Focusing on "generation Y" students' expectations:

a new way of conceiving an e-learning strategy

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Abstract: This paper presents how the University of Applied Sciences Western Switzerland (HES-SO) builds its blended learning strategy. Divided into two phases, the first as top down, from board of education to professors, and the second as a bottom-up approach, from students to board of education, the HES-SO e-learning strategy intends to include digital native students' expectations, needs and requests to implement tools, instruments and new learning approaches. To illustrate the strategy, this paper presents the result of a survey carried out during May-June 2013 and depicts the new student who enrolls into higher education institutions.

Keywords: e-learning policy, survey, generation Y, e-learning strategy.

Context

More than 18000 students enroll every year in the different curricula proposed by the University of Applied Sciences Western Switzerland (HES-SO). This university offers students strong links with the real professional environment, either via very concrete courses (laboratory work, experiments, etc.) or by helping with developing projects ordered by professionals in action.

Globally, courses are provided by lecturers in frontal learning situations, but this University enriches its pedagogical concept by including blended learning to the curriculum. Right now, more than 1300 courses are available on line, published through the Moodle platform (http://cyberlearn.hes-so.ch). Most courses use the LMS as a simple repository, but increasingly tend to include multimedia implementations to offer students more possibilities.

To sustain the expansion of e-learning in HES-SO, the e-learning Centre Cyberlearn was created in 2004. This Centre offers now various services, ranging from LMS Moodle administration to specific resource development or on line course certification.

HES-SO e-learning strategy has undergone three phases:

1. Top-down phase (2004-2007)

During this phase, the board of education has established structure and funding to deploy a blended learning framework within the HES-SO. The main objective aimed at enriching the face-to-face course by adding an online course where professors could provide rich learning content for the students to access. Most of the Center's efforts have been affected to the deployment of the LM Moodle and information to professors. In 2005, 16 online courses became available, to reach 650 courses by 2007.

2. First Phase bottom-up (2008-2011)

At the end of this phase, Cyberlearn consulted with professors to understand what they need the Center to implement. At that time, Moodle was massively used as a mere native documents handling (PowerPoint presentations, .pdf documents, etc.). Concurrently, Cyberlearn had developed a quantitative survey oriented on students 'opinions, concerning e-learning at the HES-SO. The results showed that 72% of them were satisfied and 88% whished more interactivity for their courses.

Thus, we first fostered teachers' efforts by developing a range of interactive quizzes. Subsequently, with fully grown technical possibilities, together with the advent of simple to produce and to carry out multimedia resources, Cyberlearn decided, hand-in-hand with professors to produce small multimedia elements,

such as videos, podcasts or interactive flash type animations and simulations. These resources, far from being mere playful toys, illustrate a technical point, materialize abstract knowledge or allow students to integrate theoretical notions, applying them to situations close to reality. We call these resources: Micro multimedia object (MMO). They are usually produced as a contribution to solving or illustrating a micro specific learning issue; they are simple to manipulate, enhance and sustain interactions between student and resource.

Between 2008 and 2011, Cyberlearn developed 50 MMOs (http://cyberlearn.hes-so.ch), each addressing an average of 120 students.

Cyberlearn developed two new types of resources: a mobile application (m-drill on Appstore and Google play) dedicated to foreign language learning, and a serious game oriented on problem solving and decision taking in real contexts. At this stage, Cyberlearn decided, before continuing on the same track, to get a clear orientation and validation from the students themselves, instead of empirically deciding about the follow-up of the next implementations.

3. Second Phase bottom-up (2012- to date)

By the beginning of 2013, 20'000 accounts had been created on Moodle HES-SO and more than 3500 online courses are currently being proposed to students, from bachelor to master, or continuing education. Many teachers are affected by the change of mentality and behavior that students show during the class. Short attention spans, multitasking, growing importance of social media and use of smartphones during class are some features, which impact the art of teaching. Furthermore, students tend to consider professors more like partners and expect a more horizontal relationship than ever before.
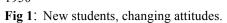
Cyberlearn then launched a new survey to gather digital native students' expectations in order to guide its future developments. This represents a real change of direction in higher education. Rather than designing courses based on teachers' empirical impressions about their students' expectations, preference is given to working on the students' specific requests.

