Praxis of Design Education to the current Digital Culture Student

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Abstract

If "Design is shaped by the community and community shapes design" (DEFSA 2013 brief author), then how do we teach design to a culture that is engrossed within the ever-changing information age, what is the impact of this ethos on the current day designer and design?

Today's student is inclined to have an ethos that is different to students from as short as five years ago; post 2007, the year that social media started to be commonly used by South Africans, thus changing their ethos of design and continues to change as the digital information age develops.

This paper looks at a design class, on third year level, as the Design Culture described by the conference outlines; understanding the dualism at play on the design process and the class group as the community. It investigates the culture that does not hold onto information, but has access to information at the press of a button. This investigation aims to understand the nature of this constantly changing culture and the influences the information age has on the ethos of a design culture. It investigates how teaching has to adapt to serve this digital culture and how learning happens within it. The paper considers the changes to the praxis of design; process of design, the nature of creativity and the communication of design within this ethos, the challenges and potential for growth that the information ethos brings with it. It aims to contribute to the discourse surrounding praxis of design teaching to today's constantly changing, network driven design culture.

In conclusion this investigation considers the influence of the digital culture on design cultures and aims to act as a catalyst to design educators to enrich the understanding of the cultures they are involved with and aims to contribute to the praxis of teaching design to a continually changing culture on the fringes or outskirts of the educator's own culture.
Keywords*: Digital Culture, Praxis, Design Process.*

Introduction

Today's student is different to students from as short as five years ago; post 2007, the year that social media started to be commonly used by South Africans, thus changing their ethos of design and continues to change as the digital information age develops. It is also evident that a larger gap between students and educators are developing (Xiaoqing, Yuankun & Xiaofeng 2013)
The introduction of computers into society over the last thirty years has changed the world and our society irrevocably; Marc Prensky (2001) calls this a singularity – an event which changes things so fundamentally that there is absolutely no going back.

Prensky defines our students today as 'Digital Natives'; someone who speaks the digital language of computers, video games and the Internet. In general, some refer to Digital Natives as anyone who was born after 1980 (Herther 2009). On the other hand then, 'Digital Immigrants' is the term used to define digital users

who was born before 1980; someone who had to learn the digital language after their formative years (Prensky 2001).

This investigation considers the influence of the digital culture on design cultures and aims to act as a catalyst to design educators to enrich the understanding of the digital culture they are involved with. It aims to contribute to the current discourse surrounding the praxis of teaching design to a continually changing digital culture that is on the fringes or complete outskirts of the educator's own culture.

It looks at a design class, as a broad overview of all student year groups, as the Design Culture (described by the conference outlines), and at the design process as the product of design that is being influenced by the culture and vice versa.

The paper attempts to analyse possible changes to the praxis of design that can enable educators to be relevant in educating the current digital student. It considers the challenges and potential for growth that the digital age brings with it.

Methodology

Through literature reviews the different cultures; digital natives and digital immigrants have been studied, analysed and compared. General observations of first to fifth year students form part of the study and act as a validation of the literature reviews. Working towards a new praxis of design education investigations into the cognitive development of students and educators, the design process, the educational content and the design literacy of student and educator have been considered. In conclusion, an initial framework for the new praxis of design education has been formulated as the author's first attempt to understand the changes that needs to take place.

Design Culture

Today's student: Digital Native

By now the definition of the digital native has been established and a deeper look into their characteristics and their way of processing information follows.

Digital natives have learned to adapt to their environment in a different way, some better than others. They enjoy multi-tasking and parallel processing; they are used to receiving information at a fast rate with a high turnover rate. They prefer to randomly access information over a set path of access, graphics are preferred above text and networking is at their core, they thrive when instantly gratified and frequently rewarded. These students have grown up with constant digital connection to society and information whether it is through texting, social media chats, or the constant bombarding of flashing images of music videos on the television screen. (Prensky 2001)

