whether they are more motivated to ensure efficiency of processes</li> </ul>
Greater confidence in choices and decisions	Feedback forms	<ul style="list-style-type: none"> <li>Ask legal professionals and social workers whether the programme had made them more confident in their decision making</li> </ul>
	Case studies	<ul style="list-style-type: none"> <li>Ask social workers and legal professionals about whether the programme has affected their confidence</li> </ul>
Increased empathy and emotional connection to the child	Feedback forms	<ul style="list-style-type: none"> <li>Ask social workers, foster carers, adopters, education professionals and legal professionals to self-rate their understanding of the experiences and views of children in care and assess how this changed after their participation in the VR programme</li> </ul>
Improved understanding and response to children's behaviour and actions	Feedback forms	<ul style="list-style-type: none"> <li>Ask education professionals, social workers, adopters, foster carers and legal professionals if they feel that they know more about trauma, children's emotions and potential triggers</li> <li>Ask education professionals, social workers, adopters, foster carers and legal professionals if they will do anything differently</li> </ul>
	Case studies	<ul style="list-style-type: none"> <li>Ask social workers, foster carers, adopters, education and legal professionals what has changed</li> </ul>
Children's needs and views are better understood and considered at each decision point	Feedback forms	<ul style="list-style-type: none"> <li>Ask legal professionals to self-rate their understanding of the experience and views of children in care and whether they will use this understanding during decision-making</li> </ul>
More adopters and foster carers are recruited	Data collection <sup>5</sup>	<ul style="list-style-type: none"> <li>The number of enquires received from prospective foster carers and adopters</li> </ul>
More suitable adopters and foster carers are recruited	Feedback forms	<ul style="list-style-type: none"> <li>Ask social workers about the quality of adopters and foster carers recruited</li> </ul>
	Data collection <sup>6</sup>	<ul style="list-style-type: none"> <li>The number of foster carers and adopters approved</li> </ul>
Increased motivation to enquire from prospective adopters and foster carers	Feedback forms	<ul style="list-style-type: none"> <li>Social workers' views and non-structured feedback from recruitment events on motivation levels</li> </ul>
Improved ability to articulate the challenges and	Feedback forms	<ul style="list-style-type: none"> <li>Ask social workers whether they feel that they can better explain to prospective adopters or foster</li> </ul>

<sup>4</sup> Will be used to understand the implementation context.

<sup>5</sup> Will be used to understand the implementation context.

<sup>6</sup> Will be used to understand the implementation context.

opportunities of being an adopter or a foster carer		carers the experience of caring for a child who has been through trauma and abuse
Improved shared understanding of trauma, children's emotions and potential triggers	Feedback forms	<ul style="list-style-type: none"> <li>• Ask social workers, adopters, foster carers, education professionals and legal professionals if they feel that they know more about trauma children's emotions and potential triggers because of this experience</li> </ul>

# Evaluation methodology

## Impact Evaluation

We have two proposed approaches for identifying the impact of a Cornerstone VR programme. Firstly looking at participants' responses to questions and secondly to see how impacts vary between participants and their colleagues who have not undertaken training.

The main approach to estimate the impacts will be based on direct participants' feedback. The feedback will allow for two options:

- i) **the 'Before and After' method** - as the name suggests, this approach measures participants responses to statements and questions before a session, and immediately after a session and records the difference in responses as the impact of the training. For example, participants are asked to score their level of empathy before and after the session.
- ii) **asking about impact directly** – this approach has no baseline comparator but immediately following the training participants are asked if the programme had any impact. For example, participants are asked if they believe the training will affect how confident they are in their decision-making.

The Cornerstone VR modules have a broad range of potential impacts, as highlighted in theory of change. The measurement table above shows a focus on final outcomes – our intention is to avoid the feedback forms becoming too long to maximise responses.