New student profiles, new teaching models

The new, modern student is no longer content with passively listening to lectures. His ability to concentrate has decreased, while the use of communication devices, such as mobiles, tablets or laptops, has increased. Besides, this new student wants to participate and be active; in the same way he is accustomed to interact using social media.

He is eager to experience different forms of interactivity. Quizzes, forums, group projects. Offering him micro multimedia objects related to well-delimited knowledge elements, increases his commitment, his level of interest and, above all, his capacity to make connections with the practical world, as well as to transfer knowledge in the real work environment. This paper presents a micro multimedia objects experiment and offers a grid to help with their implementation.

1950   2012

Fig 1: New students, changing attitudes.

The teaching model mostly used in universities is based on oral transmission, inspired by the Peripatetic school founded by Aristotle.1 The entire knowledge is in the hands of the Professor.

In our modern world, he can supplement his teaching with an array of physical tools (blackboard, retro-projector, video-projector) and computing tools (PowerPoint or Prezi presentations, etc.). The audience, crammed in over-crowed lecture halls, listens and the only interaction with knowledge consists in note-taking and practical projects, miles away from ex cathedra lectures.

Compared with older times when, as a disciple worshipping a Master, the student would be listening silently to one of the highest authority in the making of knowledge, the 2013 student profile has, indeed, evolved towards one whose expectations and requirements are new.

Family educational methods based on dialog, integration in a more horizontal society, the impact of mobile technologies, immediate access to a plethora of knowledge available on the Internet, current society's requirements (people capable of taking decisions, thinking ahead, ranking and cross-checking data), have all contributed to shaping up a new student. Whether we use the term Student 2.0, the Now Generation2, Generation Y, the famous «theorized digital natives" so-called by Prenzki, every professor will immediately pinpoint the idiosyncrasies. For such students, the act of thinking has become more important than knowledge itself, beliefs take the upper-hand on facts, the attention span has decreased dramatically, collaboration during the learning process reaches out world-wide, authority has no genuine hold on them.

These characteristics are commonly attributed to the Y generation:

- ✓ Use technology as a natural part of their lives,
- ✓ Hedonist,
- ✓ Live in present,
- ✓ Need various activities,
- ✓ Short attention span,
- ✓ Preponderance of visual (video, picture, etc.),
- ✓ Zapper, gamer,
- ✓ Cooperation work,
- ✓ Communication and peer exchanges are center of their lives,
- ✓ Pragmatic,
- ✓ Need meaning and pleasure in work,
- ✓ Need to be valorized through constructive feedbacks,
- ✓ Co-expert and content producer.

This description will become gradually more and more accurate and concrete, as the following generation grows up and enrolls into higher education. By no means, is it intended to design a new educational concept based only on this description. We wish to match students' expectancies with everything technology, didactics and pedagogy can offer to sustain the learning process.

In order to reach the training objectives set by the curriculum and fulfill the professional world requirements of the future graduates, while taking into consideration the characteristics of these new students, it is essential to change the old teaching and lecturing habits.

A possible orientation would consist in offering students a wider variety of interactive learning resources, such as simulation and serious game playing. The survey results will be used to orientate Cyberlearn's working approach.

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1 The Peripatetic school, or Peripatetic, is the philosophy school founded by Aristotle in 335 BC at the Lyceum of Athens. This term also defines the scholars or followers, both Jewish or Muslim. It stems from the Greek root peripatein, « to wander » : as Aristotle was believed to wander around while teaching in Athens.

http://fr.wikipedia.org/wiki/%C3%89cole_p%C3%A9ripat%C3%A9tique#cite_note-0

2 The young generation, everything and right away

The survey

The survey was launched early May 2013, on Cyberlearn's homepage during 2 weeks. The student population totals 18,200. We calculated the representative sample as follows: P (percentage): 50%, M (population size): 17430, C (confidence level): 95%. E (error margin): 5%. Depending on the settings chosen, the size of the representative sample is of 376. 723 students answered the questionnaire.

