

# **Making Robot Movies: An Innovative International Academic Collaboration to Teach Transhumanism**

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## **Abstract**

*This paper discusses an example of global media production in an educational context that is also a model for online intercultural exchange. We investigate the process of an international, research-led film production project between two universities, RMIT University, Australia and the State University of New York, Oswego campus, USA (SUNY Oswego).*

*The aim of this paper is to investigate how teams which are geographically, academically and culturally diverse may engage in a process of research-led learning. We discuss important issues in the emerging field of online collaboration as they relate to practice and pedagogy in both higher education and industry. We offer some basic guidelines for methods and practice in global online collaboration. We conclude that hybrid techniques which blend virtual and “real” or face-to-face classroom techniques may be most useful to produce exciting screen research and production outputs.*

**Keywords:** E-Learning; Study Abroad; Global Collaboration; Multi-Disciplinarity; Transhumanism; Robots; Film Making

## **1. Introduction**

Instructors from SUNY Oswego developed a Transhumanism course as an innovative multidisciplinary course in computer science, film production and science fiction. As part of the materials used in this course, the collaborators built an online depository of readings and resources that were the basis of an international collaboration with RMIT that included online and face-to-face components.

Using simple online methods, three instructors (Damian Schofield and one other in USA, Lisa Dethridge in Australia) taught Transhumanism by including topics from the disciplines of media production, screenwriting, computer science, literature, cognitive science, robotics, philosophy, artificial intelligence, interface design and psychology. Twenty-five Masters of Human-Computer Interaction students in the USA and fifteen Australian Masters of Media students used this course as the basis of a science fiction screen production. They collaborated online and face-to-face on the research and production of three

short, science fiction video narratives. One special feature of the film scripts was the use of robots as characters which were programmed by students. The unifying theme of the collaboration was how to understand and represent robotic life and intelligence on screen?

Students engaged in working conversations with international counterparts and even with robots. They gained a new sense of cross-cultural competence that we suggest is a key result of global collaborations.

## **2. Globalization in Education**

There is much discussion in university circles about processes of globalization with increased pressure to establish global competence among staff and students. In this context, technology is seen as a tool that can "strengthen institutional global engagement through meaningful international collaborations for faculty and staff" (Helms et al, 2015, 2; ACE, 2016, 1)

Both Australia and the USA have government-led internationalization programs that focus on higher education. Staff, instructors and students are under pressure to become adept with a variety of online forums and platforms that allow the discussion and exchange of ideas (Derouin et al., 2004).

Studies like this one are useful as educators must deal with a rapidly shifting social and immigration context to prepare learners for work in a global marketplace. This results in increased pressure on both educators and students to gain cross-cultural competence. The same pressures apply in the international media industry. For example, international advertising agencies (such as Mystery Box, Mekanism etc.) operate non-stop production studios that are in action producing for global clients seven days and nights a week.

It is not surprising that higher levels of ability in teacher/trainers correlates with higher levels of student achievement and motivation (Schweizer, 2004). It is important then that teachers gain knowledge and experience of various methods of online and blended teaching. The use of online tools is increasingly changing the interaction between instructors and learners in the process (Servage, 2005). This challenges managers who must re-focus teacher training and resources within often slow-moving bureaucracies.

This requirement for a wide range of digital skills in global media industries led the authors to ensure that the international collaboration addressed this need. This paper describes some of the activities that were constructed to ensure our students were introduced to as wide a range of technologies and skill sets as possible. The international nature of the collaborative learning meant that the authors had to make use of e-learning, video conferencing and social media technologies to facilitate student learning.

## **3. E-Learning**

Many educational theorists focus their definition of E-learning as student-centred, interactive and customizable. Many educational theorists agree that, given the right conditions, E-learning can provide a more flexible, integrated and resource-enriched environment for study (Lui and Wang, 2009).

Lui and Wang (2009) make a comparative study of E-learning technologies and products in a global context. They define learning as the transfer and retention of knowledge while E-learning is about the use of technology to achieve this. The authors also point out that E-learning is freed from the usual

restrictions of geography and time which was essential in a project of this nature. Some theorists have examined the underlying structures and processes of globalized education and are critical of the uneven distribution of technology in classrooms from under-developed nations (Verger et al, 3).

