

## VIDEOGAME DEVELOPMENT & ONLINE EDUCATION: A CRITICAL CONNECTION

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**Abstract.** This research paper tries to prove the viability of videogame development online programs to successfully create industry professionals, by having a look at the history of online education as an emergent technology and its evolution through the years by creating a timeline, in order to analyze its growth and reception from the perspective of institutions, employers, and students of foreign backgrounds as well as its relationship to the creation and acceptance of multimedia programs like videogame development. Within this research, quantitative data such as percentage graphs and employment rates are used in order to support the stance that both videogame development education and online education are being accepted by modern day employers. In addition, the ethical implications of creating a platform which changes the way in which students engage online against traditional education are also analyzed, by using established ethical theories in order to define ethical behaviors applied in distance learning.

**Keywords:** Online education, distance learning, videogame development degree, multimedia, language barrier.

### Introduction

As technologies advance throughout human history, the need for education is a special one, as more and more people grow with the necessity of accessing information regardless of the place they might currently be at. Emergent technologies for distance learning have only evolved and become increasingly available to people of all interests, cultures, languages, among others. Because of this, it is imperative to understand online education's historical relevance, impact on society, and ethical implications. It's important to establish this information, as it will also help us understand its relationship to new emergent multimedia educational programs established within this framework: videogame development programs.

We will also look at the cultural effect found in using this educational platform from the perspective of foreign students seeking education in countries outside their own, as online education has started to become a viable global market at the last couple of decades, particularly in less developed countries, where it is more culturally acceptable to attend schools physically as opposed to taking a greater degree of education such as a Masters' or a Doctorate degree

online, more specifically on topics that involve software and entertainment development.

This essay will analyze these aforementioned factors, and will connect the information gathered through quantitative data as well as deductive reasoning, in order to prove that videogame development education through an online platform is an academic and economically viable way to become a professional in the videogame industry.

### **Historical Timeline and Predecessor Assessment**

On the topic of online education towards videogames, we must first analyze the historical relevance of distance learning and its advancements throughout the years, as the technology that allows institutions to educate beyond the limits of their physical spectrum has innovated both gradually and drastically in no small part due to the mediums that have allowed it within its history, and while it might be apparent just how much time has allowed this educational medium to grow and become more accessible to the general public, it must be analyzed carefully as there have been many relevant points of reference during the growth of distance learning as a whole.

As shown in the picture below, there have been many advancements in the technologies applied towards distance learning throughout history. It is important to note that distance learning is not a new subject matter or technology by itself, as it has been applied as early as the 18<sup>th</sup> century.

According to Kentnor (2015) "Isaac Pitman, recognized as the pioneer of distance education, began teaching shorthand by correspondence in 1840 in Bath, England", this is a clear demonstration of one of the earliest attempts at teaching regardless of the distance between a professor and their students. It tells us that this particular practice is not new to today's standards, however it was quite a new way of doing so by that time. This particular example would then set off the idea of

educating others by using any medium of communication available regardless of the distance between recipients and instructors.

