

## **EVOLVING PARADIGMS: METHODS OF DELIVERY AND TEACHING PHILOSOPHIES FOR A DIGITAL AGE**

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### **ABSTRACT**

*Education and the way it is delivered is undergoing profound change. The advent of digital technologies and their increasingly ubiquitous nature has not only educators, but students and administrators alike, on the shifting sands of paradigms in transition. In addition to this, there is a certain amount of conjecture about what is actually happening on the ground. This paper presents research that originates in the practice of sixteen digital technology "champions", all lecturers in the higher education management classroom. The main objective of the research was to explore the impact of technology on teaching practice.*

*Qualitative inquiry, through the use of semi-structured interviews (n=16), provided the methodology for the study. The findings presented in this paper identify issues of major importance to the participants and relate them to the learner-centred paradigm of education. Directions for future paradigm change are discussed and suggestions made for the successful adoption of technology-enhanced learning within this framework.*

### **BACKGROUND**

This research takes an in-depth look at the practices specific to a small group of technology-enhanced learning advocates and how their practice has evolved over the years. A recent OECD report on education (2015) highlights the uncertainty that

digital technologies are engendering and suggests that educational institutes of all levels are far from ready to move ahead with the successful integration of such technologies in the classroom. In order to identify ways to move ahead, a sample (n=16) of educators having made technology-related changes in their course delivery were invited to talk about what they had done and why. These narratives, after initial analysis, were further examined through the lens of the learner-centred paradigm of education. Much of current educational practice is, often implicitly, based on constructivist or socio-constructivist theories of education. One wonders, however, whether these paradigms are sufficient in a digital world. Conole and Alevizou (2010) provide a comprehensive review of learning theories and pedagogy in light of the use of technology and Web 2.0 before putting forth examples of new paradigms of learning that might be developing.

The focus of this paper is how digital technology is impacting classroom practice and philosophies of education. Such a study is important to provide a voice for educators embracing this paradigm change and to elucidate the links between teaching as we've always understood it and where it may be heading today. With this in mind, the central research goal here was to examine the impact of such technologies on the classroom, methods of teaching and the educational philosophies of a selected group of educators defined as "champions" meaning advocates of technology-enhanced learning. This paper discusses changes identified in the research and looks at implications for future practice.

## **LITERATURE REVIEW**

The talk of a paradigm shift in education has been going on now for well over two decades. What started with the role of the educator being called into question with Allison King's (1993) "sage on the stage, guide on the side" article, paved the way for others to look at what could be considered as simply a change in teacher behaviour to be something far more wide-reaching. It was not long before the whole question of the educational paradigm slowly came under increasing scrutiny (Saulnier, 2008). In North America the question of changing paradigms in education have been part of the academic literature starting with Barr and Tagg's (1995) publication in the United States and shortly thereafter Langevin and Villeneuve's (1997) publication in French-speaking Canada and thereafter followed by an increasing number of voices. This marked a turning point in the higher education debate. As the question of how to rise to the challenge of educating college students in the 21<sup>st</sup> century and preparing them for their careers was increasingly being asked, the traditional models of education were increasingly being called into question. The debate was not restricted to North America, on the other side of the Atlantic similar questions were being asked and articles relating to changing paradigms in education began to appear in the scientific literature across Europe.

Coming back to the United States, however, the idea of a new paradigm for education

was first examined through a variety of lenses (Smith & Waller, 1997) before settling on paradigms which, for the most part, can be classified as learner-centred (Conole & Alevizou, 2010). A move from a teacher-centred or instructional paradigm past a content-based paradigm and on to a learner-centred paradigm is clearly underway. Although the learner-centred paradigm of education has gained wide acceptance, the advent of Web 2.0, the Internet and the digital technologies currently available, both in and out of the higher education classroom, adds yet another level of complexity to the issue.

Education is complex and the theories of education that stood us in our stead through the industrial revolution do not seem to be fully in tune with the world today. Some (Jörg, Davis, & Nickmans, 2007) see this as a crisis for education going so far as to say that the first step should be “to recognize that an adequate theory of learning and education should take the complexity of reality into account” (p. 145). A complexity that, at least in part, is related to the technological changes that we are witnessing, their impact on education and on the role of the educator. A complexity that opens up a world full of new possibilities and new challenges. “Perhaps the greatest challenge with implementing the learner-centered paradigm of education and training is the difficulty that instructional theorists, researchers, educational policymakers and practitioners face in transcending Industrial-Age mental models or mindsets about instruction in both education and training contexts” (Reigeluth, Beatty, & Myers, 2017, p. XIV).