Several notable, evidence-based American studies have examined student behavior and online interaction in educational settings and noted that E-learning courses are “often driven by the needs of the institution/program rather than (by) the individual learner” (Yuen and Yang, 2009). Students can learn a lot from each other in social situations outside the classroom, this was certainly the case in the interactions between the American and Australian students. This kind of informal peer learning is not often possible in online courses where students may not even know each other. Further, students inexperienced with E-learning may struggle or drop out of online situations (Yuen and Yang, 2009 and Oiry, 2009)

Arbaugh (2000) compared face-to-face discussion with online discussion to find that online discussion was more difficult but generally of the same quality. The same study showed that in an online setting, women are more likely to participate in discussion which opens up the discussion of how different genders, languages and culturally diverse groups may use online methods as useful education tools.

Designers of industrial training have also helped shape the field (Macpherson et al, 2004). In a well-known study of online training at four large banks, the uptake of E-learning was diminished “because it imposed a role on trainees which did not correspond to their socialisation needs”. In other words, if students don’t like working online, they won’t participate. The banks in the study responded to this problem by proposing “blended learning” (that is, alternate sessions of e-learning and in class face-to-face sessions) (Oiry, 2009). In their survey of the literature and case studies, Yuen and Yang (2009) suggest that developers of online learning programs may collect and organise artifacts and materials in many media formats, allowing users to select contents based on their need or preference. Following the results of this research the authors utilised multiple media formats in his project including text, video, imagery and interactive online experiences to ensure that the students structured their learning based on their own needs and preferences.

The focus of the case study described in this paper is to evaluate new territories that are opened up by online learning - allowing diverse students to reflect upon the materials, to work at their own pace and in their own locations. However, there is simply no guarantee that students will participate in online discussions. Online courseware systems cannot duplicate the atmosphere and interaction of a classroom. The delivery of online course materials, particularly across multiple global locations, clearly requires careful design with its own set of advantages and limitations (Waddill, 2006).

#### **4. Research Background: Transhumanism and Science Fiction**

Students on this course explored the utopian and dystopian scenarios which emerge from both real science and science fiction. They developed themes from their online and in-person discussions which formed the basis of their film screenplays and productions. They based their creative video production work on research into technology-focused topics. The students came from a range of different backgrounds and worked in multi-disciplinary groups to discuss and write about selected topics online.

The student work covered technical, philosophical, scientific, literary and industrial standpoints of issues relating to Transhumanism.

Transhumanism is a loosely defined movement that has developed gradually over the past two decades (Bostrom, 2002). It promotes an interdisciplinary approach to understanding and evaluating the opportunities for enhancing the human condition and the human organism opened up by the advancement of technology. Attention is given to both present technologies, like genetic engineering and information technology, and anticipated future ones, such as molecular nanotechnology and artificial intelligence.

The enhancement options being discussed include radical extension of human health-span, eradication of disease, elimination of unnecessary suffering, and augmentation of human intellectual, physical, and emotional capacities. Other transhumanist themes include space colonisation and the possibility of creating superintelligent machines, along with other potential developments that could profoundly alter the human condition. The ambit is not limited to gadgets and medicine, but encompasses also economic, social, institutional designs, cultural development, and psychological skills and techniques (Bostrom, 2005).

The courses developed by the authors refer to the work of scientists, computer programmers, artists and philosophers who posit advanced technology as the source of industrial innovation. Of particular interest was the popular transhumanist viewpoint that humans will eventually use technology to enhance both mind and body through means of digital and genetic engineering beyond our current human potential (Bostrom, 2011, Hayles, 1999).

## **5. Description of Collaboration**

The collaboration involved multiple international learning experiences for students using a mixed-delivery methodology. The main objective of the global co-production project was to develop enough understanding of science, science fiction and media to produce credible short scripts on themes of Transhumanism. Their research would be used to produce short science fiction videos where leading roles would be played by robots.

This innovative, research-led production course was run collaboratively between two academics at the SUNY Oswego, USA and one from RMIT University in Melbourne, Australia. The course was aimed at Masters level students and tackled the emerging field of Transhumanism. Students collaborated to research and produce a range of outputs including essays, blogs, screenplays, interface designs, robotic effects, science fiction movies and a documentary about the collaboration.