In order to measure the longer term impact of the Cornerstone VR programme, we would like to do follow-ups to see if any impacts change over time. The first follow-up will take place within the contract period for the preliminary evaluation. This would involve emailing a link to those who have volunteered to participate in a follow-up. The link would contain similar questions to the post-feedback form – only updated to understand what has happened since the training.

**Comparing participants to non-participants.** While it is not feasible in the scope of this preliminary evaluation, in an ideal situation, we would ask participating local authorities and schools to send at least the baseline feedback form and the follow-up form, to staff who have not participated in the VR Cornerstone programme. We would then be able to compare their answers to programme participants to measure impacts. We would caveat the results by recognising that there may be spillover effects from colleagues within an organisation sharing new ideas, but it would be interesting to investigate differences and add robustness to the analysis. A key issue with this approach is the additional data burden it places on LAs/schools.

We will also advise on how the preliminary evaluation can be extended with additional quantitative and qualitative data. At the moment, delays in data publications mean the insight provided by published administrative data is limited, but we can advise on how this can be used in the future.

## Process Evaluation

The purpose of the process evaluation is to identify what worked well and what could be improved regarding all aspects of Cornerstone services from arranging sessions, to the facilities used, the technology and any support post-training. There is a trade-off between

the burden on those completing the feedback and the amount of information collected. We do not want a feedback form that is so long that prevents people from filling it out comprehensively.

The feedback forms are fairly light on process style questions at this point. There are questions about using the VR technology and an open question about what was most useful from the session and what could be improved. This is an area we feel can explore in the case studies. It can be a good ice breaker to begin a case study interview by asking participants about the process/administrative aspect to a programme.

## Case Studies

Impact evaluations are important – people want to know what the likely results of services they purchase will be – however they often fail to capture important details about the personal experience. This is where case studies come in. We will use the stories told in the case studies to describe details of different individuals’ experiences. Going beyond the numbers can be very powerful.

We plan to do an in-depth telephone/Skype interview with someone from each of the Cornerstone main user groups – a social worker, a teacher, a legal professional, a parent/carer. If possible we would interview one parent and one foster carer – perhaps one following recruitment and one following a 1:1 session. We will discuss setting up the case study interviews in the Autumn.

## Feedback forms

We have developed feedback forms for the audiences and modules outlined in the matrix below. It is expected that initial results will be reviewed so that the feedback forms can be adapted as required.

Delivery	Module	Audience			
		Social Workers	Teachers	Legal professionals	Foster carers/ adopters
Cornerstone	Module 1: Trauma Awareness – Standard				
	Module 1: Trauma Awareness – Bespoke				
	Module 2: VR Kit				
	Module 3: Ethics of Use & Impact on Self				
	Module 4: Recruitment				
	Module 5: 1:1 Settings				
	Module 6: Group Sessions				
Trained trainer	1:1 Settings				
	Group Sessions				
	Recruitment				

## Approach to the Cost Benefit Analysis

A cost benefit analysis (CBA), also commonly referred to as a type of economic evaluation in health and social care, is a method that assigns a monetary value to all the costs of a programme and all its outcomes, over a lifetime, to be able to i) identify whether the programme is value for money and ii) consistently compare across programmes (i.e. which gives the best value).

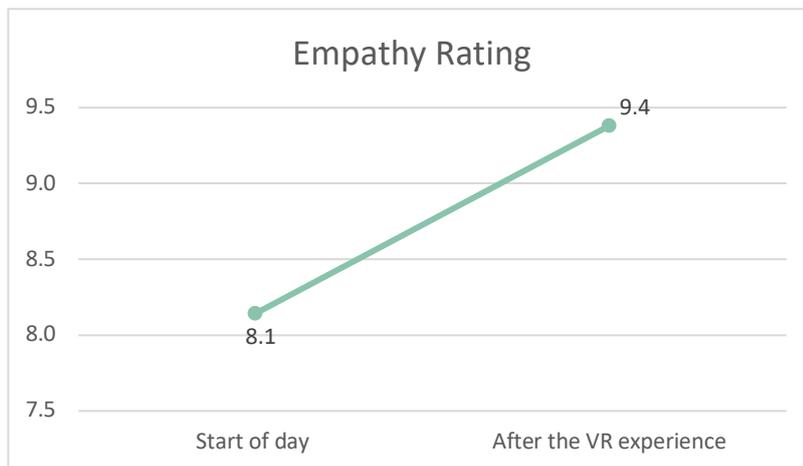
There are practical difficulties in putting a pound sign on some key benefits especially around emotional wellbeing/other health outcomes. However, economists/statisticians have developed an accepted approach around many of these factors (e.g. quality-adjusted life year). Our goal is to be transparent around any assumptions made and to present ranges to account for uncertainty.