Another way in which these changes are impacting what is happening in education is that the competencies that are being taught are taking on increasing importance over the content. Indeed, a recent publication by the World Economic Forum (WEF) (Thomson, 2016) highlights the fact that we are educating students for a tomorrow that is largely unknown and for jobs that do not yet exist saying that “35% of the skills necessary to thrive in a job today will be different five years from now”. What is essential is that today’s students leave their institutes of higher education with 21<sup>st</sup> century competencies. In the same WEF report, a survey of some 900 companies supported the idea that the skills most relevant for the future are soft skills and include the following competencies: teamwork, knowledge of digital tools, an understanding of rules and regulations, responsibility, and, commitment (Thomson, 2016). Yet if today’s educators do not see that their use of technology in the classroom and its inclusion in course design and delivery for the promotion of digital literacy is becoming a necessity then students are unlikely to grasp the importance of such competencies for their future careers (Johnson, Adams Becker, Estrada, & Freeman, 2014; Lemoine & Richardson, 2013).

Finally, the combination of a broad palette of digital tools for instruction, changes in the learning environment (Wi-Fi access, laptops, and mobile devices the norm, etc...), and evolving student expectations (Johnson et al., 2014; Sharples et al., 2013) can only lead to a change in role for the educator (Ertmer, Ottenbreit-Leftwich,

Sadik, Sendurur, & Sendurur, 2012). The question here is to find out how far up the learning curve educators really are. Only a few years ago an OECD report (2015) bemoaned the fact that the potential of technology for education was simply not being leveraged. This research looks at what is happening on the ground to see how true this is.

In order to explore the impact of technology on teaching practice, the research themes identified were:

1. What constitutes a technology-enhanced approach to classroom management.
2. The impact of digital technologies on method(s) of instruction.
3. Whether the educator's underlying educational philosophy had changed or evolved due to these technologies.

## **METHODOLOGY**

The research design followed the qualitative tradition of narrative research (Creswell, 1994). The four dimensions concerned are shown below

Focus: Exploration of how an individual has reacted to the advent of digital technology with respect to his/her teaching practice

Data collection: Primary interviews, course reference sheets, project outlines

Data analysis: Full transcription followed by coding and clustering

Narrative form: Personal experience

The research presented here took place at three management schools within a Swiss University of Applied Sciences with lecturers seen as “discipline champions” (n=16) for the use of technology enhanced learning. The sample comprised 6 male and 10 female faculty members with between 2 and 22 years of teaching experience and between 29 and 53 years of age. All of the participants were teaching on bachelor level management degree courses and with class sizes of between 18 and 60 and having an average of 30-35 students per class.

Semi-directed interviews lasting between 30 and 45 minutes were fully transcribed prior to coding. A first reading allowed for an initial classification as per the three research themes. Further analysis followed the traditional pattern of coding, starting with a within-case role-ordered matrix and the identification of frequently used words and expressions followed by the clustering of words using the dendogram method (Miles & Huberman, 1994). This allowed for within-theme clusters to be progressively reduced resulting in relatively few but well documented clusters per theme.

## **FINDINGS**

In terms of the educators' practice and, in line with the three main themes several clusters were identified. A brief summary by theme is presented below followed by a selection of exemplars taken directly from the interviews.

### **Theme 1: Technology enhanced approach to classroom management**

According to the participants, the use of technology leads to a classroom that is more motivating and dynamic; efficient and practical; and allows for more diversity and participation than does the traditional classroom. For a few of the participants, the use of technology was seen to add value in terms of future career options for the students as they become digitally literate in a professional sense. The participants were also aware of their somewhat reductionist use of technology and despite being confirmed users, a need for additional guidance and support in order to better use technology in course delivery was expressed.

### **Theme 2: Methods of instruction / course delivery**

Participants were quite unanimous in saying that technology had impacted the amount and manner in which they included theory in their course delivery. In line with the learner-centred paradigm previously mentioned, a number of participants were focussed on the students' use of technology for the development of work-related competencies. Other clusters identified included student-centric type of instruction; with increased interactivity and a much more diversified delivery than in the traditional classroom. Technology was also seen as a good tool to integrate in formative assessment.

### **Theme 3: Evolution of educational philosophy**

Finally, the participants spoke of what their personal philosophies of education were and whether technology was having them re-examine or revise their positions. Here too, and in line with what was previously mentioned about the changing role of the educator from teacher to coach the majority of those interviewed confirmed a change in what they felt their role was. Additionally, the participants felt a need to implicate students more in the learning process and create, what more than one participant categorized as, "passionate students". They also saw their role as one of adding-value to the learning experience by being there to put things into context. The issue of reflection and constant review of practice came across as increasingly important in today's classroom.

As interesting as the above findings are, they cannot replace actual words. Therefore, and in order to give a voice to the research participants, a selection of

exemplars is presented below by theme.