The course had 25 American and 15 Australian student participants. Their international collaboration took place online and face-to-face over six weeks. The Melbourne and New York student groups were already working together on other projects and knew their own “local teams” before they entered the international collaboration. Before meeting face-to-face, the international team of Australian and American students had three weekly online conferences which established friendly relations, had worked together on small research projects, and had developed a pre-production agenda of themes for the production of screenplay material. The overseas collaboration is described more fully in the Study Abroad section of this paper.

We used online synchronous (same time) and asynchronous (different time) tools as well as a dedicated

online learning platform. We structured conference time so that one third of class time was spent in lectures, one third in structured writing or question/answer activities and one third in group discussion. The virtual face-to-face contact simulated by video conferencing allowed students to establish more personal contact. After their initial online meetings, the students in our study soon formed their own groups based on common interests. Collaborative assignments were set that focused on deliverables related to the themes which the students had selected. For example one group researched and wrote about the idea of a technological singularity, another group wrote a dialog on the problems of generalised artificial intelligence.

The project shifted to “real world” presence when a cohort of the American students flew to RMIT campus, allowing real face-to-face collaboration between the two student cohorts in Melbourne. In our experience, the blending of online and face-to-face meetings worked on multiple levels. Staff and students increased their familiarity with a range of media production tools including cameras, editing systems, social media platforms, artificial intelligence applications and robots. For example, working with the American students allowed the Australian media students access to a highly specialised science research that will equip them well in future. The media students stated that many of them changed their perception of the world as they learned about future technologies and the way society is going to change over the coming decades. The Americans gained valuable knowledge in film-making and genre that helped them with their video production.

## **6. The Video Outputs**

Once the group compiled their research, the American group returned to USA. Three teams of RMIT media students each wrote a science fiction script based on their group research. The larger team then re-grouped online to discuss the scripts and exchange storyboards. The American students began programming the robots and shooting the short science fiction videos. The Australian students produced a five minute video documentary about the entire project. (RMIT/SUNY Transhumanism Documentary: <https://www.youtube.com/watch?v=kpnnXrPbS5I>, accessed March 13 2016).

The three short science fiction films all starred robots but had very different plots. “Rob-bot” is a black comedy about a woman whose husband dies so she replaces him with a robotic husband. (Rob-bot : <https://www.youtube.com/watch?v=7SFPS3ootLo>, accessed April 9, 2016).

“Jonno and M8” is a comedy about an Australian man who wins a robot in a science competition and treats him as a mate much to the robot’s confusion. (Jonno and M8 : [https://www.youtube.com/watch?v=2\\_7PyQ30z4g](https://www.youtube.com/watch?v=2_7PyQ30z4g), accessed April 9, 2016).

In the third video, two androids contemplate the idea of being human in a tragi-comic scene adapted from the seminal Philip K. Dick story Do androids dream of electric sheep? (Do Androids? : <https://www.youtube.com/watch?v=aVBepLOKC6M>, accessed April 17 2016).

The transhumanism course, based on the model described in this paper, has been run twice now, once in 2013 and once in 2015 – it is planned to run the course again in 2017. Each time the course has followed a similar path and timeline through the academic year which is shown below.

- October/November Planning stages, apply for institutional permission to run study abroad components
- February Transhumanism graduate seminar begins at the State University of New York, USA
- March Media course begins at RMIT University, Australia
- April Interactive online collaborative learning sessions – initial script ideas are generated
- May/June Study abroad – American students visit Australia, face-to-face collaboration – shooting scripts are finalised
- July / August Film production / shooting in the USA
- August / September Website production / online versions of films

## **7. Issues and Challenges of Global Collaboration**

The constant evolution of web-based systems and devices means that global teams will always face technical issues when relying on technology. (Hill 2002 and Bates, 2005). Our team remained determined to see challenges as opportunities for learning. A few of the issues encountered in this project are discussed here and relate to the use of a learning management system, to the context of Study abroad and to the multiple contexts of multidisciplinary research.

### **7.1 Learning Management System (LMS)**

The authors negotiated access to a popular LMS to host and manage the communication between the participants. The Canvas system was easy to use and to drive and most importantly allowed many students to communicate as larger or smaller groups using easy-to-operate split screens during synchronous meetings. (Canvas, 2016).

