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# Embedding High Definition Videoconferencing in Higher Education to Create Global Graduates

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# CREATING GLOBAL GRADUATES

Embedding High Definition Videoconferencing in Higher Education to Create Global  
Graduates

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### Abstract

Study abroad programmes designed to meet industry needs for graduates with inter-cultural skills and a global outlook have low participation rates in Canada and Ireland due mainly to financial barriers. Embedding the use of High Definition Interactive Videoconferencing (HD IVC) in higher education has the potential to create ‘Global Graduates’ with the skills sought by employers today.

The ‘Global Class’ is a concept which has been developed at Durham College, Canada. Using HD IVC, students from different countries can participate in a ninety-minute class facilitated by Durham College and led by an invited thought leader with expertise in a specific domain.

This paper documents the specific experience of first year undergraduate students from the Institute of Technology, Blanchardstown (ITB), Dublin, who participated in a Global Class dealing with business ethics in November 2015. Feedback from a sample of the ITB students who participated in the class is encouraging. It points to an enriched cross-cultural learning environment, suggesting the approach provides a basis for the creation of ‘Global Graduates’. Additional research will serve to further validate the approach and the practicalities of deploying the concept systematically and persistently in course curricula.

*Keywords:* internationalisation, overseas study, erasmus, videoconferencing, global, class, culture, engagement, HD IVC, Durham College, ITB

## Embedding High Definition Videoconferencing in Higher Education to create Global Graduates

Internationalisation of higher education of which overseas study is a component part is beneficial to national economies, Higher Education Institutes (HEIs) and students (Brandenburg et al., 2014; Dwyer & Peters, 2004; Hegarty, 2014; Hunt, 2011). Moreover, Hénard, Diamond and Roseveare (2012) point out that overseas study programmes for students are the most visible part of the Internationalisation activities undertaken by HEIs. In 2014, almost 5 million students worldwide studied overseas, up from 2.1 million in 2000 (University of Oxford, 2015), evidencing an increased focus on Internationalisation by HEIs.

Brandenburg et al. (2014) report that students who have participated in the EU's Erasmus student mobility programme "are in better position to find their first job and to enhance their career development" and they "have a more international life and are more likely to live abroad" (p. 14). Moreover, citing a study by Sweeney (2012) Brandenburg et al. (2014) point out that "studying abroad could significantly boost the employment opportunities of a graduate and bring benefits to the UK's knowledge economy" (p. 69).

Significantly, however, only 3.1% of full-time Canadian undergraduate university students and 1.1% of full-time college students have an overseas learning experience. Furthermore, in 2013/14, an estimated 1.86% of Irish higher education students participated in the EU's student mobility scheme: Erasmus. High cost is reported as a barrier to overseas study for students in both Canada and Europe (Canada's Performance in International Education, 2016; Souto-Otero et al., 2013).

Brandenburg et al. (2014), citing papers from the OECD (2004) and Wächter (2003), point out that there are alternatives to overseas study: "internationalisation at home, which consists of incorporating intercultural and international dimensions into the curriculum,

teaching, research and extracurricular activities and hence helps students develop international and intercultural skills without ever leaving their country” (p. 7).

Therefore, the purpose of this paper is to propose the use of technology - high definition interactive videoconferencing (HD IVC) – to overcome financial barriers and provide students with a virtual international “at home” learning experience (thereby enhancing global outlook, the appreciation of cultural differences, and the ability to work and engage productively with overseas students). Embedding the use of HD IVC in course curricula over the duration of a programme has the potential to alter classroom dynamics and to create “Global Graduates”. According to PricewaterhouseCoopers (PWC), “global” does not mean “multi-lingual”. Global graduates are those who can take a global perspective and are able to work in multi-disciplinary, multi-cultural, and multi-locational teams. (Pettitt, 2013).

The paper is structured as follows: Section 1 reviews the case for overseas study, Section 2 reviews the literature on the use of videoconferencing in education, before a case study involving the application of HD IVC at Durham College, Canada is examined in Section 3 - Methods. A discussion and conclusions follow in Section 4, while Section 5 identifies recommendations for future research.

### **The Case for Overseas Study**

Feedback from Canadian employers such as Thomson Reuters, Tim Hortons, and others highlight that the future of work is essentially global (D. Harder, personal interview, April 2015). Moreover, cultural competencies are becoming increasingly important as workplaces become more diverse and networking has become an essential tool in obtaining employment. “Foreign language skills and cultural awareness are complementary to other skills such as business, science, engineering and technology” (Expert Group on Future Skills Needs (Ireland), 2015, p. 12).

