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# Viarama: Virtual Reality for Good

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## Abstract

Viarama is a social enterprise that uses virtual reality to benefit schoolchildren and senior citizens in schools, nursing homes, hospices, hospitals, and respite centres, mainly in the UK. This paper explores the issues faced by this work and the often deeply moving nature of utilisation of VR in these environments.

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## Keywords

Hospices · Nursing homes · Schools · Respite centres · Hospitals · Senior citizens · Schoolchildren · Healthcare · Education · VR for good

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## 1 Company Description

### 1.1 Viarama C.I.C

Established in 2015, Viarama is a world-leading social enterprise, based in Edinburgh, that has been delivering VR sessions in schools, nursing homes, hospices, respite centres, and hospitals in Scotland since 2016. In addition to this core work the company creates VR experiences for various organisations, all of which have a strong social focus. Viarama uses room-scale virtual reality, with HTC Vive headsets at all of our sessions.

Their work is multi-faceted but the main focus is upon using VR to improve quality of life among schoolchildren and senior citizens. Engaging with children and adults with all levels of physical and cognitive ability, their work involves people living with a wide variety of physical and mental conditions, including Alzheimer's

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disease, dementia, Asperger's syndrome, autism, multiple sclerosis, and many other conditions.

Viarama utilises a diverse range of VR applications and experiences, as required, and has developed a range of methodologies from both a psychological and technical perspective to allow clients to enjoy the experiences offered to their maximum potential.

All work utilises a person-centred approach to engage with clients on a one-to-one basis, and compassion is at the core of its ethos, and this approach underpins efforts in all areas.

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## **2 Project Summary**

This case study will look at Viarama's work delivering VR sessions in schools, nursing homes, hospices, respite centres, and hospitals.

All of these areas of operation differ, often greatly, and the approach taken has been tailored to each setting based upon extensive experience gained since 2016.

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## **3 Project Details**

### **3.1 VR in Education**

Viarama works with pupils in both mainstream and special needs education, and includes work with pupils receiving little to no formal education due mainly to behavioural problems. This study will firstly focus upon this group.

Pupils in the group present with one or more of the following issues:

- learning difficulties;
- significant behavioural problems;
- social difficulties;
- experience of one or more adverse childhood experiences;
- mental health issues;
- developmental disorders.

In this use case, VR is used as a tool to improve:

- self-esteem;
- general confidence;
- problem-solving skills;
- social skills;
- self-expression;
- resilience;
- general wellbeing and overall mood;
- desire, willingness, and ability to learn;

- willingness to try new things;
- general performance in school.

Viarama does this by establishing a rapport with each pupil, gaining their trust where possible, and ascertaining their interests, desires, likes and dislikes based upon the information they volunteer, and that of their teachers and carers. From there they begin to tentatively introduce each pupil, on a strictly one-to-one basis, to VR; being very careful to ensure the initial experience of the technology is relaxed, friendly, non-threatening, and completely free of pressure to either try VR in the first instance, or continue with it. This gentle approach has been very successful with almost all of the several thousand pupils we have worked with to date. An overwhelming majority of pupils reported a positive response to the sessions, with documented feedback received as follows:

- would very much like to try the experience again and wanted to know when or if this could happen;
- was delighted, enthused, and very excited to have tried VR;
- was thrilled to be able to revisit their previous home following immigration to Scotland;
- was stimulated to learn more about the topic or topics covered;
- learned an interest they didn't know they had;
- reignited a spark of enthusiasm for something that had fallen by the wayside;
- were soothed or calmed by a relaxing environment;
- expressed enthusiasm to stay in VR;
- expressed enthusiasm to learn to develop, code, or produce VR content;
- expressed a desire to work in a career path for the first time;
- experienced joy, wonder, excitement, positivity, and happiness at the experience.

The above is by no means an exhaustive list of the positive emotions experienced or expressed by pupils Viarama has worked with. Unprompted, and in the vast majority of instances, pupils expressed a strong desire to do more, learn more, and enjoy more VR sessions. This enthusiasm was conveyed to their teachers on a great many occasions, and was used as a starting point for creative lessons of different kinds. It was noted that for several pupils this was the first time they had expressed enthusiasm for this type of schoolwork.

It was decided that Viarama should attempt to measure the responses and track the overall mood among pupils prior to and after their VR session. To that end a simple form was created that would capture qualitative and quantitative data that could subsequently be used to measure pupil responses in detail.

Pupils were encouraged to speak freely and with candour about their experience of VR. The questions were deliberately left open to interpretation; the reason being that the pupil would unconsciously decide the focus of the questions and respond accordingly.