In this example of collaborative online learning: we opted to use both synchronous and a-synchronous communication mechanisms. Students were able to meet together using the LMS in synchronous groups for joint meetings online or face-to-face using video-conferencing. However, we opted not to impose too many synchronous (same time) meetings on students. Instead, we allowed an asynchronous approach where students and staff could communicate using diverse channels across their differing time zones. Hence, students were able to self-organise into groups or work alone in their own time to go through readings and make their considered comments. Waddill (2006) points out that the reflective inquiry process provides a powerful tool to spur creative alternatives for solving problems.

Australian students were invited to share the highly detailed course materials assembled on the Canvas site. Australian students read these materials from unfamiliar subject areas and formed insights and questions for their American counterparts – we encouraged the American students to act as subject matter experts, answering technical questions.

Using an LMS like Canvas offers the advantage of providing a single location for learning resources and discussion threads. However when the time came for students to work in their own online groups to exchange ideas they quickly resorted to Facebook, Google and other social media platforms as these were



perceived as being easily accessible, less institutional and less “clunky” avenues of discussion. In addition, we noted that the students enjoyed using familiar social platforms which include the ability to personalise their own virtual spaces.

In summary, the authors felt that having an easy to operate, private, faculty controlled LMS allowed us to gather all resources from multiple locations in a central location that was dedicated to disseminating essential project materials and initiating group discussions. In short, we agree with Waddill (2006) that online-learning platforms can provide “a safe environment for practice and report” so long as their use is planned and well thought out in the context of the material being taught.

## **7.2 Study Abroad**

At the end of their three week online interaction, a group of seven students from the SUNY Oswego travelled to Melbourne, Australia to work in person with students from RMIT University. We did not treat this as a formal exchange which would require onerous paperwork across the upper reaches of both university administrations. The global travel part of the collaboration was structured as a relatively simple and informal study tour. This meant there was no need for us to engage in complex adjustments to any of the curricular requirements. Both groups elected to keep within the already established framework of their own curricula. We also opted to leave assessment to the usual parameters of each national group. This avoided any issues around grade disparity, reporting and learning outcomes.

In the past decade, study abroad programs have more than doubled, where today, about 223,000 American college students study abroad each year, immersing themselves in foreign culture while gaining a relevant educational experience (Clark et al, 2009). It is customary to hear students describe these experiences as “life changing,” but up until recently there was little empirical evidence to support this view. Recent research has revealed that students who study abroad have greater intercultural proficiency, increased openness to cultural diversity, and become more globally minded than those students remaining in a traditional campus setting (Salisbury et al 2009, Paige et al, 2009, McLeod and Wainwright, 2009).

In summary, over the course of this project we learned a lot about the processes of integrating a study abroad component into a collaborative online learning experience. The students who travelled to Australia, when interviewed, all reported that their world view had shifted during the course. Many were already thinking about their next trip overseas, and were potentially aiming to work overseas. A number of these comments were reported in the documentary video created by the students at RMIT which focused on the student experience (<https://www.youtube.com/watch?v=kpnnXrPbS5I>).

## **7.3 Multidisciplinarity**

A further challenge was the multi-disciplinary nature of the project which we framed as an opportunity from the start. The students had a range of academic backgrounds (science, art and humanities). All of the students were made to study subjects from different disciplines outside their usual curriculum stream. Further, they were taught by three instructors, each with their own distinct background and knowledge area (Computer Science, English/Philosophy and Media/Writing).

During the first induction conference, instructors made many statements to students about the value of

multidisciplinary research. We also made reassurances that confusion was often normal in such inquiry and that we were all stretching beyond the comfort zone of our individual disciplines. The instructors repeatedly commented that they felt like students, learning new material from other disciplines – the students often seemed reassured by this, knowing they were not alone in exploring these new areas.

Research has shown that multi-disciplinary teams may encounter problems, which can be detrimental to productive co-operation, which in turn may diminish educational quality (Stalmeijer et al, 2007). The negative effects of the different disciplines on team processes and course quality and the well-established positive association between psychological safety and team learning suggest that educational quality might be improved by enhancing the student's feeling of security and safety.

The students were keen to explore multiple disciplines and cultural frameworks. What began as an initial interest to exchange views on food, movies and culture in their respective homelands grew into an active interest in the exchanges possible between various discipline areas in arts and sciences. Computer science students enjoyed learning how to write science fiction. Media students enjoyed learning the theories of artificial intelligence.