The European Commission highlights that 64% of employers consider an international experience as being important for recruitment. Significantly, 92% are looking for transversal skills such as openness to and curiosity about new challenges. Additional skills being sought include problem solving and decision making skills, confidence, tolerance towards other personal values and behaviours (Erasmus Impact Study, 2014, p. 4).

Altbach, Reisberg and Rumbley (2009) argue that a failure by higher education to make international opportunities available to all equitably will mean the distribution of the world's wealth and talent will be further skewed, with only the wealthiest students and scholars able to exploit new opportunities.

### **The Use of Videoconferencing in Education**

The literature provides evidence that educators and institutions at primary, secondary, and tertiary levels are using IVC creatively and effectively in a variety of ways, including: eliminating distance (Candarli & Yukson, 2012; Clarke, 2015; Smith et al., 2012; Sternberger, Deal, & Fountain, 2011), collaborating with other schools and colleges both at home and overseas (Hopper, 2014; Jones, Dean & Hui-Chan, 2010; Rautenbach & Black-Hughes, 2012; Stephenson et al., 2010); providing virtual tours and gaining access to external expertise using invited guests (Ashley, 2010; Morgan, 2013; Townes-Young, 2005); providing inter-cultural experiences (Bell, 2008; Ferry & Kidd, 2012; Jones et al., 2009); overcoming cultural challenges – males teaching females in Saudi Arabia cannot be in direct contact and vice versa (Al-Ahdal & Al-Hattami 2014); providing more course variety (Armstrong-Stassen & Lumpkin, 1998); increasing class capacity (Doggett, 2008; Wang et al., 2010); enriched learning (Piki, 2010).

Armstrong-Stassen (2011) argues that “not all courses can or should be taught via videoconferencing” (p. 62). Nonetheless, a number of studies indicate that IVC is an effective mode of educational delivery with the following qualifications: staff and students

must be prepared and trained in its use; the supporting technical infrastructure (network, large video display, software, cameras and sound components) should all operate reliability; there should be adequate on-site technical support, the room layout should allow participants to see and hear each other, and the sessions should be interactive (Al-Ahdal & Al-Hattami, 2014; Candarli & Yuksel, 2012; Clarke, 2015; Doggett, 2008; Gill, Parker & Richardson, 2005; Grant, 2007; Piki, 2010; Smith et al., 2008; Wang et al., 2010). Interestingly, there is also evidence to show that the involvement of external speakers as an element of IVC is beneficial for students (Ashley, 2010; Kumari, 2001; Metrejean, Pittman & Zarzeski, 2002).

Moreover, Ferry, Kydd and Boyles (2012) propose that videoconferencing “provides a discovery learning environment in which students can interact across cultures in meaningful ways without traveling” (p. 139). Other studies also point to the ability of IVC to support the development of global perspectives and cultural awareness (Bell, 2008; Jones, 2010). Citing Engle and Engle (2002), Bell (2008) argues that global learning, like study abroad courses, need to “help coax into being the openness and empathy that is necessary for successful cross-cultural experiences [through] mechanisms for meaningful, regular cultural contact and reflection upon that interaction” (p. 9).

The use of IVC also allows students to become comfortable with it as part of their college work, which in itself is a benefit (Piki, 2010). Graves (2013) has found that 76 percent of business decision-maker respondents to a survey are now using video conferencing at work. On this point, Armstrong-Stassen and Lumpkin (2001) cite Hildebrand (1995) who asserted with some foresight that “videoconferencing literacy will be as important as computer literacy” (p. 163).

## **Methods**

This section describes the Global Class concept developed at Durham College and takes a case study approach to assess the impact of a single Global Class dealing with business ethics on Irish undergraduate participants. The class took place in November 2015.

### **The Global Class Concept**

The Global Class concept at Durham College uses HD IVC to bring together students and a guest from four international locations (which can vary). In practice, a Global Class at Durham College runs for ninety minutes and uses an accomplished, high calibre thinker/doer with global perspective in a chosen domain to lead the class. Examples of participating global thinkers include Hazel Barton, Biologist; John Morrison, Canadian Educator; Sally Armstrong, Journalist; John Hofmeister, President and Author. Global class guests tend to be those with experience in applying their ideas within a professional context.

