

Action Research Project (ECPT6009)

Assignment completed by Matthew Broadhead

Understanding how the photographic/teacher-researcher can enable students to demonstrate higher order thinking using critically reflective e-journals in a tertiary e-learning environment

Abstract

Stemming from my own experience working in a tertiary e-learning environment, an investigation into higher order thinking skills and how these are related to the effective use of technology was initiated. After coming across an influential arts based research methodology called a/r/tography, it was found that academics had already responded to this with action research specifically centred on the use of e-learning journals in a photomedia environment. An arts-based method titled the Photographic Participatory Inquiry sought to critically discuss data captured as digital artefacts using multimedia tools. Aside from looking at how to build up critical reflective skills of digital generation learners across each phase layer, there is also an emphasis on how the researcher/photographer-educator can investigate productive, personalized and participatory pedagogical methods compatible with this teaching and learning environment.

Introduction/justification of study area

In advance of teaching on my placement with boomsatsuma on their level 3 media course, I was shown varied examples of individual student work uploaded to Wix websites as e-learning journals. Wix Education in particular is a free platform and suite of resources to teach web creation, design, and development in classrooms. It was revealed to me that there was a disparity between some individual student e-journals, particularly regarding sequencing and content. As my own group are currently year 13 media students, it would be highly beneficial to investigate how practitioners have enabled learners to achieve fully evidenced higher order thinking skills in their e-journals.

My starting point involved looking at the unit descriptor but in particular grading criteria used. To achieve a distinction students are required to provide comprehensive analysis, evidence a high level of technical skill, and evaluate with clarity, detail and insight. The revised blooms taxonomy (Anderson & Krathwohl, 2001) consists of six tiers that range from low to high order thinking skills. These are remembering, understanding, applying, analysing, evaluating, and creating. Higher order thinking will be the focus of my investigation, with a particular emphasis on investigating approaches to teaching and learning in an e-learning tertiary environment. Methodology and results relating to higher student outcomes will be thoroughly explored in the relevant sections.

An effort to define an influential arts-based research methodology called a/r/tography is followed by differing examples of practitioners who used that approach as a basis to develop their own teaching and learning methods. A specific interest in the use of e-journals by students will also be part of this enquiry to ensure full relevance to my research question.

Literature Review

The beginning of this literature review asks the following question: How can Bloom's Taxonomy be related to the effective use of technology? According to the authors of the Revised Bloom's Taxonomy, "several educators and organizations have attempted to categorize skills and applications according to how they might be used" (Anderson and Krathwohl, 2001).

The higher order levels of thinking (analysing, evaluating, and creating) are represented on one half of a table alongside their associated verbs. Opposite each of these are a list of technology aided skills and sample applications (Johnson, 2017). The identification of verbs associated with differing levels of higher order thinking in Bloom's Taxonomy enables the identification of associated technology aided skills. The TPACK technology integration model then provides teachers with a

method of evaluating digital tools to determine which level of thinking they would work with best. Digital media students are required to provide cumulative evidence that meets (Rock School Learning) RSL grading criteria for analysis, technical skill/creativity, and evaluation. Students can demonstrate analytical skills through their Wix e-journal to create content that is structured, organised, linked, validated, and reverse engineered. Technical skills and creativity is shown through documentation of ideas generation, research and other aspects of development leading to production which is also recorded and annotated. As creation is achieved through digital storytelling, video editing, animating, podcasting, filming, and publishing there is the facility to embed media from sites such as Youtube into the e-journal as evidence. Finally, evaluation is sought through discussion, submitting, critiquing, collaborating and reviewing. In terms of assessment, an evaluation of their final work followed by an action plan for future improvement is what media students have to complete and submit for marking.