The previous cost analysis presents the costs avoided from specific outcomes achieved by the programme. Once we have the results of the impact evaluation, we will assess precisely how to present the CBA – whether to link outputs to specific modules and costs or to follow the previous approach and list monetary benefits of attending a Cornerstone VR programme.

# Early impact findings

## VR for social workers, adopters and foster carers<sup>7</sup>

- **90%** of social workers who participated in a Trauma Awareness Session reported that they will do things differently as a result of the session.<sup>8</sup>
- **100%** of participants in a Trauma Awareness Session said they would recommend the VR programme to a colleague.<sup>9</sup>
- 50 social workers rated the VR session **4 out of 5**, for its value in helping them to carry out their role. No one rated the session with a score below 3.<sup>10</sup>
- At the start of the session, only 24% of respondents rated their empathy as 10 out of 10. By the end of the day, 67% reported a score of 10 out of 10. The average empathy score increased by **1.3 points**.<sup>11</sup>



- **90%** of social workers who participated in the 1:1 family therapy and group sessions rated the session excellent or very good.<sup>12</sup>
- On average, confidence in explaining the concepts of attachment and trauma increased by 33% due to the session.<sup>13</sup>

<sup>7</sup> TAS module 1 – TACT, TAS module 1 – Southend, FCR module 6 – Redbridge, FCR module 6 – Hampshire, Coventry – NQSW, except if stated otherwise.

<sup>8</sup> TAS module – Coventry, sample size – 11.

<sup>9</sup> TAS module – Coventry, sample size – 11.

<sup>10</sup> TAS module 1 feedback – TACT, TAS module 1 feedback – Southend, FCR module 6 – Redbridge, FCR module 6 – Hampshire and Coventry NQSW, sample size – 50.

<sup>11</sup> FCR training session – Southend and TAS module – Coventry, sample size – 21.

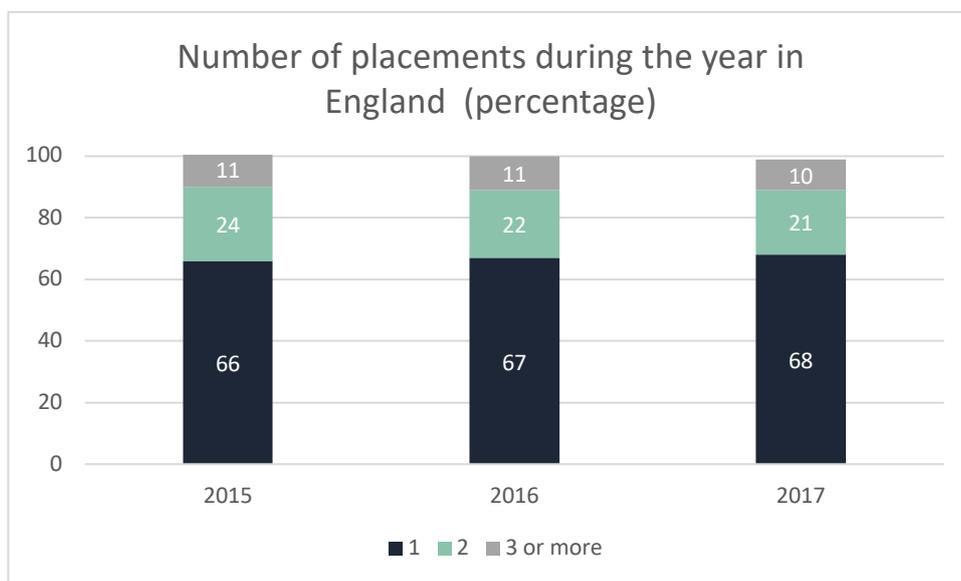
<sup>12</sup> TTT 1:1 and Group session – Southend, sample size – 10.

