

Educating and Enhancing Compassion, Emotion and Reflective Professional Practice through Contemporary Digital Filmmaking

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Abstract: The use of artistic and contemporary digital filmmaking is explored as a educational tool for enhancing compassion, emotion and reflective professional practice in a healthcare environment. The case study film, *The Golden Window*, was produced specifically for this research and captures a unique insight into an advanced life saving technique for premature babies. The research shows that the artistic use of filmmaking and sound design brings an immersive audience experience that has caused practitioners to reflect on their professional practice in new ways, and specifically with respect to the compassion they show to patients and other staff. Furthermore, this method of filmmaking has been seen to engage new audiences and to inspire and educate the general public in a complex field of healthcare and science.

Keywords: Film, digital media, reflective practice

Introduction: ‘Creative Communication’

Art and creative media has the capability to communicate, educate and inspire people in the most powerful ways. Through primary research the authors have identified novel methods to educate audiences in areas of emotion and compassion, as well as developing new ways to allow people to reflect on their own professional work and that of others around them. *The Golden Window* [1] is an immersive and artistic documentary which forges a new link between the arts and healthcare, exploring life-

saving procedures at one of the country's leading Neonatal Intensive Care Units. A key aim is to enhance the viewer's intellectual and emotional response to this complex environment, utilising novel playback systems, artistic exhibition and sound design. This paper therefore describes a specific case study that utilizes smart technologies in education as an approach for enhancing the learning of emotion-critical subjects. The smart approach defines a unique interaction between arts and technology fields; to create the artistic digital media itself, whilst also allowing a critical reflection of the opportunities for utilizing art and creative media in traditionally non-creative industries. In particular this research utilizes digital media capture, single and multi-screen film editing, digital presentation and digital (multi-screen) exhibition. The multi-screen exhibition space utilises a unique digital gallery, which is designed for presentations that encourage the audience and participants to immerse themselves in a dynamic artistic environment – i.e. one that is always changing. In this research we have utilized the dynamic digital exhibition space to evaluate new opportunities for encouraging deep learning, reflective practice and wider public engagement in healthcare fields. The case study itself brings a number of participant responses, examples of which are summarized within and reflected on.

By engaging in 'creative communication' through contemporary filmmaking, it is shown that detailed scientific, technical and even political material can be presented to a wide, non-specialist audience enhancing impact, engagement, interaction and education. The creation of the audiovisual representation of this state provides the framework and language that can communicate the complex science in a comprehensible way, in order to address the need to understand and explore the human condition in relation to society. Indeed, insights from cognitive sciences suggest, for example, that people think in terms of metaphor rather than with logic [2] [3] .

This research is fundamentally cross-disciplinary and investigating the unique and challenging interaction between science and art. By presenting scientific and technological practice in a creative manner - combining storytelling, filmmaking and curated exhibitions – a much wider impact can be generated. This research therefore evaluates a new framework for disseminating scientific or other detailed knowledge and data through creative and artistic means.

1. Research Context

There are many valuable commercial benefits to be made by engaging a wide audience, or consumer group, with scientific and technical knowledge and innovation. In particular, opportunities exist creatively, in communicating a scientific story in an artistic manner. Furthermore, technical industries often find a need to educate and engage with a potential consumer group in order to encourage adoption of new innovative approaches. However, engaging a wide audience with respect to a specialist technical field is a considerable challenge; many people just aren't interested in science and technology, or they feel out of touch with modern technical advances or issues of politics and international affairs. Creative communication methods bring opportunities to allow non-technical and non-specialist audiences, or consumer groups, to first find interest and secondly to engage with the deeper technical issues. Successful implementation of creative communication can therefore allow a scientific agency to gain visibility through non-scientific outputs, technical industries can engage with

otherwise unobtainable consumer groups, and government and academia can educate societies effectively in a rapidly evolving technology climate.