From these completed forms, a hugely positive picture of the use of VR in education has formed. Of all participants, there was a 100% positive response

from how the pupils felt upon arrival to how they felt at the end of the session. *All pupils* felt as good or better after they had enjoyed VR.

Pupils who had previously expressed suicidal ideation no longer did so. Pupils who exhibited very low self-worth or self-esteem were beginning to believe in themselves to a greater extent. Resilience and tenacity in the face of problems showed a marked improvement across the entire group. Problem-solving skills among all participants showed general improvement, as did their wellbeing, and their desire and willingness to learn. Enthusiasm increased, social skills showed improvement, and willingness and openness to try new experiences was increased.

During this work with children in special needs groups, the positive effect of VR upon pupils with developmental disorders cannot be overstated. For the first time these pupils find themselves in a world that makes sense to them. It is a world they can understand, and, crucially, it is a world they have a sufficient level of control over. This sense of agency is vital, and the importance of this to the children in question cannot be overstated. Furthermore, and while it is clear that further study is required, this feeling of increased agency seems to transcend the virtual world and have a positive effect on the real world too for these pupils, based upon their descriptions.

## 3.2 VR in Healthcare

This case study will look broadly at Viarama's work with senior citizens in nursing homes, hospices, respite centres, and hospitals. A formal study of our work in hospices has been undertaken by Queen Margaret University in Edinburgh in conjunction with St. Columba's Hospice, and this study will be published in late 2020. Anecdotally, we have collated hundreds of positive comments, reviews, and general feedback which overwhelmingly show the many benefits to not just to the individuals we work with, but also to their families. The benefits to family members are most keenly observed in our work in hospices, where family members are most often present. A notable example occurred during one of our first sessions in a hospice.

The lady concerned was in some significant pain prior to her session and on the day wasn't sure if she would be able to participate. The session was delivered at her bedside after the bed was wheeled into the room we were using. She was very frail at this point, and great care was taken to ensure her comfort at all times. Upon entering the virtual world she chose, which was an undersea visit, she eventually broke into a beautiful smile, which was deeply moving not just for her husband and son, but also for doctors as well as Viarama staff.

Following this, the lady decided she would like to travel to places she had visited and 'loved' during her life, starting with where she and her husband had their honeymoon, and taking in all of the places in the world she had loved to visit. For all concerned this was a deeply touching session that was unforgettable.

After the session had ended, the lady's son spoke to Viarama staff and, deeply moved, said he hadn't seen his mother smile for many months. He expressed deep

gratitude at how beautiful it was to see her experience happiness one more time. There have been a great many examples of this kind of deeply moving response to Viarama's work in hospices, and this clearly shows the benefits of VR for people receiving palliative care, and their families.

Participants often have a profoundly emotional response to unexpectedly being able to visit parts of the world in VR that have had strong significance in their lives. This emotional response is something Viarama now includes in its briefing for all participants prior to their session; along with other psychological and practical explanations of what they are about to experience. This briefing has been carefully developed over the course of Viarama's work and has been refined to be as efficient as possible, whilst still conveying the essentials to ensure participants are safe, happy, and prepared for the experience.

In hospices, nursing homes, respite centres, and hospitals Viarama's work is predominantly, but not exclusively, done with senior citizens. The people worked with present with all levels of physical and cognitive ability. In the vast majority of sessions Viarama staff will guide participants through the experience by controlling the virtual world on their behalf, and this has proven to be the most effective way of conducting the sessions. In these settings, virtual travel is a very popular experience and from a menu of options this is by far the most selected by participants. Other experiences used include drawing, painting, and sculpting, driving, flight simulators, and various other games and applications as requested. It is worth noting however that on occasion, senior citizens just want to shoot zombies as much as the next person.

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## 4 Feedback from End Users

The anecdotal feedback mentioned above has been one of the key indicators to date that Viarama's service is providing benefit to the people they work with. They have received hundreds of examples of this kind of feedback in public on social media channels, and in private in both sessions and the aforementioned formal research project which was participated in. Many participants are very keen to offer their feedback as they understand the requirement for more people to gain access to the service and see their public feedback as a way to achieve this.

One physically disabled user stated that he 'forgot about his wheelchair for thirty minutes' during his session, where he was weightless on space station.

One man receiving palliative care had devoted much of his life to his passion for motorcycling, and Viarama was able to let him enjoy a few more virtual motorcycle rides before he died. He stated to his family and carers that these experiences made his last few days much more enjoyable, and for a little while let him simply enjoy something, and not to worry about his situation.