<sup>13</sup> TAS module – Coventry, sample size – 11.

## Box 1 - Placement stability

Some of the emerging findings have suggested that the VR pilot may be use to improve placement stability. There is strong evidence that placement stability can affect the outcomes of children and young people in care. Children in stable placements are more likely to achieve better education and employment outcomes and a more positive transition into adulthood (Narey and Owers, 2018).

Over the past three years, there has been a slight improvement in the number of children changing placements within a year. However, in 2017 around 10% of children in care had 3 or more placements and around 31% had 2 or more placements. Experimental statistics collected for the first time in 2017 suggest that around 12% of placement moves were prompted by a carer's request due to a child's behaviour.<sup>1</sup>

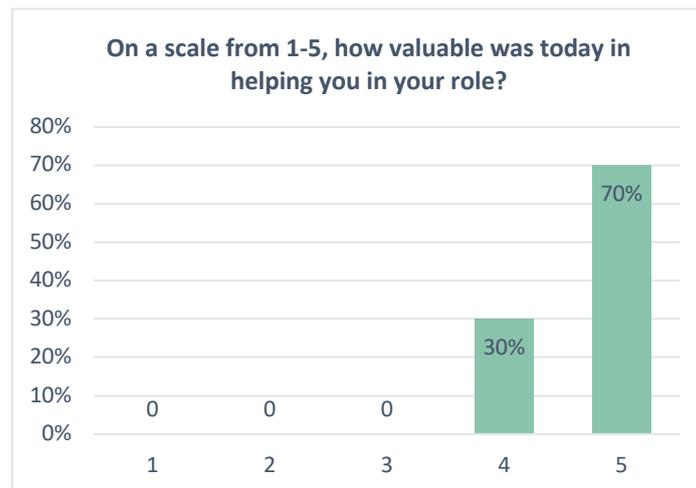


Factors that are correlated with placement instability include, older age, externalising behaviour, longer total time in care and experience of multiple social workers (Rock et al., 2015). In addition, children who have experienced abuse or who have emotional and behavioural problems are particularly vulnerable to placement breakdowns (Narey and Owers, 2018). Protective factors that can mitigate the impact of placement instability include placements with more experienced foster carers with strong parenting skills, and placements where foster carers provide opportunities for children to develop (Rock et al., 2015). Rock et al. (2015) explored qualitative evidence suggesting that stressful situations can occur when carers are unprepared for children's specific difficulties and expectations regarding behaviour are not met, potentially leading to placement breakdowns. In addition, it is suggested that foster carers who are under stress are less likely to parent effectively and form positive attachments (Farmer, 2005).

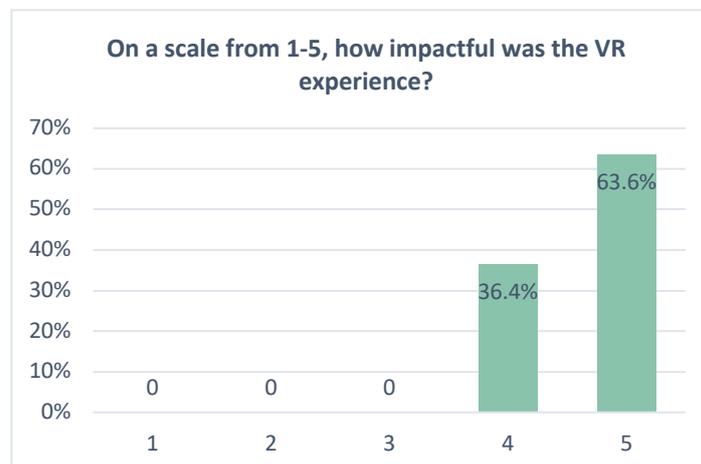
Conversely, it is suggested that parents who can empathise with their children can provide more targeted care and have more positive relationships with their children (Manczak et al., 2016).