# History of Distance Education

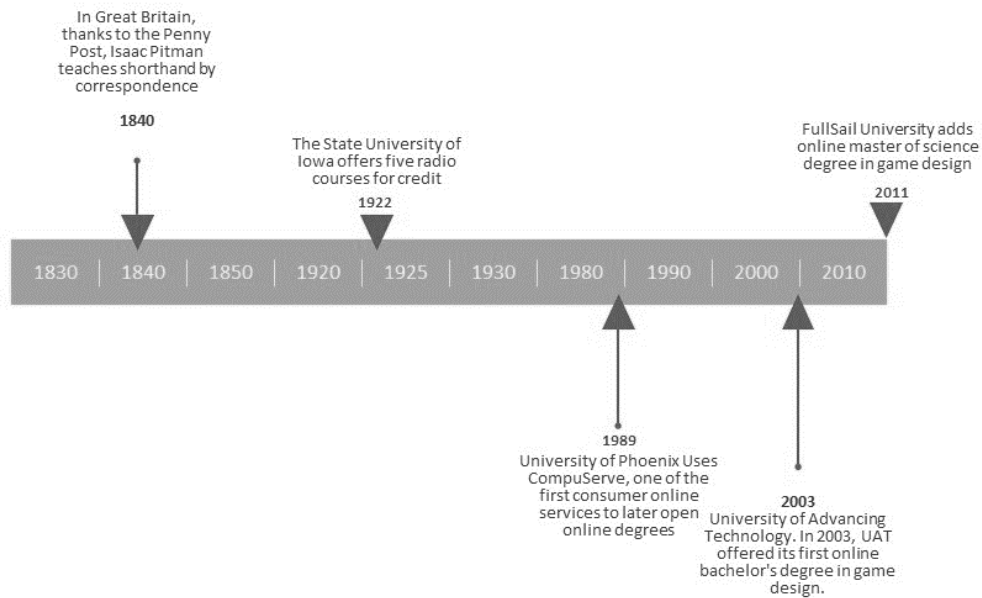


Figure 1. Historical Timeline of Game Development Distance Education Technologies. This figure showcases technological advancements in the topic of distance education, including the handling of video game development topics. Note: Own elaboration.

Another early highlight in terms of emergent technologies would be the use of radio as means of a distance education tool. By 1922, the University of Iowa has established five radio courses as college credit hours (Baker, n.d.). This shows us that even by the early 1900's there were attempts by national institutions to have an official academic application to emerging technologies such as radio, in order to approach students that may not be able to physically attend the institution, but still be able earn college credits.

By this time, we gather from this that society becomes more accepting of distance education as technologies become more approachable for both teachers

and students to establish relationships regardless of any physical barriers which may have stood between them in the past. As technology kept advancing throughout the decades of the 20<sup>th</sup> century, electronic devices and computers started to become much more available to the general public, and as such major academic institutions started to foray into using these technologies for their advantage.

As Kentnor (2015) mentions, “Online educational programs emerged in 1989, when the University of Phoenix began using CompuServe, one of the first consumer online services”. By the late 1980’s, computers became widely available and online services started to become viable sources of interaction between users. It was an inevitable event that institutions would adopt consumer online services in order to make a paradigm shift on how distance education would be imparted.

By the early 21<sup>st</sup> century, it started to become apparent that online education was a phenomenon that would only increase its reach through the years, starting to tackle careers that people wouldn’t have considered possible until then. By the year 2003, the University of Advancing Technology would offer its first online Bachelor’s degree in videogame design (The University of Advancing Technology, n.d.). This shows us that distance education technology has advanced to the point of increasing the availability of distance learning programs for multimedia disciplines like video game design, which would only become more academically viable for years to come.

After this, many other institutions followed suit and increased their curriculum of degree programs to ensure the advancement of online education of videogame development topics. By the year 2008, FullSail university introduced its first masters of science degree in video game design. (Orlando Business Journal, 2008)

As it can be inferred by looking and analyzing the many events occurring during this timeline, it’s interesting to note that distance learning itself has been a concept applied even before the appearance of computers. The technologies

introduced have only facilitated the application of this, ensuring that people have an opportunity to seek certified education even if they aren't close to the institution imparting these careers. This history shows us the importance of communication technologies like correspondence and radio, which served as means of getting to the same goal both students and teachers alike are seeking: to share knowledge on a subject matter regardless of time and distance.

### **Analysis of Impact**

When talking about the topic of online education as an emerging technology, it's not only important to understand its historical significance and technological advancement throughout the years, but also to discern and analyze the impact it has had in several different contexts. These contexts may vary in terms of significant impact; however, it is important to be able to see the changes this technology has brought, and to appreciate whether these changes have been negligible or critical to each contest.

### **Social**

In the social context, we must first understand that the acceptance of a concept such as distance education, no less online education does carry a stigma which gives the perception that it might be less valuable against traditional education, which is why its evolution was gradual throughout the years, as opposed to being a radical paradigm shift regarding education.

According to Morabito (1999) "many people are unaware of the long and distinguished history of distance education itself that is the root of current day Internet-based schooling." This has stayed true for most of the current decade, as it is a common mistake to assume that online education started as a direct evolution of regular education, but rather that there have been many other methods used in the past. This comes as a consequence of initial lack of acceptance and notoriety by the general public, which has gradually changed over the years as online education becomes more commonplace.

This applies as well in the context of videogame online education, as it is yet another consequence brought by the acceptance of distance education as a technology valid enough to warrant the handling of these topics. A particular proof of this would be the increase of universities including these kinds of degrees in the United States.