For example, the story of the Titanic is fundamentally a story of science and technology. Engineering aspects regarding ship design and build, power delivery, engineering failure analysis, as well as scientific aspects of ship navigation, deep sea diving and the natural climate aspects of iceberg creation are all key factors in the story of the Titanic. However, many people are not engaged with such specific technical fields and so are not drawn to the story unless considerable emphasis is put on less technical aspects. When combined with creative storytelling, it is possible to add human and emotive aspects of the Titanic story, which can fundamentally be identified and reflected on by all people. Furthermore, by adding creative elements of cinematography, sound and music, it is possible to develop a truly engaging experience for any viewer. This is particularly shown by James Cameron's 1997 film *Titanic* [4], which has returned over \$1.8 billion in revenue – far more than a technical documentary could ever have returned. The story of the Titanic has yielded a number of other creative commercial outputs including TV drama series³, animations, computer games and simulators. It is clear that when an audience is initially engaged on a creative level, they are then more likely to be interested in developing a deeper understanding of the key scientific aspects underpinning the story.

The creative artefact, in this case the film *Titanic*, furthermore justifies the development of new technical advances, for example advanced digital special effects and 3D film technology. So engaging with creative communication ultimately yields new artistic and technical commercial opportunities. A further example is the 1971 film *Mr Forbush And The Penguins* [5], which communicates the annual life cycle of penguins in Antarctica through a comical love story mixed with passages of scientific detail.

In a perhaps more artistic context, *Leviathan* [6], is an example of modern documentary film which emerged from a new generation of digital film artists interested in confronting a tendency toward miniaturization of the sensual experience. This has been explored considerably by the filmmakers Lucien Castaing-Taylor and Verena Paravel (from The Sensory Ethnography Lab at Harvard University). *Leviathan* immerses its audience within audiovisual surround created from their experiences on fishing boats shipping out of New Bedford, Massachusetts. The film is overwhelming with its sound and its application of the digital cameras. Scott Macdonald, author of *American Ethnographic Film and Personal Documentary: The Cambridge Turn*, likens the film to the action painting of Jackson Pollock and Willem de Kooning, as well as the maritime paintings of J.M.W. Turner for example [7]. The biblical reference to the title *Leviathan* pays homage to the opening quotations from *The Book of Job* (one of the books of the Hebrew Bible) at the start of the film. The soundscape and visual immersion then live up to this biblical spectrum with a sonic landscape designed by Ernst Karel, then reengineered by Hollywood sound designer Jacob Ribicoff (whose work includes the films *The Wrestler* and *Revolutionary Road*). The story of this particular fishing boat exhibition is wrapped up in the sensual experience. The film pushed the boundaries of cinematography by using relatively low cost equipment such as Go-Pro's and digital SLR cameras strapped to the filmmakers and the contributors – providing an alternative framing for how the viewer sees the world, whether from the perspective from the numerous butchered fish that are hauled on board to that of the fishermen beaten by the waves and the vicious routine of their daily lives on board the vessel. The film draws an audience in and asks them to re-evaluate a scenario or

environment they thought they were aware of. It also brings them face to face with engineering feat of these ships in such a landscape.

2. The Golden Window

"There is a window in which you can change the death signals to the brain cells, cooling stops that signaling process. When you re-warm the baby, the brain cells no longer receive that signal to go down the death pathway."

Dr Topun Austin, Consultant Neonatologist.

Shot entirely during 72 hours of opportunity, *The Golden Window* follows the medically induced cooling of baby Jessica after a traumatic birth. The filmmaker, Shreepali Patel shifts our visual and sonic perspective down to the heightened intensity of a baby's heartbeat in this immersive documentary giving poetic scope to the baby's experience, suspended between life and death, science and nature.

From the close up intensity of the senses, the film also captures contradictory and unanticipated emotions that the Neonatal Intensive Care Unit generates, interweaving the candid and immediate thoughts of parents and staff as they experience this world, they call the "bubble".



Figure 1. Jessica's brother holds her hand during her state of suspension.