A lady who had not been able to travel in her life due to her severe disability spoke of her deep desire to see Mount Everest. When Viarama staff took her to the top of the mountain and let her see the view, she cried tears of joy at being able to in some way realise her dream.

A lady who was receiving palliative care who loved fine art was able to visit the locations where some of her favourite paintings were created, as well as some of the finest art galleries in the world across a few sessions. She was also able to travel to some of the cities in the world she wanted to visit, including Paris, Amsterdam, and New York. Overcome with emotion, her gratitude was captured in a BBC report on our work, available online.

Phyllis was 101 years old when Viarama delivered her session in a hospice. Prior to our visit she had been feeling very down she said, as her contact with people was very limited. She was sceptical about VR but agreed to try anyway. Her wonderful life to that point had seen her travel the world as a child due to her father's career in the navy. She lived in many places but one in particular, Darjeeling, had stuck with her throughout her life, even though she had not been there since childhood, more than ninety years before her session. Viarama took her back to Darjeeling and let her travel through the area, and most astonishingly see her old home once again. Phyllis cried tears of joy to see her old home once again. Re-energised by the experience, she spoke at length about her childhood, her family, and her life to date. This session was fortunately captured by BBC Radio Four and some of it is available online.

Mick is a multiple sclerosis sufferer who had seen a sharp decline in his condition over the year prior to his session. He was unable to travel due to this, but was determined to put a brave face on it, and not let his condition get to him. In initial discussions with both he and his carers, Viarama staff became aware that he was deeply troubled by his condition, and they took great pains to explain the emotional component of the experience, and briefed him that sometimes an outpouring of emotion is to be expected. He was not the kind of man given to discussing his feelings however, and he curtly refused to acknowledge the possibility of him having an emotional response to this or any other experience publicly.

His favourite place in the world was the beach in Ibiza where his daughter lived, and he wanted to go there first. He explored the area for several minutes, awestruck at the experience in general, but specifically astonished to suddenly be able to virtually visit this special place and have it evoke such surprisingly strong feelings in him. Soon, he asked to stop and at this point he had what he later called 'a meltdown', which initially was a great source of embarrassment for him.

After the session ended, he spoke about his condition, for the first time, staff said. He went into detail about how his life had changed, how he could no longer do several of the things he loved to do, and how he felt about that. He was able to express sadness, anger, fear, bewilderment, and feelings of abandonment for the first time.

In his feedback he said he had been unable to confront his condition prior to this, and had largely been living in denial of it, but that the session has somehow acted as a catalyst to allow him to come to terms with his life as it now was. He spoke at length of his gratitude to have experienced something he regarded as profound in many ways, and expressed a strong desire to try the experience again, which later occurred.

There have been a great many more examples like those above in the work Viarama has done to date. VR in this context offers a profound experience that is

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unforgettable, deeply moving, impactful, energising, transporting, and highly beneficial to those they work with.

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## **5 Future Outlook**

Viarama is a social enterprise that to date has relied on private capital investment by its owner, alongside the revenue generated in an entirely new sector largely of its own making. The social enterprise has received no grant funding to date, and was recently turned down for the both of the two resilience funds it was able to apply to. Viarama's world-leading work is currently severely threatened by the outbreak of Covid-19 and there is a chance that the social enterprise may not be able to continue as all work has been forced to cease since March 2020.

This work is ground breaking, and its value is beyond question. If this work is to continue at all we must see a widespread willingness to embrace new technology in all of the sectors where we work. There is cause for optimism however, and the hope is that change that is long overdue will be delivered as a necessary response to Covid-19.

Viarama hopes to expand its work internationally in the coming year if at all possible, using VR to help as many schoolchildren and senior citizens as it possibly can in the process.

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## **6 Conclusion**

There can be no doubt that the VR service provided by Viarama is of significant benefit to those worked with in schools, nursing homes, hospices, respite centres, and hospitals.

As understanding of VR grows in the public consciousness it is hoped that demand for Viarama's services—an even mixture of both the technological and the psychological—will continue to increase.

It is inevitable that virtual reality has a significant role to play in both education and healthcare around the world both currently, and in future. It is Viarama's aim to deliver their VR service in every school, nursing home, hospice, respite centre, and hospital in Scotland. These are ambitious aims, clearly, and Viarama will not be able to achieve these aims alone. Support of all kinds is essential to allow the social enterprise to continue and hopefully to flourish in years to come.