According to Valentine (2014) "Three hundred and ninety colleges, universities and other academic institutions across all 50 states now offer professional certificates, undergraduate and graduate degrees in the subject, an increase of 50% over 2009's total of 254." This means that as technological advancements become more common and accessible to people, more institutions become more confident in using these technologies to establish more multimedia-centric educational programs.

On the professional side however, employers are still skeptical regarding the amount of learning that can be obtained from online programs against traditional education, as it can be appreciated on Figure 2. This still stems from the gradual acceptance of the change that comes from new technologies as they advance throughout time.

## **Cultural**

Within the cultural spectrum, because of the accessible nature of distance education, we can see that this allows students from anywhere in the world to be able to enroll in any course they desire, as facilitated by the institutions providing these courses. As mentioned by Zhang & Kenny (2010) "In contrast to face-to-face instruction, online learning environments allow geographically dispersed students to enroll in courses; thus, online learners are more likely to be exposed to a greater variety of learning experiences, including those that reflect different cultural conditions and expectations." Because of this, it is to be expected that cultural differences arise in the context of both the teachers' and students' perceptions on their roles, and their perspective on distance education as a whole.

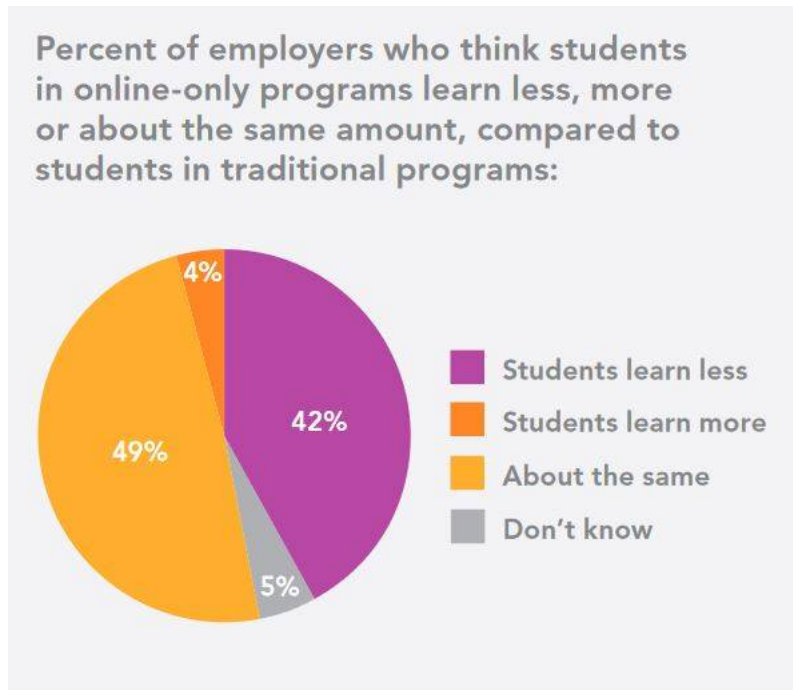


Figure 2 Percent of employers who think students learn less, more or about the same amount, compare to students in traditional programs. Note. Reprinted from *Not Yet Sold: What Employers and Community College Students Think about Online Education. A Taking Stock Report from Public Agenda.*, retrieved from <http://files.eric.ed.gov/fulltext/ED547410.pdf>

However, it's important to note that these potential differences do not act as deterrence for both teachers and students to engage on distance education regardless of cultural differences. Zhang & Kenny (2010) go on to add that "In this regard, it is becoming common practice in higher education for online distance education programs to enroll international and transnational students. These programs are often offered in a country other than where the awarding institution is located and involve students who have had different teaching and learning experiences and expectations." We can infer from this that institutions keep an open mind and welcome students of different cultures to try their hands at these programs, provided that these students come in with an open mind of their own by looking forward to these experiences.

In terms of cultural detractors, the biggest barrier that draws people away from this technology would be the language barrier. In the context of enrollment towards American schools, it is a requirement to have enough proficiency in the

English language in order to be able to successfully participate as a student (Zhang & Kenny, 2010). This can act as a barrier for most students who may be interested in a particular career, but may not be able to enroll because of their lack of language skills. One of the advantages of distance education technology is that even if these factors detract from potential aspirants, it does not mean that it is a permanent deterrent, as it can inspire students to improve themselves professionally regardless of cultural differences.

### **Political**

When talking about political impact, we must first think about the benefits seen by institutions as they opened the doors of distance learning throughout history. Because of the rising popularity of this technology, and the needs of students to enroll in programs if unable to attend a school physically, many foundations were made through history in order to support institutions in having a firm establishment over these formats.