The study of Transhumanism allowed the group to explore the potentials of the two NAO robots owned by the SUNY Oswego. These are sophisticated, configurable, programmable devices that have been used in research all over the world. Students wanted to depict issues raised by their group research. For instance, the videos show robots puzzling over human traits and use humour to illustrate how complex this territory can be.

The resulting written and verbal exchanges on Transhumanist philosophy made for lively and provocative cross-disciplinary class discussion where students raised a great range of questions that drew mystification, laughs, unexpected and insightful responses from the group. The students were extremely engaged discussing a range of topics from head transplants to cybernetic implants, from science fiction literature to artificial intelligence predictions. One thing that was of particular interest was the way that many students sought to ratify their own belief systems with the discussions. A number of the students had very different views forged by differing cultural upbringings and, while being respectful, they often had very different views on the moral and ethical implications of technological developments and the societal implications of these advances.

On balance, the multidisciplinary education approach was considered by both course organisers and students to have a significant impact on the understanding and modes of interaction with the materials on the course curricula. It was perceived to have a positive impact on the development of personal and professional confidence; to enhance mutual understanding; to facilitate inter-professional communication; and to encourage students with narrow academic experience upon which to draw to reflect upon a broader range of topics and disciplines.

#### ***7.4 Cross Cultural Competence***

We all face challenges to personal identity in the course of our civic, social and work life. Students, educators and industry practitioners must come to terms with cultural pluralism both in the academy and in the larger culture (Bennett, 1986).



Understanding that our multidisciplinary participants crossed a range of cultural competencies, our goal was to provide them with tools that would allow the most streamlined and “friendly” of collaborations. Film production is traditionally a creative process based on consultation, negotiation and decision-making whereby individuals and teams make collective decisions (Bordwell and Thompson, 2001, Author 1). Therefore, we needed a mechanism which allowed students to interact. Initially this interaction was organised around icebreaker sessions and structured activities, but it naturally progressed into student led communication and collaborative work.

We provided a range of social and communication tools to accommodate a range of learning styles and a range of communication forms, letting the students organise themselves accordingly. In this way, we felt that the form of the communication was perhaps more important than the content. Such a diverse group was able to communicate successfully across a variety of boundaries which may demonstrate the potential for multi-disciplinary, trans-global, online collaboration.

The Learning Management System allowed students to submit questions and comments that received individual attention from colleagues and instructors. In the process, students developed skills in written expression and questioning that involved various degrees of cross-cultural competence. For instance they may need to re-contextualize their usual terms or re-phrase complex technical concepts in everyday language. Online forums and meetings (created and run by the students) allowed students to review and revise materials while working across cultures in an international context. Observing the students, it was obvious that they felt comfortable with the control they had and were able to self-regulate their collaboration.

When students arranged to meet for more “facetime” in the LMS (or using Google Hangouts, Facebook or Skype), they increased their sense of personal familiarity by reading voice tone, facial expression and body language that are all part of trust-building. They were then able to follow-up on these impressions by engaging in more in-depth discussion online using responses to readings and a more careful composition of questions and answers.

Students in this global project used English as the central code to engage in a process of negotiation where they learned important aspects of cross-cultural competence.

There is a lot that can go wrong in all this despite Google translate and other aids. Quantitative studies concerning culture and language in global projects suggest that online environments can potentially amplify national differences that exist between virtual team members in a negative manner. The data shows that cultural intelligence has a strong impact on performance and that virtual teams who used a common language consistently are more satisfied (Lauring and Klitmoller, 2014).

In summary, the concept of cross cultural competence is difficult to pin down because what is required is not a measure of cross-cultural knowledge, skills, and attitudes but a measure that assesses the appropriate and effective use of cross-cultural knowledge, skills, and attitudes in an academic context.

Assignment evaluations by a professor are relevant to the student's academic performance, but cultural competence and social interactions with others need to be assessed both in and out of the university environment. This includes the ability of students to perform project related tasks such as planning, organising, and delegating. Social interactions reflect an orientation to others or an ‘emotional

connection' to others that can be positively correlated with successful cross-cultural adaptation; social interactions also include the ability to manage the emotional conflicts caused by polycontextuality. An adequate measure of cross cultural competence among our students should, therefore, capture these multiple dimensions of their performance over the life of the project.