The Global Class is incorporated specifically into two modules (Short History of the World, Humanity's Destiny) taught by one of the authors (Lon Appleby (LA)) to undergraduate students at Durham College. These modules explore our common human story from both a historical and forward-looking perspective at a time of accelerating development and interdependence, best expressed perhaps by the following words written by a Durham College student: "We may live in different countries, practice different religions, follow different ways of life, but we are all affected by the planet we live on and we all share its resources and its fate."

The availability of the Global Class technical facilities at Durham College also allows course program leaders or individual instructors from Durham College or its overseas partner institutions (currently 17 located in 12 different countries) to organise and lead (or participate in) Global Classes. Recent examples include business ethics and wearable technology. At the time of writing, 32 Global Classes of this type had taken place.



While not yet formally incorporated in specific higher education programmes, such Global Classes provide “home internationalisation” learning opportunities (Brandenburg et al., 2014) for educators and their students.

In practice, Global classes are planned in advance. Each one has a lesson plan to maximise interactivity and to guide discussion towards the achievement of specific learning outcomes. Students are provided with reading materials for review prior to a class, thus exploiting the potential of a “flipped classroom” approach (Bergmann & Sams, 2012) with an added international dimension.

The Global Class also has a dedicated website available ([theglobalclass.org](http://theglobalclass.org)) which facilitates live streaming of classes to wider audiences while they are in progress. It also allows students and others to access recorded classes for review after they have been completed. The availability of analytics makes it possible to track and analyse worldwide participation.

### **Ethics Class - Case Study**

In November 2015, seventy-one first year business undergraduate students from the Institute of Technology Blanchardstown (ITB), Dublin, Ireland were invited to participate in a Global Class. Students from Durham College, Canada, and Illorin University, Nigeria, also participated. The class focussed on business ethics, using the Volkswagen emissions scandal as a backdrop. Attendance for ITB students was optional. On the day, thirty students attended, representing 42% of the class. The class was led by Mr. Ryan Turnbull a Canadian entrepreneur whose company, Eco-Ethonomics, specialises in supporting Canadian companies achieve best practice ethical behaviour. Mr. Turnbull participated from a fourth location, Whitby, Ontario, in Canada. The class was facilitated by one of the authors (LA) and the Dublin participation was coordinated by the second author (Paul Dervan (PD)).

During the class, each location could see, hear, and interact with each other. Students in Canada and Ireland had access to large video screens and additionally the students in Ireland used a roving wireless microphone to participate in the discussions and interactive exercises in which flip charts were employed at each location. Students in Nigeria had access to a PC with high definition camera. They also had a flip chart available.

A detailed lesson plan dealing with the conduct of the Ethics class is included as Appendix 1. In summary, the class began with an introduction from one of the authors (LA), followed by a presentation dealing with ethical concepts from the guest speaker (Ryan Turnbull CEO of Eco-Ethonomics). Students were then invited to engage in discussion and undertook a number of task-based activities.

### **Student Feedback on Participation in Durham College's Global Classes**

In the week following the class, students were given the opportunity to write a reflective log based on their experience of the class. It was an optional assessment topic (i.e., students could have chosen to reflect on a different topic) worth 5% of their coursework. Nineteen logs were submitted electronically to Moodle/Turnitin<sup>1</sup>, representing 63% of the students who attended the class. With the consent of the students and using an inductive thematic analysis approach, their logs were reviewed by one of the authors (PD who previously graded them) to identify feedback (both positive and negative) based on phrases and words used in the logs.

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<sup>1</sup> Moodle is the Virtual Learning Environment used by ITB and Turnitin is used to check for plagiarism.

Table 1 sets out the main themes and the frequency of occurrence within the logs.

Table 1. *Thematic Response Analysis*

<u>Thematic Response</u>	<u>Repetition</u>
Effectiveness of external speaker in supporting my learning	21
Cultural awareness	13
Do more Global Classes	8
Expanded my understanding	8
Insufficient time	7
Interaction	6
Technical difficulties with Nigeria	5
Enjoyable	4
Quality of Technology	3
Facilitation	1
Fun	1

The analysis suggests students' learning was supported by the external speaker, and this is consistent with findings from the literature. Students also identified cultural awareness, expanded understanding and interaction. This is evidenced by the following excerpts:

when it comes to business ethics, no news is bad news ... we were asked to list seven things which we found important for business, we put religion at six and the Nigerian college put it second. The Canadian college didn't even list it ... the amount of similarity between the lists ... I liked the fact that we got some new knowledge from people across borders ... It was a huge success, would like to do it again ... better than taking notes at ordinary lectures...

