

# Interactive Media Masters Thesis Proposal

*2009/2010*

*Immersive guided imagery installation using a modified game controller with gyroscopic control to facilitate navigation and exploration in both a motivating or recreational manner for use by palliative care patients.*

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## Brief

On the 3rd of December the Interaction Design Centre in the University of Limerick received an email from the head of the art department in Milford hospice with the possibility of a student or a number of students to collaborate an idea for a project to help the palliative care patients staying with them. The email contained the following;

“I am head of the Art Department in Milford Care Centre. Milford is the main provider of palliative care in the Midwest region.

The Art Department is one of the few arts in healthcare initiatives in the country that is a permanent and integrated part of the multi disciplinary team, encompassing both art therapy and recreational approaches.

For a while now I have been exploring ways of using imagery with other therapeutic disciplines to maximise the benefit to patients, one of our ideas is to investigate the possibility of linking the exercise bikes in the physiotherapy gym to imagery so that patients can experience the feeling of a journey. As you can imagine, serious illness can be very confining and often people feel trapped, this could provide options for choosing routes or visual landscapes which would enhance the persons experience and wellbeing.

I wondered if this was something that a student in your department might like to explore as a project, maybe we could arrange to meet and see if this or other possibilities for collaboration present themselves as I feel that the combination of technology and creativity that you are developing could be of great benefit in the healthcare area.

Yours Sincerely,... Senior Art Therapist, Milford Care Centre.”

Following a meeting and show around Milford Hospice with the Therapist and other staff we were to research and come up with an idea for a project that would benefit the patient but also have them involved in the design process as it will be theirs to use once completed.

### **Milford Hospice Care Centre Limerick**

The congregation of the Little Company of Mary (LCM) first established services at Milford Care Centre in 1928. The order, founded by Venerable Mary Potter has, since its foundation over a century ago, developed and adapted in response to the changing needs and circumstances involved in caring for both the sick and the dying<sup>1</sup>.

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<sup>1</sup> [www.milfordcarecentre.ie/aboutus.index.htm](http://www.milfordcarecentre.ie/aboutus.index.htm)

Milford today carries the same holistic ethos of respect for the individual as well as care for the whole person with highly trained and approachable, open minded staff.

Their services include Palliative care and elderly care in both an in-patient and day care capacity. Facilities like a physiotherapy gym, art therapy room, private art studio for personal projects, garden and horticulture area in use allong with assistive technology computers and internet access.

Theirs is one of the only arts in healthcare initiatives in the country that is a continuous and regular part of the usual conventional methods of healing for the sick

### **What Is Palliative Care?**

Palliative care primarily aims to provide the best quality of life possible for a terminally ill patient and their family, including keeping the patient free from pain as far as is possible. It respons to physical, psychological, social and spiritual needs and extends to support in breavement. The Health Services Executive (HSE) has responsibility for providing palliative care services<sup>2</sup>.

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<sup>2</sup> [www.citizensinformation.ie/palliativecare](http://www.citizensinformation.ie/palliativecare)

Although this care is directed mainly towards cancer patients, other patients with motor neurone disease, multiple sclerosis and HIV are now accepted into palliative care should they require it. Patients with these diseases however, are a small minority of the total who use this service.

Palliative care can be provided in a hospice, in an acute or community hospital or in the patients home. Access to this care is determined and decided by the HSE on the basis of need. There is some variation in the availability of palliative care throughout Ireland.

Palliative care is provided in a number of ways by specialist palliative care in-patient units (hospices). Currently there are nine hospice units; three in Dublin and one each in counties, Limerick, Cork, Galway, Sligo and Donegal.

The care can also be provided in peoples own homes, by home care nurses working in cooperation with the family doctor or a special palliative care team.

As well as in hospices (dedicated specialist palliative care in-patient units like Milford Hospice here in Limerick)

In general hospices, by the hospitals own specialist palliative care team.

In community hospitals and nursing homes again working in cooperation with the family doctor or a special palliative care team.

Care is provided by the HSE in partnership with voluntary service providers. Both public and private patients can use the in-patient units and other services.

Palliative care is not the same for each individual. Patients have a range of diseases and respond differently to different treatment options. The main benefit of this care is that it can customise treatment to meet the individuals needs.

It can relieve symptoms such as pain, shortness of breath, fatigue, nausea (A primary symptom for most Cancer patients), loss of appetite and trouble sleeping. This care is not dependant on prognosis and can be delivered at anytime as treatment that is meant to cure you. The goal is to relieve suffering and provide the best possible quality of life for patients and their families<sup>3</sup>.

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<sup>3</sup>[www.getpalliativecare.org](http://www.getpalliativecare.org)

Palliative care is not the same as hospice care and is mainly focused on terminally ill people who no longer are looking for treatment to cure them and are expected to live for six months or less.

### **Who Are The Palliative Care Team?**

Usually a team of experts in their own fields including doctors, nurses, social workers, Chaplains, art, massage and physiotherapists, pharmacists and nutritionists to name just a few who would be trained in the area of Palliative care specifically.

This team can provide expert treatment of pain and other symptoms with close, clear communication.

They can help patients navigate the sometimes confusing health care system as well as guidance with difficult and complex treatment choices with detailed practical information and assistance.

They also provide emotional and spiritual support for the patients family as well as the patients themselves.