One of these would be known as the Asynchronous Learning Networks, which was found in 1992 to offer grants to students and explore many alternatives in education for those who may be unable to attend a school physically. This foundation would offer funding to institutions that offered online programs in order to improve online education's quality (Kentnor, 2015).

### **Economic**

In the context of economic impact for this technology, according to Cowen & Tabarrok (2014) "30 percent of students already take at least one online or hybrid class. Furthermore, many students or potential students live abroad, work, or are raising children, and they appreciate the flexibility of online learning. Current levels of interest and experimentation, combined with the rapid growth of online portals to supplement Principles of Economics instruction, suggest online methods are likely to improve a great deal over the next generation of economics instruction." (p.519) This means that students are already very much having an



active participation in online education, even if doing so partially. What this means for the institution is that they are able to reduce the marginal cost of teaching while raising the fixed costs because a lot of the processes needed are automated thanks to online education’s technological advancements.

Industry	Number	Percentage
Video game – all	77	55.8%
Video game developer (large)	26	18.8%
Video game developer (small)	16	11.6%
Video game (serious/educational)	14	10.7%
Video game publisher (large)	9	06.5%
Video game (indie/art/experimental)	8	05.8%
Video game (other)	3	02.2%
Video game publisher (small)	1	00.7%
Education	37	26.8%
Software development	8	05.8%
Government, security or defense	3	02.2%
Technology hardware	3	02.2%
Web developer	2	01.4%
Research	2	01.4%
Retail	2	01.4%
Other <sup>4</sup>	4	02.8%

Table 1 Alumni employment by industry, in rank order by frequency. Note. Reprinted from Higher Education Video Game Alliance, retrieved from [http://higheredgames.org/wp-content/themes/hevga\\_theme/assets/HEVGA\\_6-15-15des2.pdf](http://higheredgames.org/wp-content/themes/hevga_theme/assets/HEVGA_6-15-15des2.pdf)

What this means for videogame development online education of course, is that there is an increase of interest which can be backed up by the fixed costs of these courses. Of course, this also results in a higher amount of potential industry professionals, as it can be appreciated in Table 1. This also inspires students to eventually not only become professionals on their field, but also make an entrance to academia as a potential teacher after graduation.

### Environmental

Because of the rather few physical resources required to maintain an online environment, there is an implicit environmental value behind this, as it means that there are less resources spent on preparing a physical academic environment,

such as logistical accommodation, expenses on space needed to accommodate students, as well as academic materials like physical books, paper, and so on.

This is because the material invested by institution instead focuses on creating all-in-one packages which may be primarily or exclusively digital. This is something that will only become the norm as time goes on for this technology (Cowen & Tabarrok, 2014 p. 521). This helps a lot of institutions in their self-sustain, as it helps them spend less in physical material, which also benefits the environment as means of decreasing production of materials which could be hazardous to the environment.

It is hard to deny that online education technology has had a very distinct impact over the different aspects mentioned previously. While some are more overt than others, we can gather from this that it is a consequence brought by changing the status quo of traditional education over the years, and that it has firmly established itself as a viable option for professionals to pursue. This applies particularly to those seeking education in multimedia careers like videogame development, where options are far less limited now thanks to this technology than it was in the past. This has a retroactive effect on distance education as a medium which is gradually becoming the norm across the world by giving more people a chance to choose the careers they want regardless of any physical limitations.

### **Ethical Implications**

In the context of education, ethical considerations will always be one of the biggest priorities to establish. This is something applicable regardless of the distance and establishment of an institution. Within this section this particular factor will be analyzed in order to see the ethical approaches taken within the particular medium of distance education, and how this entices students to choose this format above other kinds of education.

As mentioned previously, the method to establish an ethical frame for online education is generally similar to non-distance methods. This is because a lot of the

groundwork for creating an educational program requires a similar amount of effort for an institution to accomplish, in order to have a successful planning process.

According to Morabito (1997):

Educational administrators must use common sense when planning and operating an Internet-based educational program, whether it be a totally online school or just an online instructional division of an offline school. While the technology associated with being online and the mystique surrounding the Internet itself are powerful diversions, the administrator must focus on the reality of the school's purpose and logically handle both long-term planning and day-to-day operations in an economical way.