A/r/tography is an influential arts-based research methodology described by authors Stephanie Springgay, Rita L. Irwin, and Silvia Wilson Kind as the ongoing process of art making in a way that is interconnected to create additional and/or enhanced meanings. It is particularly useful when trying to understand what happens when written and visual content is combined within student e-journals in a way that demonstrates higher order thinking. The previously mentioned authors made an aesthetic enquiry into a/r/tography to identify six interconnected renderings which sought to create opportunities where action can take place. The first of these is contiguity, which refers to “the movement between art and graphy” (Springgay, Irwin and Kind, 2005) This could be understood by considering how art and writing coexists within student visual e-journals. Living inquiry marks a similar expression as it points to “a contiguous methodology where interweaving threads of theory, practice, and poesis are not separate and distinct.” (Irwin, 2004) In simpler terms, it allows for all those different elements to inform one another. Metaphor and metonymy act as a counterpoint to literal language in the sense that they make things otherwise imperceivable accessible to our senses. This altered perception creates a tension where understandings are harder to reveal but can lead to a fresh outlook where complexity is embraced. ‘Openings’ acknowledges that within sensory and textual ways of knowing there can be a multiplicity of perceptions, but that the gaps between each of these also presents opportunities for engagement. ‘Reverberations’ considers “an interplay between the new and the customary” (Irwin, 2003) that perpetually takes place as new research recalls other texts that came previously. Finally, excess involves asking questions that extend beyond the physical realm into the metaphysical. Due to the nature of these six renderings, there is potential for even more to be created which can in turn allow activities to take place.

The remainder of this literature review will be concerned with research into why and how a/r/tography has been used to build higher order thinking skills into the use of e-learning platforms by other practitioners. The benefits of digital e-learning in tertiary education have only been explored a small extent to date, but an art-focused method developed by Kathryn Meyer Grushka, Aaron Bellette, and Allyson Holbrook of the University of Newcastle, Australia named Photographic Participatory Learning (PPL) demonstrates how these skills can be enhanced. Before getting into their identified research tools and methods, the authors shed light on academics who teach photomedia in tertiary education referring to these as researcher/photographer-educators (R/P-E).

In this capacity, it is explained that we can successfully develop students’ critical reflective practices by enhancing our own e-learning pedagogies. The intention behind developing research and teaching approaches is to “engage a generation now immersed in visual culture, visual processing and the digital stream” (Grushka, Bellette and Holbrook, 2015) who also use social media applications. McLoughlin and Lee reinforce this need through their identification of three P’s (personalization, participation and productivity) that are components of their Pedagogy 2.0 framework. What Grushka, Bellette and Holbrook described as a ‘networked learning society’ is derived from this, a notion supported by the theory of constructivism. This emphasizes that through building networks we can encourage communication, engage in dialogue and create collaborative bonds. The aim is to replace outmoded ‘closed’ classroom models where an instructor teaches through the use of a textbook. Instead, it is aspired to make teaching more learner-centric. As opposed to behaviourism and cognitivism, constructivism “assumes that learners are not empty vessels to be filled with knowledge.” (Siemens, 2005) Learners choose what to study as an active attempt to create meaning in a way that is messily complicated. Through the embodiment of

constructivist principles in the classroom, it is possible to emulate this in a way that benefits life-long learning.

Personalization refers to learner-centred education where learners can make decisions based on their own goals. There are ever growing modalities of expression that assist with this whilst satisfying the need for connection making and social interaction. Web-based multimedia production and distribution tools that involve rich audio and embedded video offer preferred modes of communication for these learners over plain text alone. Green, Facer, Rudd, Dillon and Humphreys summarized four key areas that must be covered when harnessing digital technologies for pedagogical purposes. First of all, learners are to be in a position to make informed their own educational decisions. Recognition and diversification These should also be complimented by “learner focused feedback and assessment”. (Green, 2007) When learners benefit from customization, they are also able to self regulate and act as their own agent to make choices that they can manage themselves. Through socialization of teaching and learning, it will be possible to step up from ‘closed classroom’ models and enhance participation through a less prescriptive curriculum. This creates a positive situation where teachers become co-learners. Social software tools in particular allow social constructivist forms of participation in a networked society where learners engage with larger communities. They can not only create and maintain collections of content that is useful to them, but also allow for comments and annotations from a global audience. Through digital means, learners can be enabled to communicate and collaborate within as broad a community as possible for maximum connectivity. A specific example comes as a result of allowing students to see how contemporary images are used in areas such as photojournalism or advertising, for their social function in the public sphere. As this allows for swift visual communication of events as they unfold, it is possible to illustrate or exhibit to complex audiences using this sophisticated skill set. Wright argues that “this set of production and communication skills is fundamental to the integration of digital images into artistic practice. (Wright, 1998)