Filmed on a budget of just under £5000, with seed funding from the Cultures of the Digital Economy Research Institute at Anglia Ruskin University and an incredible in kind support from the production crew, post-production facilities and the Rosie Neonatal Intensive Care Unit, this 24 minute film forms one part of a multiplatform project, involving a multiscreen gallery exhibition and a future online interactive documentary. The film has been created for cinema exhibition as the spearhead for a multiplatform project and also as a pilot for future feature length documentaries examining other aspects of medically induced hypothermia as well as human trafficking in Europe.

Eyeline films is the production company behind the Emmy award winning feature documentary *The English Surgeon* [8] and it's director and producer, Geoffrey Smith, has acted as a consultant on this project. Like *The English Surgeon*, *The Golden*

Window attempts to push the boundaries of the form, by interweaving traditional documentary storytelling with a more immersive cinematic experience.

We were keen to explore and exploit the full audio-visual cinematic potential of these babies in a state of ‘human suspension’ in order to draw the audience into what the parents describe the ‘bubble’ world of the Neonatal Intensive Care Unit (NICU).

Dr Austin, the consultant, was also keen to expose his staff and the outside world to viewing this world and the innovative cooling technique with a fresh eye and a unique way. After spending considerable research time in the Neonatal Intensive Care Unit, we were intrigued by a heightened sense of immediacy in every moment, be it the monitors reporting any slight change or a parent’s watchful eye. It was felt that this complex mixture of science and emotion would be evoked best by interweaving some aspects of traditional documentary storytelling with a more immersive cinematic experience. The research and in-kind funding, allowed the process of construction to be free of the direct influence of the traditional commercial or market pressures placed by an industrial framework (such as schedules and audience ratings targets). Instead, the academic home of its creation encouraged a reflective and self-critical process of discovery through its production.



Figure 2. Father Rev’s interview was conducted through angled glass and his reflection filmed.

The limited budget, the sensitive filming environment and the actual cycle of therapeutic cooling process led to a self-imposed 72 hour filming period from when Baby Jessica is first cooled down to when she is re-warmed. The parents and staff interviews were filmed ‘in’ the moment, during their shifts or in a break from watching over their babies. There was no filming outside the hospital and all images and sounds were captured in that period. A black cloth interview space was created just off the NICU unit, almost womb like, evoking a similar experiential experience that the babies in their care were going through. The contributors’ responses to questions were directly towards the director but a clear glass panel divided the participants. The reflection from the glass forms the slightly hazy interview image that we see on the screen. Additionally, the filming method allows the interviewer and interviewee to have a direct eye-to-eye discussion, whilst capturing the interviewee response as if they were looking directly down the lens of the camera. This technique has allowed an essential

emotional aspect to be captured, that of the direct emotion expressed through the interviewees face and eyes. Cinematographer, Tim Sidell's background in experimental image making helped create a unique visual perspective that draws the viewer into every small moment. We were also keen to embed the soundscape as part of the narrative storytelling. All sounds are diegetic, with elements re-versioned to form that more experiential "bubble" world that the parents, staff and babies experience.

3. Audience Response

The various creative tools were utilized to create a more intense cinematic experience – much of the ability to do this rested on the incredible access created by Dr Austin, and the pure emotional and physical generosity of the contributors, both staff and parents at NICU. There is no doubt that the creation of this film has had a clear impact on both the filmmakers and the hospital staff as the following statement from the hospital illustrates:

"We were all completely blown away by it. My colleagues were (as was I) impressed with the 'experiential' feel of the film and how the parents were able to give such an honest and moving narrative.....On a personal note this has been one of the most satisfying projects I have been involved in... this film with its simplicity, soundscape and camerawork not only tells an amazing and complicated story but educates at all levels - it has been a real privilege."

Dr Topun Austin, Consultant Neonatologist, Rosie Hospital.

Dr Austin further explained that the film had given him an opportunity to reflect on his own professional practice in a new way. Giving him a better insight to the thoughts and feelings of parents attending his unit, and allowing him to develop a more informed and compassionate response to the emotions which parents show during childbirth.