#### *7.5 Summary of Global Collaboration Issues and Challenges*

This example of global media production provides a simple model for complex intercultural exchange. There were several layers of "culture" to be crossed including national boundaries, discipline boundaries, programming and species boundaries of the human and the machine variety. For example, students had to research and program robots within their science fiction videos which raised many technical and conceptual questions for their global production process.

This complexity was manageable however due to the combination of simple communication tools and blended learning. We used face-to-face encounters as a foundation for intensive online research and discussion. We ensured all students had access to a plethora of online research materials and gave them independence when it came to self-organising their online group discussions.

This complex multidisciplinary learning environment meant that students soon conquered their confusion to become more culturally competent. They recognised the ambiguous and shifting nature of context on many levels, from the real to the virtual, across time and space, science and art. This enables students to make a considered response to alternative opinions based on "qualitative judgments and critical thinking: as opposed to bias or habit." In short, they become more competent at collaborative activities that cross national and cultural borders (Bennett, 1986).

## **8. General Guidelines for International Collaborative Education Projects**

Reflecting on observations made during this study of a global online collaboration, the authors suggest a few key points worth noting. In a global classroom, there is often confusion. In multidisciplinary research, there are often no clear answers; no clear sense of "right and wrong"- just a lively debate. Despite the complexity of the research context, the use of simple tools and flexible procedures provided a clear pathway to solutions.

We suggest online global collaboration needs to focus on personal interaction first and above all else. This allows essential human aspects of trust, humour, familiarity and curiosity to develop. Further, we emphasise that global online collaborations need not be as complex as the one outlined here. It is relatively easy to use low-cost technology to provide global learning opportunities to an increasingly diverse student population.

We are not focused on any particular technological solution. A readily accessible and navigable central source for learning materials and readings is a useful starting point. Nor are we advocating student travel as an essential part of the project. Students are capable of self-organisation with international collaborators across a variety of platforms that they are already familiar with.

We offer the following guidelines to clarify some methods and opportunities for practice:

- Successful online learning requires a supportive organisational climate where faculty are able to integrate organisational change with change to the curriculum (Welsh et al, 2003).

- Avoiding administrative overhead where appropriate can streamline the arrangements of international collaboration and study abroad opportunities.
- There is a need to have faculty who know and trust each other, and if possible have worked together in the past. The two authors are former colleagues at RMIT, Melbourne with a trusting, working relationship. We shared assumptions about what it meant to empower students in an online context and therefore were able to avoid internal differences based on pedagogy or process.
- Media production requires freedom of expression and discussion so the communication tools need to encourage the independence of participants and allow them to self-organize
- Access to an LMS that the faculty can control and configure can be a great help. The same resources should be provided to both groups of students to foster the sense of shared learning.
- While the technical solutions, and LMS systems used, may be low-cost and off-the-shelf there is little that is “cheap” about planning for students overseas travel. Global mobility is an expensive solution that may be offset by “internationalisation at home.” In this arrangement, teleconferencing tools are used to simulate “presence” and even the students that do not physically travel all report that they felt like they had an “international” experience in this class.
- Simple online communication methods such as popular social media platforms should be encouraged. Letting the students use technology they are comfortable with leads to them engage more readily in a process of research-led learning, mediated by the technology they choose.
- Ensure you have good technical support - technology can always cause problems when you least expect them. Also learn to flip to a low-tech solution such as Skype if needed.
- Support staff with backgrounds in IT, graphics and multimedia to work alongside faculty who have a strong grasp of the various online channels, tools and materials now available to researchers.
- Another cost associated with collaborative international online learning relates to the extra work that needs to go into preparing course materials and resources. Faculty may also need to set aside time during weekends and evenings in order to make international meetings due to time differentials.
- Time zones (especially large ones such as the one between the USA and Australia) can be a problem. Students need to be flexible with their overseas partners; to arrange times in the evening or early morning beyond class schedules.
- The video-conferenced meetings between participants on opposite sides of the globe are essential to break-the-ice and create bonds.
- Using a common spoken/written language that is shared by most team members will facilitate the exchange.
- Keep it fun. All the of the faculty involved in the Transhumanism class rated this particular course as one of the most enjoyable they have ever taught – even with all the extra work involved in running something so complex. This enthusiasm passes on to the students and the feedback from the students on this class was extremely good – with the international collaboration being highlighted as one of the most enjoyable aspects.