In the early 2000’s the e-portfolio emerged as a popular strategy (Abrami & Barrett, 2005; Love, McKean, & Gathercoal, 2002) for organising captured student-generated content due to how it can incorporate evidence of the process “that is representative of the complexity and ‘messiness’ of an authentic, problem based learning experience”. (McLoughlin and Lee, 2008) This means that aside from completed project or assignment work, there is also an insight into drafts, mistakes made and any difficulties that were encountered. Synchronous and asynchronous computer mediated communication (CMC) also contributes to this in the form of discourse. Working individually or in teams, students independently generate chat logs, discussion board postings and various forms of reflective writing including blog-based diaries, summaries, and reviews. Found content including wider reading from news articles, magazines, websites and journals are also brought into the learning environment to be shared. Contributing to a publication titled ‘Educating the Net Generation’, Windham had identified that the tertiary student profile are earning incomes throughout their studies, are tech fluent and utilize social networking tools. When these factors are brought into consideration, it makes sense for learners to create their own content and contribute to knowledge with creativity and innovation. Generativity, a term coined by psychoanalyst Erik Erikson in 1950 is all about our concern for establishing and guiding the next generation. Genuine motivation of this kind will make it possible for the teacher to enable their students to take advantage of a continuously developing open classroom model.

As an approach PPL utilised digital tools that could “capture collective information as digital artefacts” that can then be used “to build critical and reflective photographic practices.” (Grushka, Bellette and Holbrook, 2015) The authors proposed three phases that involved video recording during pre-visualization, screen capture of post-visualization, followed by photo and video elicitation conversations between the teacher and learner. To explain in the context of media, pre-visualization refers to the making process whilst post-visualization represents post-production activities. Elicitation conversations would involve the use of these student generated digital artefacts for comprehensive analysis where the meaning of their outcome can be fully realized. To elaborate further, PPL relies on the use of the digital documented photographic practice and the e-learning journal as data sets. However, it can also enhance validity by drawing on a wider range of data sets that are compatible with elicitation interview strategies. According to Bresler these “sit alongside the co-constructed conversations and reflective writing of the educator and student” (Bresler, 2006).

Methodology

Due to imposed time constraints there is not enough time to submit an Action Plan proposal to the ethics panel at University of Wales Trinity St David. As a result, it will not be possible to gather primary data of my own making. Mark Flagg advised that primary data from already completed action research or secondary data from reliable sources could be used.

The remainder of this action research project is going to draw from three papers on the Photographic Participatory Enquiry involving Aaron Bellette, Kathryn Grushka and Allyson Holbrook that were published in 2014, 2015 and 2016 respectively. At the beginning of a section titled 'The photomedia e-learning study' in the 2015 paper, it was noted that a part of a larger ethics approved study posited whether the e-learning journal allows students to be more critically self-reflective. This was considered particularly in relation to new online spaces that allow for participation, collaboration and refinement that enhances awareness of aesthetic qualities. Choosing to analyse and discuss two case studies of 'introductory level' e-learning journals, they employed "a participatory self-study methodology that positions the educator in an epistemological stance towards critical and emancipatory learning." (Kemmis, 2007) Put simply, this means that the teacher is promoting knowledge building and analytical behaviour that results in broadened learner awareness.

What types of data will you gather?