## VR for education professionals<sup>14</sup>

- **91%** of education professionals said they will do things differently, as a result of the session. Changes included increased empathy for children and adopting a PACE approach to resolve conflict.<sup>15</sup>
- **70%** of education professionals believed that the session was valuable in helping them in their role and rated it 5 out of 5. The average score for all participants was **4.5**. No one rated the session's value below 4.



- **64%** of education professionals rated session's impact as 5 out of 5, with the average score being as high as **4.6**. No one rated the impact level below 4.

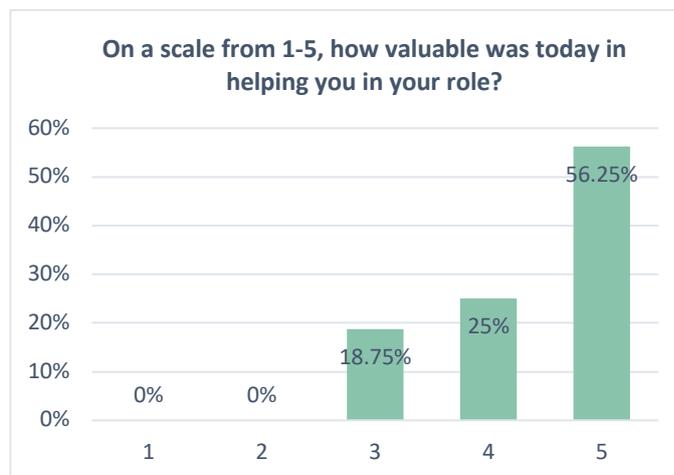


<sup>14</sup> Trauma-Informed Teaching CPD session - Dolphin (2nd July 2018), sample size – 11.

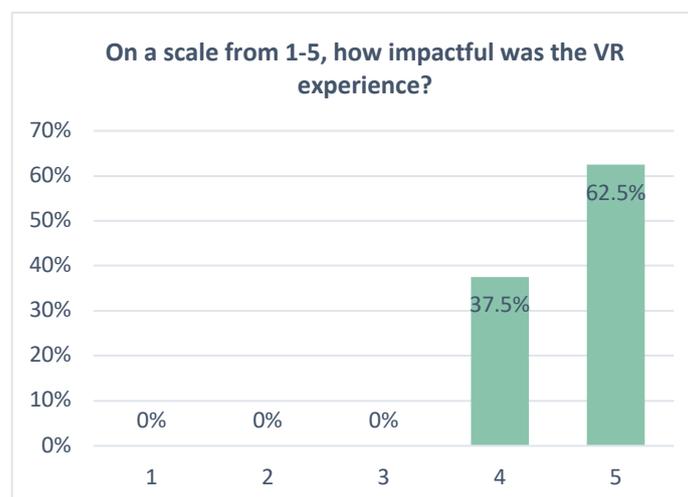
<sup>15</sup> 10 out of 11 teachers responded to the question: What 3 things will you do differently?

## VR for legal professionals<sup>16</sup>

- **88%** of district judges said they will do things differently, as a result of the session. Changes included:
  - Reflect more on a child's perspective, as well as children's physical and emotional needs
  - Ensure efficiency of processes
  - Improved understanding of the long-term effects of decisions
  - Improved understanding of what trauma is and how it affects children's lives
- **56%** of district judges rated the session 5 out of 5 in terms of the value it had in helping them in their role. The average score for all participants was **4.4**.



- **63%** of district judges rated session's impact as 5 out of 5. The average score was **4.6**. All participants rated the session's impact as above 4.