Most students generally study at a bachelor level (89%), a lower percentage is enrolled in master studies (8%) (3%: else). They are mostly between 18-26 years old (81%) (26-35 years old: 16%, older: 3%). 55% of them are women, 45%, men.

As students, 59 % like interacting with their colleagues, 38 % deeply involve in the class learning activities, 31% like their professor to organize learning activities though 10%.

The survey was orientated over four axes:
- What are students' habits regarding the Internet, Social Media, Mobile?
- How do they cope between their private habits and their class time requirements?
- How do they evaluate current teaching methods used by their teachers?
- As digital natives, how would they like to improve these methods?

1. Technological habits in general

Only 34% have a desktop PC, though 97% have a laptop. As for mobiles, 20% have a mobile tablet; 80% have a smartphone (41% android OS, 39% iphone OS, 6% else); only 4% have an e-reader tablet. 64% browse the Internet every day against 310 several times a day. They massively check their e-mails, use social media, game, chat, listen to music, log on the Cyberlearn platform, do research for their courses, read news and sports information, watch TV shows, buy clothes, surf on video websites or watch live TV. Some would like to be forced giving up their smartphones during class: "*it would be more clever to prohibit smartphones in class.*" Only 1.5% never goes on Internet.

2. Technological habits in the classroom

Students' habits outside the classroom affect the ways they behave in class. 85% of them access the Internet during the course against 15% who do not. Several reasons can explain this attitude: 46% access the Internet because their professor uses the Internet during the course, 29 % check on data showed by the professor, 49% seek data to supplement data provided by the professor, 68% read their e-mails, 47% browse the Internet, 32% admit being bored by the course and 28 % like doing several things at the same time.

Some students' remarks are worth quoting:

"*Sometimes, browse the Internet or check e-mails help to progress on other projects. Moreover, it could be useful to take notes on Google drive and then share.*"

"*I cannot stop myself from going on the Internet for a day, it's really part of my daily life.*"

"*The Internet prevents me from being 100% in this course ... Having access with a single click to all information related to what professor says, makes me less attentive. But it is an illusion because you don't keep anything of what you read on the Internet.*"

"*If attendance is mandatory, but the course is too simple or boring, I do another job (or my student job) on my laptop!*"

Some students seem to consider the Internet as a kind of addiction ("*I cannot stop myself…*", "*The Internet prevents me from…*", " *it makes me less attentive..*", or as an immediate punishment when the course is not as exciting as they are hoping for ("*course is too simple or boring, I do another job*" "*when the course is particularly uninteresting I quickly digress*").

Regarding social media, 86% have a profile on Facebook, 25% on Twitter, 22% on Instagram and 3% on Tumbler. 13% of them have no profile on line. Additional social media are quoted, such as Google+, Pinterest, Spotify, Parlingo, Viadeo, Skype, Youtube, Xing and Linkedin.

If students surf on the Internet during lectures, they also massively use smartphones in addition to their laptops: 75 % use their smartphone during lectures, 29 % frequently, 46 % sometimes.

In 57 % of the cases, they check SMSs, 49 % chat on an instant messaging app such as whatsapp, 48% check their e-mails, 26 % go on Facebook or read breaking news, 25% browse the Internet or use a mobile app, 10 % read sports scores or tweet (4%). Some add comments: "*I game*", "*I calculate*", "*I verify vocabulary*", "*I translate words*", "*I game*" and one even admits to accessing dating sites.

It is noticeable that students are no more one-way-focused; they are used to realize fragmented tasks simultaneously and can (or imagine they can) listen to the course, take notes on their laptop, check their e-mails, look up a word in a mobile dictionary, ask questions and almost simultaneously, spend 1-2 minutes on breaking news or chat with their colleagues. They do not seem to categorize or prioritize tasks and tend to consider it equally as important to answer an SMS sent by a friend, or to check news, as to do an exercise during class time. If they mostly attach great importance to the professor and consider him as a specialist, he is is no more the center of the learning process, but merely a piece of the puzzle, as important as experimentation, and his physical presence is henceforth considered as optional.

3. Actual teaching methods

Globally 74% find the HES-SO teaching methods interesting enough, 22 % evaluate it as "boring" but "efficient". 14 % find the course pace too quick though 13% find it too slow. 52% are glad to have enough field practice, 64% estimate the theoretical aspects well balanced with practicing, and 57% find group work sufficiently collaborative.