Based on this information, we can conclude that educational administrators apply the same thought process in both distance and non-distance learning formats in order to create educational programs. This can be interpreted as a deontological or nonconsequentialist action, because it means that there are rules that must be established regardless of the format in which an educational program is being presented. Educational institutions must organize and think logically in order to achieve the successful creation of a learning program, which means that even distance learning is not exempt of this principle.

This particular approach helps the technology become impartial but fair to students that may come from a non-distance background, which may already have a particular set of expectations for the kind of learning experience they will have with this technology. This also sets a precedence for the expectations of employers regarding the approach taken by online education.

As it can be seen in figure 3, this kind of ethical approach helps the argument that the rules established in online education programs are made to be intentionally similar to those in regular education so that educators, students and employers are able to have a positive or neutral perspective on online education.

It can also be argued that online education has utilitarian or consequentialist aspects to its creation, as while it does keep an overall identical

framework in terms of rules, it is made to accommodate those which are unable to attend a school on-site. This is demonstrated in quite a few studies where foreign students assure that distance learning is a lot less stressing when compared against a traditional learning environment, as it allows the student to focus on the educational material without the added pressure of social interaction and listening comprehension (Zhang & Kenny, 2010).

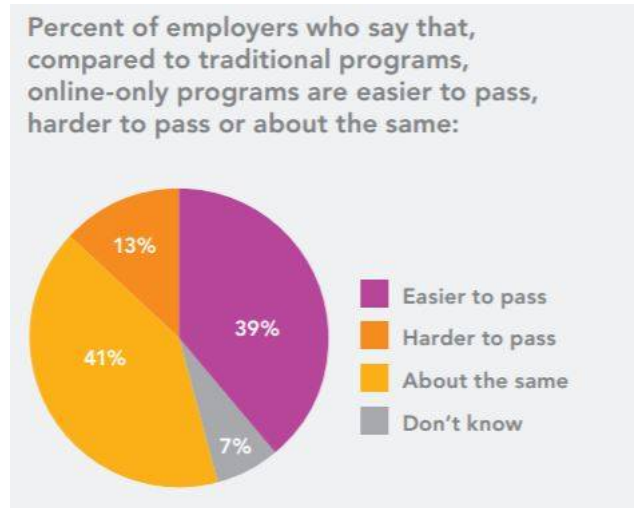


Figure 3 Percent of employers who say that, compared to traditional programs, online-only programs are easier to pass, harder to pass or about the same. Note. Reprinted from Not Yet Sold: What Employers and Community College Students Think about Online Education. A Taking Stock Report from Public Agenda., retrieved from <http://files.eric.ed.gov/fulltext/ED547410.pdf>

It's important to understand that, even if the format of education or the way educational material is presented to students is different, institutions value having an ethical system which is valid regardless of the distance or presentation applied so that outside perspectives, impressions and expectations can stay true to those already existing in traditional education so that they may focus on its advantages, which are highlighted as students from other cultures enroll in different programs and go through their own experiences. It's also critical to know that while these format's rules stay true to each other, this does not mean that institutions won't try to accommodate their students, so that they are able to work through the framework of rules established, and have an overall enjoyable experience to further the aforementioned positive perspective on online education.

## Results

Based on the research done, there is substantial data which shows the impact of online education towards the perspective of both students, institutions, and employers seeking potential candidates. A lot of this data shows a rather positive light by displaying the growing interest of institutions to expand their commercial and cultural horizons through the development of programs that are able to satisfy the needs of students which may otherwise not be able to enroll in similar courses on their countries. As technology advances, so does the acceptance of new platforms emerging in order to help students receive education regardless of their distance to an institution.

This also has a repercussion on the programs created, as it allows more institutions to create programs for multimedia topics like videogame development, which is able to not only generate a new generation of industry professionals resulting in the overall industry's growth, but also a new generation of potential teachers which will retroactively use these platforms to impart their knowledge to the world, giving growth to that industry's academia as a result.

For what the future entails, online education videogame development programs and courses of similar nature will only become exponentially more popular as the growth of the online education landscape allows it to. Given the technology's historical track record, this can only mean that this format will become the norm in many more countries around the world as long as institutions have interest in developing online education programs.

In the end, as long as there is interest for students to learn and yearn for more education, institutions will adapt to the needs of these students, and thanks to the advancement of these technologies, they will reach and accommodate to a wider degree of aspirants creating a larger and more culturally diverse academic community as a result.

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