Unfortunately some digital technology has had a negative influence on the digital native student. The large amounts of time spent watching television has impacted on student's cognitive development, educational achievement and has caused disrupted concentration spans. This is a result of the over stimulation through passive digital media such as television. (Bittman, Rutherford, Brown & Unsworth 2011). Although this has been the result with passive digital media the contrary has been proven for interactive digital media. Research into interactive media, such as computer and television games, shows that students are able to concentrate for long periods of time. It seems that students have short attention spans for the old ways of learning; they

thrive on interactivity and receiving feedback immediately after an action. This should further more prove to the educator that the teaching praxis needs adjustment. (Prensky 2001)

Although, multi-tasking, random-access to information, parallel processing and graphic awareness has improved in the brain processes of the digital native; reflection time has shortened or is even absent in the digital native's thought pattern. This can be due to the fast pace nature of their digital world and therefore not leaving time for reflection. This is a seriously needed part of any thought or design process and educator should be aware of this to be able to include debriefing times as part of the feedback process of design education (Xiaoqing, Yuankun & Xiaofeng 2013).

On the topic of content and the measure of competence and comprehension of the content that the digital native student has we can refer to two terms: 'future content' that relates to digital content and any content that might still be developed in the future, and 'legacy content' which refers to content that is in traditional format, i.e. print format (Prensky 2001). Digital natives score high in the competence of understanding and using future content, but are slow in processing legacy content (Li & Ranieri 2010). My observation is that students don't hold onto information like what they did in the past; it is more important to them to learn how to search out good information than it is to store all the information in their brain's memory. If I have to compare students to technology they are not hard-drives anymore but rather search engines.

The students' constant attachment to social media has caused tremendous peer pressure which is inflicted on them by themselves; by constantly publishing their own lives the current digital student exerts pressure on its community as well as being subdued by the pressure of constantly being in the limelight of the opinions of its peers. The outcome can be that students do not have a high self-esteem without being affirmed by their peers and lecturers. This might result in a 'needy' student that has to ask questions all the time and battle to make decisions by themselves (Xiaoqing, Yuankun & Xiaofeng 2013).

My observation is that digital native students still have most of the positive characteristics of pre-1980 born students; they are inquisitive, eager to learn, can work for long hours and keep their attention on something that is relevant to them. I believe that they are bombarded with information and have very little reflection time that they do not know how to validate the quality of the information. I believe that if we understand these characteristics of the digital native student we can adjust our teaching to accommodate for their needs and the outcome can be remarkable. We also need to understand where digital immigrants come from in order to understand the gaps in communication.

Today's lecturer: Digital Immigrants

Although it has been generalized that the digital immigrant is someone who was born pre-1980, that is only a major generalization and a lot of people born before that date has been able to adapt and learn the digital language. Although a fairly high competency level can be reached, this will always remain like a second language to this group.

Digital immigrants that have not developed a competency with this digital language will often have ideas such as turning to the Internet as a second source for reference, or printing out an email to file it. Digital immigrants don't easily understand the new-found skills of digital natives because they were taught in a slow, step-by-step manner (Prensky 2001). Digital immigrants battle to understand that learning can be fun, and that learning can happen while doing something else; for instance listening to music or having the television on in the background (Xiaoqing, Yuankun & Xiaofeng 2013).

Digital Immigrants do not score high on the scales of future content, but they score high on the scale for legacy content (Li & Ranieri 2010). This is understandable as they were taught using printed materials.

All these factors contribute to the divide between digital natives and digital immigrants. Educators that form part of the digital immigrants are constantly confronted with this divide and my observation is that they resort to the conclusion that students are 'different than they used to be' and 'students just cannot learn' certain things. This can come across very as a negative opinion on the current day student, and can be transferred to the student unknowingly.

One of the largest problems that this digital divide has brought into education is the compatibility of communication between digital natives and digital immigrants. This resulted in a discourse that has been going on since the early 2000's on how the education praxis can be changes. Some ideas have been formulated, but I am of the opinion that this new idea of teaching is still only at its infancy years and that we, as educators, still have a lot of rethinking to do in this matter.

Towards a new praxis of design education

Setting out on this journey towards a new praxis of design teaching is a challenging task. The design process, educational content, digital literacy are all areas of concern in this journey, not to mention whether it is physically possible for digital immigrant's brains to adapt to a new thought process at their developed stage of their lives. Although these challenges exist, it holds a lot of potential to unlock a new world of understanding between digital native and immigrant, if the challenges can be overcome.