The logs also identified that the class was enjoyable and "fun". In terms of "negative" themes, it can be seen that technical issues (poor sound and some drop-outs at the Nigerian college) featured in the feedback. Time management is also identified as being problematic

in that the class did not get to deal with the Volkswagen scandal in any great depth in November. The learning here is that interaction in virtual classes (a good characteristic) may cause the class to deviate from the overall schedule and that students' expectations may need to be managed in this respect as part of an initial familiarisation session i.e., learning as a process rather than trying to reach a goal.

The authors also have feedback comments from Durham College students who have in the past participated in a number of Global Classes. Canadian students have identified the value (and commitment) of global thought leader/thinkers ('guests'); the effectiveness of the technology, and the fact that Global Classes brings a global perspective to their learning.

These benefits are highlighted in the following excerpts:

It allows us to connect the classroom material to real life experiences, which creates an effective learning environment ... technology is a powerful tool, and we should be learning how to use these tools that are available, in the classroom ... the connections I have made through Global Class discussions with students around the world are as valid as those I make within the classroom ... World authorities on various subjects can be beamed into the classroom with ease and our guests often return because they enjoy and value the experience...

### **Discussion and Conclusions**

#### **Discussion**

Providing support for Bell (2008), Ferry et al. (2012) and Jones (2010), the findings suggest that the Global Class approach creates an interactive learning environment which supports the development of global perspectives and cultural awareness. Moreover, the positive impact of an external guest (global thought leader) resonates with the findings of studies conducted by Ashley (2010), Kumari (2001) and Metrejean et al. (2002). The findings also point to the benefits of students being able to use the technology as part of their

learning, which is aligned with Armstrong-Stassen and Lumpkin's 'videoconferencing literacy' requirement for students. The interactive nature of the class as reported by students also suggests that the approach supports 'synergistic learning' as identified by Beauchamp (2010).

While the findings are encouraging, the authors acknowledge the research limitations of a single qualitative case study complemented by feedback from Canadian students. Nonetheless, the evidence suggests that the Global Class concept with its strong execution capability, technical infrastructure, and growing selection of partner institutions, together with input from a network of committed high-calibre external speakers, delivers significant benefits to students. To use chemistry as a metaphor, these elements can be combined and re-combined repeatedly, not unlike atoms bonding together, to create "compounds of interactive learning" over time which, to use Beauchamp's (2010) terminology, are dialogic and synergistic rather than authority (lecture)-based in nature. The authors believe the approach has the potential to internationalise all students' learning - particularly those who might otherwise never get an overseas study opportunity - if used persistently as an integral part of a program curriculum.

### **Conclusions**

This paper presented two premises: 1) the employment attractiveness of today's graduates is enhanced if they have availed of overseas learning experiences and 2) in reality many students cannot avail of overseas study programmes due to financial constraints or for other reasons. The main purpose of the paper was to propose that learners be provided with a virtual international learning experience by embedding HD IVC in course curricula, thereby increasing learners' global and cultural awareness without the need to travel.

In order to establish the merits (or otherwise) of the proposed approach, evidence from a literature review dealing with videoconferencing in education, along with a case study

based on an ethics ‘Global Class’ facilitated by Durham College, were examined and presented. The evidence from the literature and the feedback from students suggest that properly set up and managed, a class that gives students from different parts of the world the opportunity to learn together with the accessible and technically sophisticated platform that The Global Class provides, can develop and enhance the students’ global and cultural perspectives, particularly when an expert thought leader is involved.

Crucially, the vast majority of students cannot or do not avail of an overseas learning experience as part of their undergraduate studies. Given the desirability of graduates having a global outlook as well as the economic realities graduates face, educators and HEIs today will need to be innovative and strategic in helping their students be well prepared for today’s global work environment. In a sense, the Global Class concept offers educators the opportunity to light a candle rather than curse the darkness.

### **Impetus and Recommendations for further research**

The authors acknowledge that quantitative research will provide further insights to the findings presented here – this research is being planned. Moreover, to further enhance and extend the Global Class concept in altering today’s classrooms, additional research (perhaps using an action research approach) is required. This should focus on how best to integrate the Global Class concept into existing programmes so as to produce ‘Global Graduates’ in the future. Research also into the area of collaborative, innovative international assignments for students may be fruitful, particularly in the light of the truism that “the assessment tail wags the learning dog” (i.e., students want ‘rewards’ - grades - for performing tasks). Attaining ‘best practice’ in terms of assessment content, process and rubrics will be underpinned by additional research, perhaps building on the work of Igbrude, O’Connor and Turner (2014). The opportunity to have students work and be assessed as part of an international team focussed on everyday problems facing the global community is likely to be motivational and

to provide a platform for deep learning and skills development commensurate with those required by employers today.