### **Interview exemplars: a technology-enhanced approach to classroom management allows for:**

*The main takeaway is varying the activities. That was THE thing I discovered using technology [...]to make the learning dynamic so they [the students] don't feel bored, tired. Prof. #4*

*I think these technologies can help in the sense that they can activate the audience, and another point which is important is diversification. Technologies are an instrument which you can use to diversify. Prof. #5*

*Students are on board, much more on board. I think that it is much more useful if we can use technology and it's a really good way to diversify, in class, the activities. Prof. #2*

*There are many possibilities but at the end of the day it is difficult to put things into place. One has the impression that all the information is available but students are often drowned in information and we have to teach them how to use the tools that are at their disposition. Everyone says that this generation was born with internet and all but they don't know how to use all this technology to learn and we have to teach them. Prof. #8*

### **Interview exemplars: impact on methods of instruction/course delivery**

The second theme that was explored in the interviews concerned the integration of instructional technology in teaching practice and the impact that it had on the way courses were being delivered. Exemplars that clearly show the kind of impact experienced are shown below:

*I make the students do a lot more, my slides are mostly images and I tell a lot of "stories". The students have to find the information, fill in blanks and through the use of the simulation and their interaction they learn on their own. It is through my feedback that I am able to include the theoretical elements that were previously presented in class. Prof. #13*

*We have to use it in [technology] in our teaching because these are the tools that the students will have to use in their professional lives once they leave us. Prof. #7*

*So, for me using different technologies is basically trying to switch the mode of delivery. I try to pep up my lecture so that I stop talking every*

*15 minutes. Either I show them [the students] a video or I give them a task. I found out that students nowadays really need that change of pace.* Prof. #1

*I think my classes are more motivating than before. Technology gives me more liberty to change things, I can insert images at the last minute, add a video etc... and make my classes come alive.* Prof. #10

*I have much less theory than before and a lot more interaction with the students. For example, they love using the online questionnaires at the end of a chapter for in-class feedback, watching the percentages, the different responses and all and I see whether they have understood and they too see whether they have understood and we can discuss problem areas.* Prof. #16

### **Interview exemplars: changing teaching philosophy**

The final cluster identified in the findings was related to teaching philosophy and the manner in which the participants saw teaching and learning.

*If a course goes well it is not only there is a very good professor but also that there are students willing to respond, willing to listen and who in fact contribute to the course.* Prof. #5

*When I started [to teach] I felt like I needed to show them [the students] how to get there, it was like demonstrations most of the time. Today I am there to facilitate the learning process, me being there is because I can always put into context what we are doing, give further examples, make links and facilitate the learning process; facilitate the exchange between students. That's mainly my role today: it's not to demonstrate it is to facilitate.* Prof. #4

*It's not really technology but it's like the ease of access to information. I hope students will become lifelong learners. At the end of the day that's the most important thing but we don't know yet we just have to try.* Prof. #3

*Technology has allowed me to change my teaching style and teaching objectives, the material I teach, how I teach, what I teach, everything. Today my students have to gain something positive from me, some kind of impact that my teaching gives them in the broader scope of career and life.* Prof. #6

*I have another role...I used to decide what was important and what wasn't,*

*now with internet and the tools available the students they can also decide what's important and participate more, it's not just me, I am more a coach than a professor. Prof. #7*

The above clearly shows a move towards a new role for the educator moving from the *stage* to the *side*. Admittedly, the participants in the study were amongst change makers and, thus, were certainly more inclined to move out of the teaching zones of comfort, however, these findings suggest that the paradigm shift mentioned previously with relation to the new role of the educator is indeed taking hold – be it slowly.

## **DISCUSSION**

The results presented here are limited in that they are specific to one institute and come from a small sample yet educators, administrators, instructional designers alike can all refer to this study. Educational practice will only move forward through a concerted effort on the part of all stakeholders. Unfortunately, there seems to be a gap between what the different parties want and change will not come about this way. Administrators who feel that providing resources is sufficient are not providing the scaffolding and support necessary for educators as they move up rather steep learning curves. Instructional designers who come up with new pedagogical scenarios need to have these tested in the classroom and need to understand the needs of both the educators and the students and not fall back too much on new and exciting technologies than might not provide any added value. Educators need to use their voice to say what their needs are and, finally students too are stakeholders whose voices need to be heard. Educators in today's higher education classroom are now faced with a population of students frequently classified as “digital natives”. It behoves educators to listen to the preoccupations of their students, become familiar with the mediums that they are used to using and, understand the manner in which they frequently interact with the world around them. This does not, however, imply that technology should be seen as a means to “edutain” or just diversify but rather that it is all important to see how best to incorporate such technologies into course delivery so as to add value and increase student professional competencies.

The learner-centred paradigm certainly seems more adapted to the direction that education is taking today. The participants in this research, although without specific reference to, were clearly putting their students in a more central position. This suggests that there is an implicit move towards this sort of paradigm change. Yet for the implicit to take hold and become anchored in practice clear and explicit encouragement and involvement on the part of the institutions concerned is necessary.

## **CONCLUSION**



The main conclusions are that educational practice is indeed changing and in such a manner so as to blur the boundaries between the theories of education that have stood us in good stead for so many years. It may be time to look at learning in new or other ways such as:

1. student-centric
2. competency development
3. adding value to the learning experience

Finally, in order for any paradigm shift to become reality, full support on the part of educational institutions is a requirement. It is not enough to provide resources and expect the educators to invest in their implementation nor to assume that students know how to use such resources for learning.

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