There are many types of data that is contained within the e-learning journal, which in this case manifests itself as a chronological blog with posts that are tracked by the date each post is published.

The 2016 paper noted that student participants "are expected to learn and put into practice research, experimentation of technical and aesthetic skills, documenting of their ideas and process for projects, and also reflection on each stage of the project." (Grushka and Bellette, 2016) Although the content can be customized to suit individual preferences, there is a clear set of skills to be showcased. These have been summarized into my own words below:

1. Wide range of visual sources beyond photography (tagged links to primary sources)
2. Observational analysis of other photographs (thinking related to digital photography)
3. Aesthetic trends
4. Self-reflection of progress during creative journey (visual and written diary entries)
5. Work process documentation (brainstorm ideas generation, working images and screen captured footage of editing processes)
6. Critical artist research (hyperlinks, evaluations and reviews of other artists work)
7. Technical (encoding of studio learning, online videos covering technical aspects of photography, tutorials on photographic processes and functionality of different cameras)
8. How all of the above relates to the students own project

It is pertinent to note that the authors asked students to locate resources widely giving them permission to change ideas if desired. This would serve to add yet more variety to the types of data present which can include images, written words and audio recordings.

What specific methods of data collection will you use?

To obtain consistently thorough interpretations of the data, the authors selected multiple methods of data collection. It is important to note that their methodology of participatory self-study is different

from traditional action research methods, which aims to understand “student thinking processes and the appropriateness of the educators associated pedagogies”. (Lunenberg & Samaras, 2011) In other words, they were looking for a positive correlation between their selected methods of teaching and learning and the quality of evidence produced by the student participants. Self study incorporates a number of approaches some of which are described below:

Narrative inquiry is a form of qualitative research that includes stories, interviews, photographs and other artefacts.

Reflective portfolios contain evidence of development that has undergone critical analysis. Gibbs reflective cycle is a tool commonly used for this purpose.

Memory work is a feminist social constructionist method where memories are written in third person as an individual or group in response to a question or theme. Time is allowed for analysis and rewriting to aid the emergence of sensory and emotional outcomes.

Art based approaches refers to socially engaged research within visual art, sound art, literary art, performing art and new media to show how different artist methods are used in each area.