4. Expectations and expected improvements

Only 37% would like to use their smartphone during lectures to help them learning. 56 % would like to listen to theoretical elements and immediately afterward do exercises under professorial supervision. Only 18% would like to experience flipped-class and 22 % would like theoretical lectures without practicing at all.

When answering the following question:"*As digital natives, what would you like to be made available to help you learn better?*", many remarks contain relevant ideas to make courses evolve:

"Electronic whiteboard, which will automatically transmit its content on the platform, so we wouldn't loose time taking notes in real time and allow us to be better focused on the course."

"It could be interesting to dig Cyberlearning concept to favor exchanges between students (help forums) and between professors/assistants and students."

"Explain on line anonymously what are my problems with such and such course to get help from other students."

"Students contests to enhance motivation and see where our mistakes are."

"Games or applications to revise courses"

"Mocks"

"Courses with audio or video podcasts"

"Courses integrating video to explain and view concrete actions"

"Using a tablet with all courses on it and a good application to take notes on documents"

"A course like in coursera to revise courses."

Most of the propositions put forward by the students reveal four types of concerns, typical of this digital natives audience:

1. The need for variety

Students single out professors who tend to use Powerpoint and their speaking time inadequately. Too much data on the same slide, unvaried text reading, extended speaking time, lack in the variety of pedagogical resources, need to concentrate over longer periods (« I find it difficult to concentrate for 4*1h30 », « profs must consider changing their techniques every 7 minutes, otherwise the student's attention span lowers at this rhythm. »), The survey shows that these features mainly emerge from students' comments. If they appreciate the professor's input and while most of them wish that part of the course « ex cathedra » remains, they clearly put forward their preference for a lesser theoretical teaching in class in favour of more concrete activities. According to the students, the theoretical part could be taught in a traditional way(the professor speaking in front of the class), or at a distance (the theoretical data being presented outside the classroom via Moodle). (« A course mixing a maximum of teaching methods whenever possible, knowing that whatever is learnt through more than one approach, remains etched in memory more efficiently. ».)

2. Visual preponderance

Many students suggest using video as a training support. Some appreciate the use of films watched in class for spurring discussion, others propose to work on the theoretical parts and deliver them in the form of videos. Yet others would prefer to have the course video-pod-casted to enable revisions before exams. (« *I would like a course consisting partly in lectures, partly in group work and partly in video, image, audio files* » , « *Videos and visual aids are important.* », « *the theoretical part taught by the professor, followed by exercises or tasks delivered in various formats (dramatization, video, writing.* »)

3. Exchanges at the centre of the learning process

Students put forward the need to work in teams. Group work is appreciated when the group size is defined adequately (groups of 3 rather than 10-15) and when not too numerous during the semester. The demand for help forums is stated clearly and is an important issue. « *Why not a forum for submitting questions to other students.* », « *Communicate via different forums. It would be interesting to dig the concept of "cyberLearning" in order to enable more exchanges among students (sort of help forums) and among students and professors/assistants*», « *A type of forum exclusively dedicated to students studying in the same year and similar topics, all supervised by professors or possibly by students who graduated from the same school, in order to create a fruitful exchange between those having working and field experience and us, students, the novices* ». Learning by oneself without resorting to others, physically or via the platform, is less rarely put forward by those who participated in this survey.

4. Inborn use of technology

About 70% of the students' propositions tend towards propositions linked to technology, ranging from a whiteboard connected to the internet and automatically broadcasting data into the Moodle environment, to podcasted or live broadcasted course, not forgetting the use of videoconferencing in order to follow-up on students' training courses, as well as offering formatted resources available on computer tablets. Some students highlight how some professors have fallen behind compared to them. (« *A course where tablets and smartphones would not be badly considered and where they could be regularly used. Professors and schools lack behind for more than 10 years. First professors should be trained, because some are not even capable of connecting a beamer, for instance*». A more frequent use of quizzes before the course, during the course (either at the beginning or at the end) and for use at home is requested by all students, even those who wish to maintain a maximum of class interactions.