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## Appendix 1

**Global Class in Business Ethics – Lesson Plan****1. Introduction**

It is planned to hold a ‘Global Class’ on Business Ethics on **Friday November 27<sup>th</sup> 15:00 – 17:00 (GMT)**. The class will explore the theme: ‘Ethical people make ethical organisations, however people do not always behave ethically’ using the Volkswagen revelations as a context.

The Global Class concept has been pioneered by Professor Lon Appleby from Durham College, Oshawa, Canada and allows for an open exploration of universal topics free of outside influence. Students interact with a challenging guest, meet people from varied backgrounds, share materials, and learn from one another using state of the art Polycom video conferencing software hosted by Durham College.

The global class experience offers participants the chance to gain a better understanding of our societies and ourselves in complex "glocal" times. The business ethics class will involve students from Durham College, the Institute of Technology, Blanchardstown, Dublin, Ireland and Illorin University, Nigeria interacting with each other and a guest: Ryan Turnbull, CEO of Eco-Ethnomics. Ryan will give a brief presentation and the students will explore the topic through discussion and activities guided by Ryan.

The session will be streamed live from the Global Class website (<http://www.theglobalclass.org/>) and a Live Twitter feed will also feature as part of the session.

**2. Objectives**

- (1) To sensitise students to the importance of sound ethical behaviour on the part of individuals as a key determinant of organisational success.
- (2) To allow students explore the factors influencing the formation of ethical norms and any differences that may be attributable to location and/or culture. Additionally, to identify any location/culture-specific differences that may exist in the perception of what constitutes correct ethical behaviour in a business context.
- (3) To demonstrate the power of technology in facilitating global collaborative working.
- (4) To facilitate students in building international contacts.

**3. Execution**

- (1) Introductions and overview of session (Lon) [5 minutes]
- (2) The guest speaker will address the students for 15 minutes on the importance of ethics and their impact on organisational success. Following the guest’s address, the students will work on two tasks with each location reporting back on their respective ‘findings’.
- (3) Task No. 1 (estimated time 36 minutes)

- Working in teams of 4 at each location, students will identify on flip charts those factors which they believe influence and inform ethical behaviour (10 minutes). Each location will report back the factors identified. This will facilitate a composite list of factors to be compiled. [6 minutes]
- Students will then be asked to rank the factors identified at each location from 'most significant' (= 10 on a scale from 1 to 10) influence to 'least significant' influence (=1) [10 minutes]. Again, each location will report back its ranking. The availability of the ranked lists from each location should surface any differences [10 minutes].

(4) Task No. 2 (estimated time 36 minutes)

- Working in teams of 4 at each location, students should identify and rank (score of 10 = most relevant factor) the factors they believe have contributed to the ethical misbehaviour at Volkswagen. [20minutes]
- What actions should Volkswagen take to address the problem? [10 minutes]
- Each location will report back the factors identified. This will facilitate a composite list of factors to be compiled. [6 minutes]

(5) Guest speaker to summarise key points

#### 4. Student Preparation

The following materials to be read and/or viewed by students (ideally) in advance of the global class:

Article 1 – The Biggest Culprit in Volkswagen's Emissions Scandal

<http://fortune.com/2015/10/13/biggest-culprit-in-volkswagen-emissions-scandal/>

Article 2 – Ethics The VW Scandal: Huge Consequences, Simple Ethics Lessons, Ominous Implications Alarms

<http://ethicsalarms.com/2015/09/27/the-vw-scandal-huge-consequences-simple-ethics-lessons-ominous-implications/>

Article 3 – Managing for Organisational Integrity

<https://hbr.org/1994/03/managing-for-organizational-integrity>

Article 4 – In Life and Business, Learning to be Ethical

[http://www.nytimes.com/2014/01/11/your-money/in-life-and-business-learning-to-be-ethical.html?\\_r=0](http://www.nytimes.com/2014/01/11/your-money/in-life-and-business-learning-to-be-ethical.html?_r=0)

#### 5. Assessment

Write a 400 word personal reflection based on your participation in this class.