The film also brings value to parents, preparing for birth and the complexities that could ensue, as highlighted by the following example audience response:

"Beautiful and emotive, but so informative in a subtle way – drawing you in to the time and place. I had a premature baby, and in the Rosie Unit saw parents watching and waiting with their much earlier born babies – your film captures that strange world"

Karen, parent of a premature baby.

It is clear that it is very challenging to truly prepare people from an emotional perspective, but this film has given a greater immersive experience which educates deeper than simple facts and figures. We see that the collaboration between art and science is effective and provokes a response. It leaves the audience with material to consider, absorb and interpret in their way according to their experience. The response from medical staff included "humbling" and from one parent "I had no idea how strong I was" – this indicates a rebalancing of the power relationship which dominates within such an all engrossing medical environment, and has provoked much controversy in recent times. Many audience members commented on the powerful soundscape that

pulled them into this interminable waiting, as well as the attention to detail, such as the bitten fingernails of the brother holding his daughter's hand.

4. Digital Exhibition

The Golden Window feature has also been re-edited as a specialist digital gallery exhibition which utilizes multi-screen imaging to bring a spatial and physically immersive audience experience. An art installation and exhibition for *The Golden Window* was held in the Ruskin Digital Gallery in Cambridge in October 2013, allowing audiences from academia, healthcare, the film and arts industries and the general public to share an experience and exploration in the field of infant healthcare. The Ruskin Gallery is a unique space, which allows the immersive and communicative experience to be evaluated and celebrated. The Ruskin Gallery supports nine digital screens, a central 3D screen and three projection screens, all supported by bespoke software (*Watchout*) that allows content to move from one screen to next, or duplicate material on all screens simultaneously (see [9] for more details).



Figure 3. The Ruskin Digital Gallery exhibition of *The Golden Window*.

The gallery control software operates in visual layers and connects the movement of images across the digital screens. Having several screens gives the viewer the opportunity to focus on various aspects of the artwork at their preference. The platform is therefore designed to deliver material in a non-linear format, but the axis of narrative guiding the viewer through the exhibition is predominantly linear. In the case of *The Golden Window*, the story is dissected into fragments of the original linear narrative, and extra information and artwork is built into the additional spaces. The focus, timing and placement of the additional elements, can then be manipulated, pre-empting how the viewer may physically engage with the space. This placing invites the audience to

consider the artistic elements of construction as well as providing a cumulative experience of the Neonatal Intensive Care Unit.

The audience response to the art exhibition has highlighted how it is possible to engage the general public in a scientific field, which they never even anticipated being interested in, for example:

“An under-recognized department has been completely captured in the most visceral of ways. Your work has made me want to know so much more about them and what they do. Visually, I also feel this has been completely immersive and captivating and is a complete triumph. I hope you’re as proud as you should be of it.”

Mat, general public visitor.

The fact that the audience member is inspired to learn more about this science and medical field, as a result of attending a digital art exhibition is extremely powerful.. In a similar manner it can be anticipated that the use of art and exhibition can enhance and encourage public engagement with technology, science and politics, and also to help engage children and students with educational subjects and academic fields.

Additionally, the immersive nature of the gallery exhibition is seen to bring a new level of detail and depth to the audience experience, giving a truer representation of the environment than is achieved by traditional film and education methods.

“It gives the health carers a more intimate idea of what they do...gives them a reality check from their logical and rational thinking... as well as feeling proud as well”

Student Midwife

“A fantastic piece of cinematography that captured the fair detail that many miss. The soundscape is beyond beautiful, it truly captured the atmosphere in the world. I loved the use of the multi-screen screening as it somewhat recreates the ward atmosphere.”

Ken, Medical Researcher

5. Looking to the Future: Interactive Documentaries

The documentary artefact of *The Golden Window* is itself quite rigid. The audience is only ever able to see the level of detail chosen by the film director. However, in reality, different people are interested in different branches of science and technology and at different levels, so in order to engage deeply with each specific audience member, there is a desire to allow flexibility and interactivity into the process [10] [11]. Databases of information alone do not always entice the audience to engage, so a novel approach to interactive storytelling is to be evaluated in future studies.