Future direction

It has been some years now since Cyberlearn decided upon a clear direction: guiding and supporting a professor to help him reach an appropriate technological level to enable the development of multimedia and mobile resources, in order to accompany the student's learning ability. The propositions emanating from students are very clearly stated, all of them wish to see more technological resources be developed.

55% wish to watch more videos
47% want quizzes,
46% would like simulations,
40% would like video-podcasted courses,
31% would like more mobile applications and 30% serious games,
21% would appreciate the availability of wikis,
20% would like audio-podcasted courses,
9% wish to use blogs.

Some of these answers can be related to their learning profile. 69 % say they learn better with video, pictures or graphs, 51 % making practical experiments and 39 % learn by conducting laboratory experiments or playing with simulations.

1. Video

Considering the requests issued by the students, Cyberlearn will dig deeper into this demand concerning video. This covers two aspects: course illustration (for instance, a practical case) and course video viewing after the course. The first type of resources can be straightforwardly developed by the professors from general resources made available on the web (Youtube, etc.), or with the help of Cyberlearn by filming context situations (filming of concrete field experiments, laboratories, oral evidence from professional in action). The second type of resources consists in a more complex process for massive production. Most professors do not wish to be filmed while teaching. They fear for their image and lack of spontaneity. Cyberlearn has already developed a very simple system to gear up a classroom in order to video capture (via webcam) a professor's course, which is, for the moment, largely underused.

Most of the students' remarks show in which two ways they would use a video:

- To better understand some abstract notions or to enhance them
- To better revise for a course before an exam

We shall resume proposing professors the use of the video during their course, letting them know about the students' remarks about their clear interest in this type of technique. As the HES-SO is assessing its needs for the development of MOOC courses, the first step we shall take is to test the illustration of theoretical notions in two ways and this on a voluntary basis, according to the subject taught:

- *Screencast tutorials*: video demonstration of tools or exercise production
- *Video capture of course presentations*: outside classroom, targeted on precise topics

These video productions will be embedded into 1-2 MOOC prototypes as an experiment. We strongly believe in a MOOC of a repetitive type for cross-disciplinary subjects over several school departments (language, mathematics, communication, marketing, etc.).

In September 2013 we shall start the first productions based on a model which is currently being designed.

2. Quiz

We will prepare all the explanatory documents (video, course script, pedagogical suggestions) in order to provide the professors with different means on how to use quizzes in a course, outside a course, during the

course, etc. The Moodle LMS offers numerous possibilities for a simple and efficient production. However, in this process, it is essential to keep the students' requirements in mind, while being adapted to the taught subject, and also being easy to implement. Cyberlearn will concentrate its efforts in this direction.

3. Other resources

Cyberlearn had decided to develop mainly mobile applications. 31% of the students voted in for this type of production. Therefore, we shall decrease our effort in this field and redirect it towards videos and MOOCs. This is also true for serious games, which are not a priority, even though two are currently under development. Most probably, students wish to use familiar resources rather than consider using means for which they do not naturally see how it could help them. Moreover, the survey seems to show that students do not necessarily wish to merge private technologies habits with those of the classroom: only 31% wished to get their hands on pedagogical mobile applications, even though more than 75% use a smartphone in class; if they admit accessing the internet for playing games, among other activities (55%), only 29% actually wish to be made available a serious game resource during class.

Stimulate learning process

Cyberlearn will continue to analyze and design new teaching means by orientating its developments according the results obtained in the « digital natives » survey. Our objective is and remains supporting teaching with the help of efficient and fair priced technology, in order to render the learning process motivating and meaningful for professors and students alike.

Michel de Montaigne in the 16th century had already thought of a stimulating teaching approach:
 « Teaching is not like filling a vase, but is like lighting a fire ». In the 21st century, having recourse to e-learning, blended learning and other modern variations of teaching methods and tools, offers all educational actors a more comprehensive approach than ever, for fulfilling the teaching mission in which they were entrusted.

Thus, integrating the new student profile and taking into account his requests to orientate training methods in higher education, results in an adequate and performing approach, as it makes it possible, by using a better suited teaching-learning process, to prepare adapted and performing future professionals.

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