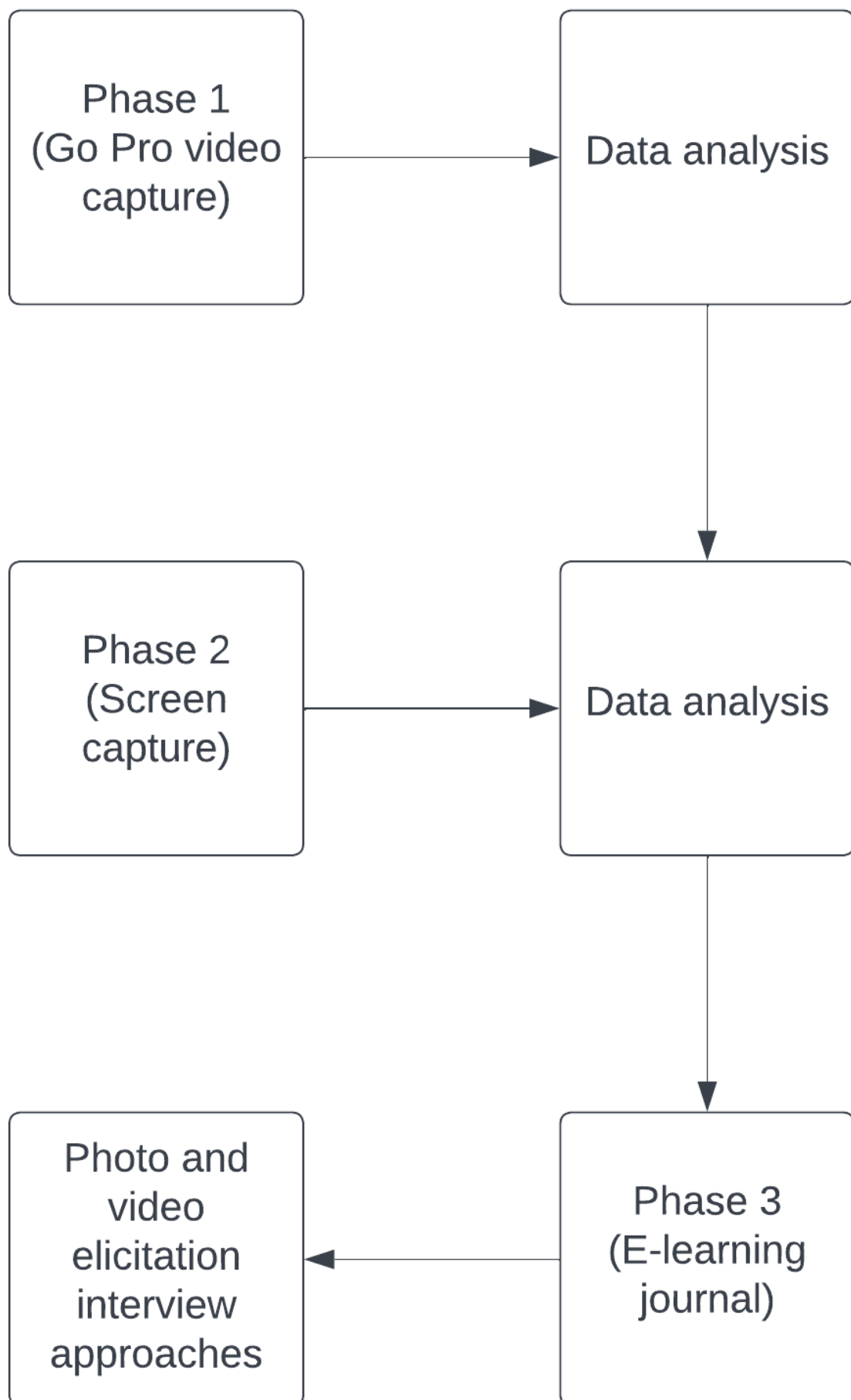
Within a digital photographic tertiary e-learning environment, data was captured using multimedia tools during pre- and post- visualization stages. This centred on what learners did followed by their reflections over three phases.

Phase one: GoPro video capture followed by data analysis.

Phase two: Screen capture video software used for analysis to understand intentions behind post-visualization.

Phase three: Visual participatory inquiry combining data from the first two phases into the photographic e-learning journal “collaboratively dialogued using photo and video elicitation interview approaches that can overlay the narrated voices of the student and the R/P-E.” (Grushka, Bellette and Holbrook, 2015)

Photo (and video) elicitation is an interview method where participants are shown any kind of visual representation and asked to comment on them. Images may be produced by the interviewee in what is known as the native image making technique, or they can be provided by the researcher. The interviewer analyses how the participant ascribes social and personal meaning, describe their emotional response and conveys elicited information. It was French literary theorist, essayist, philosopher, critic and semiotician Roland Barthes who drew attention to the polysemic quality of images stating they have many potential interpretations of meaning.



How will data analysis be conducted?

A qualitative data management tool known as QSR NVivo10 was used to manage and analyse data from both e-learning journal case studies. According to GSR International who developed the software, it is the most cited for qualitative data analysis available. Preliminary findings from each case study were then interpreted for critical discussion.

Consider the time you expect this activity to take?

As the case studies are based on student e-journals, there needs to be enough time for learners to complete phase 1 (pre-visualization + analysis), phase 2 (post-visualization + analysis) and phase 3 (e-learning journal + photo/video elicitation interview).