## **Guided Imagery and Visualisation Psychological Methods to Facilitate Healing**

Along with palliative care to treat the physical and emotional aspects surrounding terminally ill patients, psychological methods are used to facilitate healing also like the Guided Imagery technique.

Guided Imagery involves mental exercises designed to allow the mind to influence the health and wellbeing of the body. The patient imagines sights, sounds, smells, tastes, or other sensations to create a kind of purposeful daydream. It is used with standard medical treatment in people with cancer and other serious diseases<sup>4</sup>.

Cancer Guided Imagery is an internal process that creates messages with images. These messages include directions and goals that are communicated to the entire body and any other area chosen. For this reason, cancer Guided Imagery has been labeled a “mind intervention with the body”. This intervention incorporates the power and resources of the mind to convey desired positive responses and changes<sup>5</sup>.

One well-known method of guided imagery as used with cancer patients

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<sup>4</sup> [http://www.cancer.org/docroot/ETO/content/ETO\\_5\\_3X\\_Imagery.asp](http://www.cancer.org/docroot/ETO/content/ETO_5_3X_Imagery.asp)

<sup>5</sup> [http://en.wikipedia.org/wiki/cancer\\_guided\\_imagery](http://en.wikipedia.org/wiki/cancer_guided_imagery)

is the Simonton method where patients imagine the old Pac-Man game. They close their eyes and imagine Pac-Man moving through their body eating up and destroying cancer cells.

Guided Imagery is recommended for use along side conventional medical treatments and not to be used to treat cancer on its own.

### **Personal Project Proposal**

An Immersive guided imagery installation using a modified game controller with gyroscopic control (Like a Wii Remote) to facilitate navigation and exploration in both a motivating or recreational manner for use by palliative care, elderly and other patients.

Using a number of projectors to display a single landscape on all walls surrounding the patient, the roof and ceiling may also be included in the immersive display. Connected to a laptop, the projectors could use programmes like Google Earth and Street view to display a real journey to anywhere on the planet. Using a programme like Celestia (An astronomical programme for stars and planets) Patients could expand their horizons of travel outside of the natural limitations.

To navigate through space or the world, a gyroscopic control like that of a Wii Remote could be modified to work in conjunction with the laptop

along with sensor bars to help locate an area on the displayed projected surface.

Should the system be setup to connect with the bikes in the physiotherapy gym for example, patients could point to where they want to go, click on the destination and pedal there. For the patients who may not have the physical capacity to pedal their way they may opt to use the arrows on the gyroscopic control to direct themselves to the desired destination.

This potentially can be used by any person with little limitation for either motivation or recreational use.

Other software could be fed into the laptop to display any desired imagery, photography, video and even audio could help add to the immersive experience.

### **Difficulties**

The major difficulties I feel will be encountered with this project will be programming the device for everything to work together as I have practically no experience with programming. Also external lighting will be an issue to think about. When in Milford for the show around, we saw that the physiotherapy gym, which this project is mainly aimed at, is a very bright and excellently lit room with all the windows allowing light to enter situated on the roof. Also patients with sensory issues may not be able to use this device should certain displays set off unwanted side

effects, like flashing lights may trigger epilepsy attacks. Portability will have to come into question, ideally this should be for use by everyone but if we are talking about a number of projectors, a laptop, sensor bars, controllers as well as connecting it to the bikes to allow those in the physiotherapy room to pedal to their destination it will need to either be easy to transport or simple and quick to set up.

### **Personal Experience and Further Research**

If pursuing this project I will have to firstly research and understand the symptoms and ailments associated with the patients involved in this area as ideally the patients will be involved in the design process for this project and ethics will have to be followed. I already have a good background with Multiple Sclerosis as my Father was diagnosed with it seven years ago, this is one of the diseases that is now being accepted into palliative care units throughout the country.

I also currently work in a gym and have been working in this area for almost 9 years now, along with this experience I have studied physiotherapy and sports injury massage. Prior to this I had worked in Enable Ireland helping patients and attendees with Cerebral Palsy, Spina Bifida, Blindness as well as Deafness and other illnesses affecting motor skills and senses. Cancer and the Elderly however are a new area

for me, I have a good general knowledge of both but this will be an area that will have to be researched thoroughly for this project.

Programming will be a primary area of study or help as I have no programming experience. Also, has this or anything like this been done before? Researching online in the past number of weeks has revealed very little information and study in this area will have to be pursued.

Questionnaires, interviews, diaries and other such 'confidential' interaction would be of great benefit from the patients to help directly help make this project a reality.

## **References:**

1: [www.milfordcarecentre.ie/aboutus.index.htm](http://www.milfordcarecentre.ie/aboutus.index.htm) *14/12/09*

2: [www.citizensinformation.ie/palliativecare](http://www.citizensinformation.ie/palliativecare) *14/12/09*

3: [www.getpalliativecare.org](http://www.getpalliativecare.org) *14/12/09*

4: [http://www.cancer.org/docroot/ETO/content/ETO\\_5\\_3X\\_Imagery.asp](http://www.cancer.org/docroot/ETO/content/ETO_5_3X_Imagery.asp)  
*16/12/09*

5: [http://en.wikipedia.org/wiki/cancer\\_guided\\_imagery](http://en.wikipedia.org/wiki/cancer_guided_imagery) *19/12/09*