Marc Prensky has a very specific solution to this problem of how we need to be changing our teaching approaches; he develops computer games, that speaks directly to the students understanding and style of learning and he works the content of the game so that the student can learn so same information but through this platform. He claims that a student is able to memorize 101 Pokémon character's names, attributes and abilities, why should a student not be able to memorize historic events and other facts in this same manner. (Prensky 2001)

Prensky suggests that the students become part of the redesigning process of this new methodology of teaching and that they hold the clues to what their needs are to be able to adapt and keep adapting in the world that is rapidly and perpetually changing. (Prensky 2001)

Prensky's specific praxis of education is not necessary the solution to the design education setting. Through understanding cultures of the digital native and –immigrant, and through research into the challenges mentioned above I will contribute to the discourse surrounding the journey towards a new praxis for the design education.

Cognitive development

There are two questions that come to mind when thinking about the physical requirements of digital literacy and learning a new skill at an older age: Is there a difference between the digital native and the digital immigrant's brain, and can digital immigrants train their brains to develop digital literacy?

Nancy Herther (2009) has investigated these questions in her paper; Digital Natives and Immigrants – what brain research tells us. Her interview with psychologist Gary Marcus answers the first question very simply: "I seriously doubt that there is any significant difference in the genetic makeup of people born before and after 1980, but experiences can indeed radically alter our cognitive capabilities – that's why we send people to

school!" (Herther 2009). The second question is answered through neuroscientific terms neuroplasticity and malleability. Recent brain research has shown that the brain is constantly restructuring itself in order to facilitate new though processes, this is known as neuroplasticity (Prensky 2001). Research has also shown that our brains are malleable to grow and change if stimulated, that leaning happens with difficulty and that that process actually shapes the brain (Prensky 2001).

This indicates that any person can learn digital literacy at any age, experience at a younger age is advantageous, but not a prerequisite. With the development of user-friendly digital technologies and online services it is much easier today to equip digital immigrants to interact with digital interfaces and become more digitally literate (O'Brien & Scharber 2010)

Design process

Educators can introduce the students to the principle of problem solving and decision making and where educators can enable them to rank all the design problems related to the over-arching problem in order of importance that will enable them to find their own way of designing. Thereby boosting their design confidence and have a graduate that can walk out of university that understands a problem and have the first few tools to know how to tackle the problems they will encounter, as well as a student that is able to analyze new problems that have not yet surfaced in the world as we know it today. The usage of digital technologies in the classroom has enhanced collaborative learning in student groups. (Trespalacios, Chamberlin & Gallagher 2011)

I have encountered that if some current models relating to process of design are enforced on these students that it slows them down tremendously. That supports the theories of Prensky's characteristics relating to digital natives being slowed down when you 'tell' them instead of showing them a way (or a principle).

Educational Content

Prensky claims that both methodology and content needs to be rethought and redesigned, and that content needs to be split into two categories: 'legacy' and 'future'. Legacy refers to content relating to reading, writing and understanding writings of the past, while future content refers to everything relating to digital technology but also social, ethical and political content to prepare the student for a world that is constantly changing in these aspects.
Carneiro and Draxler supports the inclution of legacy content to form an integral part of any education programme as their research shows that having a sense of history, humility and wisdom founded through the knowledge of past events builds national pride and peace (Carneiro & Draxler 2008).

It is important to teach both legacy and future content, but the ratio of amount of each of these has to change. Educators have to change the way they communicate to students, not changing what is important, but only the style in which this important information is conveyed. (Prensky 2001)

Digital literacy

Through studying and analysing these two groups, the digital native and the digital immigrant, it can be summarized that there are two major scales of measurement; the scale of digital literacy (future content) and the scale of print literacy (legacy content). The digital native measures highly competent on the digital literacy and fairly low on the print literacy, and the complete opposite is true of the digital immigrant, measuring high on the print literacy and low on the digital literacy.