Results and Discussion (1500 words)

Before discussing the results of this study, it is pertinent to elaborate further on each of the three phases previously outlined. We know that phase one involved the wearing of a GoPro on the head to capture first person video. Documenting the pre-visualization stage from the position of observer was to enable insight into students decisions around how the subject would be represented. By situating digital camera images alongside GoPro video footage, it was possible to analyse their awareness of the location being photographed along with their consideration for compositional and technical aspects. One of the main reasons for doing this is in acknowledgment that verbal commentary whilst practicing an art form is not feasible. It becomes possible to trigger memories of events that they felt were successful, difficult or could have been executed better.

Phase two represents the post-visualization stage which was recorded using QuickTime screen capture video software. The purpose of this is to show how images were zoned in on from a much larger selection. Insight is also gained into how these images are edited, as a visual catalogue of manipulations is created. This would contain varied iterations of the same file as it has been worked on over a time period. It is worthwhile noting that if a photograph has been poorly executed it cannot be improved using image editing software. As analysis takes place after each stage, it is possible for the researcher/photographer-educator and their student to come to terms with this before a reattempt using this newfound knowledge. By recording everything as it unfolds on the screen, it is possible to show how images were downloaded, edited and made into a final selection. Using Adobe Photoshop as a common example of image editing software, it would be possible to gain visual insight into how the tool palette was used. Pinpoint is another software app that makes it possible to see keyboard shortcuts that are being used during the screen recording. All of this contributes to the reflective process by being able to see exactly what happened and interpreting this in verbal and written form.

Through participatory self study, students were encouraged to use four main approaches including narrative inquiry, a reflective portfolio, memory work and art based research. The intention was for them to document their personal and collective learning using the e-learning journal as a non-linear interactive diary, with a time and date embedded into each post. An example of the benefit for bridging physical and virtual learning environments, is that students can document their collaborations whilst brainstorming concepts and learning new techniques. In addition to this, they could discuss their personal observations whilst coming up with their own variations.

Although there were more case study students, two named Kate (K) and Felicity (F) were selected for analysis based on their embodiment of suitable concepts, representational practices and poetic reflective style of their writing. A central question asked whether participatory e-learning pedagogies actually facilitated students critical self-reflective skills. The authors analysis of the e-learning journals revealed that students were able to seamlessly access and interact with a multiplicity of sites and photographic processes. They were able to:

- Upload multiple diary entries in visual and written format
- Upload screen capture footage of editing processes
- Upload photographic videos with information from blogs
- View photographic tutorials about processes and cameras

- Evaluate and review hyperlinked artists work

Felicity's journal commenced with selected images followed by screenshots extracted from Go Pro footage. Their process was explained through written visual analysis. At this pre-visualization stage, they evaluated areas for improvement that they would put into action if a reshoot could take place. They observed by watching themselves back that not enough time was spent at the location where they were working. It was also identified that camera settings had been overlooked, which resulted in images that did not come out as expected. Worn using a head strap, the Go Pro was an ideal tool for data collection as they are portable, robust and easy to use. Having a wide angle lens also meant that it could capture more than normal eyesight in high quality video.

In their post-visualization blog, there was an overview of the image selection process followed by insight into their editing techniques that were then discussed and evaluated. Kate visually described ideas they developed for different images, showing their editing processes with variations of before and after image crops. During the semi-structured interview, K explained that their Go Pro and screen capture footage were used to stop and highlight sections that would benefit from further improvement. Editing and production dates are embedded making it possible to systematically track progress over all three phases of photographic development. In the e-learning journal reflective loops can be opened, closed and revisited ad infinitum in a way that is repeatable.