The future initiative to develop an interactive documentary comes from the challenges and fallbacks associated with traditional documentaries and formal archive structures. For instance, the standard documentary approach is limiting in allowing the viewer to only access a single level of detail, however different audiences might be interested in different levels of detail based on personal knowledge and interest. By allowing the viewer to manage their own documentary experience, it is hypothesised that a wider audience can become engaged with the material. Furthermore, it is not

essential that modern documentary and film is constructed to a strict and chronological timeline, if a narrative storyline is implemented. One element of our future research therefore requires the development of an authored (director) driven narrative, that encapsulates portals of information within the scene, which allows the audience to investigate further, according to their interests. At this, point the audience become active participants within the documentary, however, the overall storyline and journey is predominantly guided by the director/filmmaker. It carries a linear narrative accompanied by a non-linear cache of information / archive, data and stories that can be explored further by the viewer. This brings an opportunity to develop a narrative approach within a flexible archive of material. This mode is still in its infancy, but examples include: Katerina Cizek's award winning *Highrise* [12] [13] and Jonathan Harris's extraordinary film, *I love Your Work* [14] a film made up of over 2000 10 second video clips. Harris has found an economic model to sustain the online doc and Cizek, a way of "re-imagining the 'space' around the estates of the original production".

Further novel examples of interactive film-based experiences include *Prison Valley* [15], which is a combination of game and interactive documentary, and *Condition One* [16], which is an application based on Danfur Danzig's Oscar nominated documentary, *Hell and Back Again* [17].

Research into the active participation of the audience within interactive documentary is novel in this project. The research field is still in its infancy and slowly developing as more forms of interactive documentary are created. However, as yet the question of authorship which transcends from traditional documentary filmmaking still remains:

"The author can no longer set out to create a unique, closed and subjective narrative program, and must assume to some extent that he will lose control of his work, and as such the new situation often works against his interests. In short, he no longer depends on himself to convey a particular narrative program."

Arnau Gifreu Castells, Professor and Producer, Universitat Ramon Llull [18]

This further proposed research therefore aims to explore and examine whether the dominant paradigm of non-interactive documentary can be applied successfully to interactive documentary which is open to user activity.

6. Conclusions

The merits of artistic filmmaking for creatively communicating knowledge and utilizing these smart technologies in science and healthcare are clearly shown. We have identified that artistic filmmaking can enhance the reflective practice of professionals, and allow them to develop a more compassionate approach to their work, which is of particular importance in the healthcare industry. We have also identified that the artistic presentation of real scenes and experiences is of great value in educating practitioners and the general public of the feelings and emotions they will experience in the specific healthcare environment, which is of significant value alongside the required facts, figures and traditional education material that is required.

We have furthermore seen that this approach to documenting and presenting a scientific process is engaging for the general public, and serves as an opportunity to

raise public interest and awareness in fields in which they are not normally exposed to or interested in. The value in this can be on multiple levels and specifically in enhancing the educational impact. Specifically we are interested to see if these techniques can help in parallel endeavors, such as in educating the general public in issues of politics and technology, as well as in engaging young students better in subjects which are traditionally seen as uninspiring.

The outputs of this study can therefore bring new economic opportunities for arts professionals, in justifying the collaboration of the arts with science and technology. It is believed by the authors that this type of collaboration can help maintain the quality of the arts through enhanced funding but also bring unique and unmeasurable opportunities for the high-tech sectors by encouraging emotive and out-of-the box thinking with respect to research, development and communication.

Erik Knudsen suggests that “if we, as human beings are made up of mind, body and spirit working seamlessly together with such faculties as logical thinking, imagination, feelings ... why should all of this, in its totality not be considered as part of the reality of the real world” [19]. Werner Herzog (the filmmaker) and Erik Knudsen both insist that the boundaries of realism be pushed further, by exploring and exploiting the creative tools of construction [20]. This research therefore examines how we can utilize and develop this assistance and move it across into the boundaries of science and technology to capture this propensity of ‘reflection and emotion’ which sits within all of us through the artistic and interactive documentary.

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