<sup>16</sup> Permanence and Trauma-Informed Practice Training for District Judges (13<sup>th</sup> June 2018), sample size – 16.

## Quotes from Participants

*"The TAS session will help me in my role of recruiting good quality foster carers"*

- Social worker at Trauma and Awareness Session

*"Very powerful – people seeing this rather than reading about it i.e. in a report, will feel differently and hopefully act differently"*

- Social worker at Foster Care Recruitment Session

*"[The VR experience] has helped me recognise how I can change my practice"*

- Social worker at Trauma and Awareness Session

*"I definitely think this is something that should be used in adoption workshops. Much more impact than a video/slides etc."*

- Prospective adopter at Adoption Preparation Group

When asked whether the session had an impact on a parent's relationship with their children - *"Yes, definitely. [The session] has helped me to understand more deeply what my child has been through..."*

- Adopter at 1:1 therapy session

*"Puts you in the child's perspective..."*

- Prospective adopter at Adoption Preparation Group

*"...It was really eye-opening..."*

- Prospective adopter at Adoption Preparation Group

*"Seeing events from the point of view of the child - I found myself looking at the door waiting for dad to come in"*

- Teacher at Trauma Awareness Session

*"Provided a child's eye view which was shocking and highlighted child's perspective"*

-Teacher at Trauma Awareness Session

*"VR experience gave me a very good insight into how these children feel"*

- Teacher at Trauma Awareness Session

*"After VR experience, I will ensure things progress as efficiently as possible"*

- Judge at Trauma Awareness Session

*"The VR was an experience you must do"*

- Judge at Trauma Awareness Session

*"Seeing reality before my eyes"*

- Judge at Trauma Awareness Session

## VR in other settings

Virtual reality is a rapidly developing technology with growing applications in fields, such as journalism (Sundar et al., 2017), healthcare (Jütten et al., 2017) and education (Ott and Freina, 2015). However, there is a lack of high quality evidence regarding its application and impact. The key underpinning concept of 360° virtual reality is 'presence', or the feeling that you are in a certain situation. Presence is often determined by a range of factors, including technology and individual personality.

The power of VR to affect empathy and behaviour has been demonstrated in other contexts, but the evidence is preliminary. Wijma et al. (2017) recently carried out a study to evaluate the effectiveness of the Through the Dementia Lens (TDL) programme. The programme aims to reduce the physiological distress of caregivers by using virtual reality movies and an e-course to enhance understanding and empathy of the individuals living with dementia. 35 caregivers completed the pre and post-test element to assess person-centeredness, empathy, perceived pressure from informal care, perceived competence and quality of the relationship. The results showed that caregivers had better ability to empathise with individuals with dementia, had more confidence in their ability and more positive interactions with the person with dementia. In particular, it was noted that there was a greater increase in resilience (i.e. the ability to remain a positive attitude about the care task and person with dementia despite setbacks) from secondary educated caregivers than higher educated. While the study had some limitations (e.g. small sample with selection bias, lack of intervention isolation), it provides some interesting insights into the use of VR technology to increase empathy.<sup>17</sup> A range of VR programmes have recently emerged to assist understanding of people living with dementia, including [A Walk Through Dementia](#), [Alzheimer Experience](#) and Into Dementia (Jütten et al., 2017).

Improved learning is another advantage associated with VR. Initial research suggests that people remember information better when presented through virtual reality compared to standard desktop-based learning (Krokos et al., 2018). In a study examining the memory recall ability of students who had never used virtual reality, Krokos et al. (2018) found that participants recall after using head-mounted displays (HMD) was 8.8% higher than the desktop display. In addition, participants using the HMD made on average fewer errors than the desktop learning. In a post-activity survey, the researchers found that 95% of participants preferred the HMD and stated that the total immersion allowed them to focus on the specific task.

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<sup>17</sup> Results of a longitudinal, quasi-experimental study are expected in 2018.

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