When reflective writing in e-learning journals from K and F about their pre- and post- visualisation processes was analysed along with interviews, it was found that there was a limited affective vocabulary on display. Using Nvivo, a word search cloud was generated with words such as *just*, *like*, *image*, *really*, *think* and *something* were amongst the most used. Despite the language used, it was observed by the authors that this acts as an entry point into critical reflection where problem solving strategies are conceived in response to meanings related to material, virtual and social aspects. Being able to make individual aesthetic choices for the blog presentation resulted in unique layouts that effectively "links observation, experience and reflection with an emerging conceptual position." (Grushka and Bellette, 2015) Separately, participatory learning in the studio is uploaded as technical documentation by pairing an image of their set-up with text explaining the content. What K wrote shed light on the collaborative learning space, whilst the post could be extended as an attempt to solidify the concept and pair this with a compatible technical approach. This student also used their blog as a problem-solving strategy to scaffold every entry made that successively broadened what could be achieved. When reflecting on their final project for the blog, K reflected on their research into other artists work which in turn enhanced semiotic understanding of their own results. Having more than a single level of critical reflection integrates reflections around approaches to editing, aesthetic influences, subject matter, experimentation, judgements and limitations. This proves that the e-learning journal succeeds in capturing non-linear, connected and associated thinking in a way that traditional art journaling does not. This is due to how the latter typically captures thinking behind work as a post reflective, linearly written artist statement. Being able to retrospectively recall data to be reflected on before further reworking takes place enables the fulfilment of creative desires.

There are two aspects of the e-learning journal usage that are worth considering. It key for the photomedia educator to function as a curator who can effectively contextualise, whilst being a facilitator as well. This particularly applies to encouraging use of the e-learning journal for critical self-reflection on a personal and participatory level. As the e-learning journal aligns the material and virtual spaces of learning, it is inherently well suited for a blended learning environment. When conducting future case studies, it is notable that the rich data source of the e-learning journal can be used in visual analysis to explore four distinct areas. These are:

1. Student behaviour during pre- and post-visualization.
2. Create a record of the pathways taken through image creation.
3. Participatory voice during photographic visualization.
4. Use of multimedia in an art-based approach that encourages reflexivity in the digital space.

Not all tertiary colleges will have access to a GoPro camera that can be used for pre-visualisation purposes during phase one. It is possible for students to instead be informed about how to ensure metadata is embedded into each digital photograph taken out in the field, as this would contain a rich source of technical information that can then be discussed at length. My intention following this action research project is to apply the findings using methods that are feasible.

Conclusion/Recommendations

It has been determined from analysis of the two case studies that the e-learning journal enables multiple levels of critical self-reflection. Students who bridged material and virtual environments on a personal and participatory level demonstrated higher order thinking skills as a result. This strategy could be used where students can consider the intentions behind their work more readily in a way that suits their learning style. Teachers in photomedia have an ongoing responsibility to engage students in the development of conceptual work that is technically fluent and meets professional industry standards. As a method, Photographic Participatory Inquiry is useful for the development of pedagogies in a tertiary e-learning environment. Within this, the e-learning journal can facilitate independent learners through a recursive learning process where observation, analysis and manipulation can be flexibly managed. Crucially, students were able to advantage of democratically accessible digital tools to explore social, emotional and intellectual dimensions in ways that were richly interconnected. Through an embodied poetics of inquiry, students can creatively engage with their own qualitative data in a way that makes it tangible.

As flexible e-learning platforms are now widespread throughout art and design courses in tertiary education, it has become an imperative to take advantage of their pedagogical benefits. Photographic Participatory Learning (PPL) has apparent benefits for researching teaching and learning in an e-learning photographic context. As only a small amount of this has occurred to date, it is necessary to conduct studies of my own that add to findings already made. Through an understanding that this entails research as pedagogy, it is necessary to generate empirical data that can be applied to an investigation into how digital photography is taught. By accommodating a blended learning approach, it is possible for flexibility of individual learners by allowing for alternative thinking patterns. This is intended to act as fertile ground for the development of soft skills including critical self-reflection which is central to this study. This approach is a success where students are able to achieve continual aesthetic refinement using proven methodologies for artistic inquiry.

As digital natives, it is only natural for the current generation of photography students to require multimedia tools that are compatible with their differing experiences and learning styles. The use of these revealed how aesthetic and technical concerns can become associated with the creation of meaning, leading to improved quality of pedagogical interactions relevant to visualization practices.

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