The challenge then lies therein to stimulate print literacy in the group of digital natives and to find a way to stimulate digital literacy in digital immigrants. The question then is whether this divide is possible to cross and if our brains can learn new ways of thinking at these two specific age groups life stages.

Self-efficacy and personal innovativeness with technology forms the basis of digital literacy, and is defined as one's belief in your own capability to perform a specific action; it influences decisions, behaviours and one's emotional response to a specific task (Xiaoqing, Yuankun & Xiaofeng 2013). Educators cannot assume that all students are digital literate or self-efficient with digital media (Watson & Pecchioni 2011). This causes a fundamental problem, especially in a developing country such as South Africa. Some time has to be spent training students in digital literacy as a foundation before specific design training with digital media can begin.

Towards a new praxis of design education

Although critical thinking is already highly encouraged in design fields, this aspect of teaching can be revisited and a fresh look at how students are encouraged to look at preceding works to learn the lessons from the past can cast new ideas into how critical thinking needs to prepare the student for a world that they will work in that has not immerged yet.

Digital means can be implemented to asses learning; examples might be to assess learning through writing a paper on a blog and asking students to interact with each other and the lecture by commenting on the main post as well as each other's comments.

My initial observation and reaction was that students should not be bombarded with knowledge, but the amount of information that is taught should be limited to the minimum design criteria. But through this study that has been proven to be a half-truth.

More time should be spent on inspiring the student to think critically, understanding how to validate first-, second- and third- hand knowledge and learn how to take ownership of situations.

With all the information available students have to learn how to be a good 'search engine' that can select the relevant information rather than a 'hard drive' that can store information to recollect it when necessary. Students need to have the basic knowledge that will enable them to search out the relevant information and apply it, rather than knowing everything.

Conclusion

The question remains that if "Design is shaped by the community and community shapes design" (DEFSA 2013 brief author), then how do we teach design to a culture that is engrossed within the ever-changing information age, what is the impact of this ethos on the current day designer and design?

It is undoubtedly necessary for the education praxis to be transformed to speak to the digital culture student. The culture has an influence on the design process and therefore the praxis of education should have a different influence on the design culture that what it had in the past. The challenge set before the educator is to be able to understand this culture and to work within the means of it.

Most design courses comprise some theory modules and one or a few major design modules; these need to be addressed slightly differently in their praxis of design. Therefor the framework towards a new praxis of design education, that forms the conclusion of this paper, addresses these separately:

Theory coursework

- Theory lessons should be fast-pace and cove a large quantity of information in each session.
- During the lesson reference to a variety of sources should be made that is not dealt with in detail in class – this will encourage students to research it for themselves outside of class time.
- Assignments should be set, not only to cover the limited set of notes or chapters in textbooks that were discussed in class, but also test their researching capabilities to find and validate other relevant information.
- Introduce Internet research into assessment and class exercises.
- The main focus of theory lessons should shift from being information focused to being principle-focused.
- Opportunities should be created where students can provide educators with relevant feedback to inform educators on the way students need to be taught.

Studio work

- Teach the principles to enable a student to help him/herself.
- Keep on stimulating creativity
- Keep on stimulating critical thinking and broaden the students' concepts in order for them to solve design problems that they will have in the world that has not currently surfaced yet.
- Stimulate interactivity in the class and with the educator.
- Give time for students to reflect on their work and learn from each project's feedback the lessons necessary.
- Create ways to give immediate feedback to individuals and the class group.
- Emphasizing of class exercises can provide the platform for immediate feedback to stimulate students and to encourage further self-study outside of the class room.

As mentioned before, this framework is a first attempt to grapple with the idea of new design education praxis. It tries to simplify the complex matter of the digital native student and how educators can adjust minor things to change their communication to this group dramatically.

If today's educator cannot adjust to these new concepts of leveraging information, he/she can stifle the students' learning process and can battle to keep their attention focused on the learning process. The difficult part for the educator is to learn new skills after a long time of a specific teaching praxis. The educator needs to let the design student shape their own community, but still facilitate learning within these new boundaries. Perhaps part of our role as educator facilitators is to structure a framework to enable students to teach themselves.

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