## **9. Conclusions**

This paper has described how using simple online methods, a core group of around 40 students collaborated to produce three short, science fiction films using programmable robots as characters. The team also produced a short video documentary about the collaboration itself which includes student commentary. They learned much about how to understand and represent aspects of Transhumanism theory, including artificial life and intelligence on screen. The exercise allowed students to demonstrate many forms of cross-cultural competency where the participants worked across borders of geography, culture and academic discipline. They explored the relationship between humans and our technological extensions using tools including cameras and robots. They used an online learning management system in addition to familiar online social media applications to engage in a process of research-led learning. Most importantly the students learned how to manage a blend of synchronous and asynchronous methods to schedule and manage regular online exchange and debate that fosters a strategic online partnership.

The aim of this paper was to investigate how teams which are geographically, academically and culturally diverse may engage in a process of research-led learning. The paper has discussed and described a number of important issues in the emerging field of international education (both online and face-to-face) and offered a number of basic guidelines for methods and practice in global online collaboration. The process discussed here certainly provides a model that may be useful for collaborative screen practice as a means to produce exciting film research and production outputs that go beyond traditional academic outputs.

Yuen and Yang (2009, p 460) state that there has been a shift from the web as a medium where content is transmitted and consumed, into a platform for student-centred work where “content is created, shared, remixed, repurposed and exchanged.” Accordingly we created a virtual online environment that contained a number of flexible web-based tools allowing students to communicate in a variety of forms, to edit and updates entries, to videoconference with each other and exchange information easily.

We agree with Yuen and Yang (2009) in constructing a pedagogical framework that supports the creation and management of project goals. This example of an educational project involving global media production provides a simple model for handling multiple, complex layers of interaction. Online systems are powerful tools in the pursuit of production goals as they can offer both instructors and students a flexible means of linking material and comments.

In general, this framework allows students to evolve from a focus on individual tasks to a higher level of awareness that involves not only questions from outside their own field but also questions about the nature of creative collaboration itself. They gain a crucial understanding of factors that will be common to global collaborations in any creative industry, not just media production. The students learn to negotiate the challenges and obstacles associated with shifting global time zones and with the shifting digital universe of online communication tools and platforms.

We agree with Sloman and Reynolds (2003) that online collaboration is often constrained by limitations in the technology. We also suggest that the model and guidelines offered here may be generalisable across other contexts. While the Transhumanism content of this project was particularly complex, the course was successful because the interaction tools were organised to allow for simple and flexible, low-cost

communication. Emphasis was taken off the technology and placed on the facilitation of intelligent interaction and discussion as the main priority. We hope to see more colleagues and collaborators undertaking similar, exciting projects in their own classrooms and production studios.

In conclusion, all of the students who took this Transhumanism course become more sensitive to a variety of cultural parameters including human and machine language, custom, and the various frameworks associated with different academic disciplines and industry areas.

## **10. Future Work: Extending the Model**

RMIT and the State University of New York have recently entered into a formal partnership and both the authors and the intuitions are intent upon continuing this activity. The agreement is under the auspices of the SUNY Centre for Online International Learning which is a world leader in the field. (COIL, 2016) The authors hope to scale-up the collaboration, which has fulfilled our initial needs to internationalise the student experience. Such global collaborations raise new interest among both industry practitioners and researchers in international measures of quality and impact. All of the students worked harder knowing their work would reach an international audience. The instructors involved also are keen to disseminate their experience and results to a wider audience.

All of this suggests some larger implications for the epistemology of learning, including the importance of cross-cultural competence, and international multi-disciplinary education. This provides a myriad of potential subjects for future research and pedagogical study. Future research may be needed to consider all stakeholders' experiences of collaborative, online international experiences - especially as "the learner's voice is often significant by its absence in the debate" (Sloman and Reynolds, 2003).

Finally, we suggest that teaching screen production within a research-led learning environment may enhance our ability to create inspiring international stories and to enhance international employment opportunities and learning experiences for students.

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## **Filmography**

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