

WEB 2.0 Audiovisual: educational model reference

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ABSTRACT

We are testing a new educational center in northern Spain. A new educational model integrating visual strategies of Web 2.0 and intending to respond to the demands of the actual society in crisis is being practised at new Integrated Centres. This experience shows the first outcomes resulting from the adaptation of the Spanish educational model to the EAHE: a new Centre of Vocational Higher Education in Information and Communication Technology case study.

Methods: The research puts into practise the new educational model with and about WEB 2.0 ICTs in this Education Centre and confronts the academic results obtained to those from another same centre of the region.

Results: The new Centre in Communication has achieved a gradual increase in the number of students, than tripled since its inception (in 2006 there were 90 students, and in 2009 was 312). In the same way that is making the audiovisual web 2.0, we conclude in the need for bringing the entertainment strategies closer to learning, and showing that the new educational design must review its approach insisting on tasks as the mean to attain educational objectives, training of cognitive analytic and reflexive abilities focus toward the action.

Keywords: WEB 2.0, lifelong learning; media in education; teaching/learning strategies.

1. INTRODUCTION

Approaches established by the European Council in 2000 as well as its prospects for convergence in 2010 created a trend supported by Spain whose Education Administrations applied these recommends with special interest in pursuing the guidelines for competitiveness according to standards established by the Quality Assurance Reference Frameworks [1]. By facing a global crisis nowadays, it is necessary to maximize goals: high standards for quality of training, validation and recognition of diplomas in western countries, assimilation of non-formal education, and to facilitate cross-border mobility for people in a global labour market [2].

Nowadays, research and educational systems aim for new regulation of the existing training models in order to respond to the approaches set by a coherent and common European Education Area [3]. Social networks focused on supporting relationships between teachers and between teachers and their students are now used for learning, educator professional development, and content sharing. This is the result of global interests, market pressures, movement of cross-border commuters who overcome geopolitical barriers, and new technological forums for exchange of **visual** knowledge.

Rank	Site	Unique Visitors (users)
1	facebook.com	540,000,000
2	yahoo.com	490,000,000
3	live.com	370,000,000
4	wikipedia.org	310,000,000
5	msn.com	280,000,000
6	microsoft.com	230,000,000
7	blogspot.com	230,000,000
8	baidu.com	230,000,000
9	qq.com	170,000,000
10	mozilla.com	140,000,000
11	sina.com.cn	130,000,000
12	wordpress.com	120,000,000
13	bing.com	110,000,000
14	adobe.com	110,000,000
15	163.com	98,000,000
16	taobao.com	98,000,000
17	soso.com	97,000,000
18	twitter.com	96,000,000
19	youku.com	89,000,000
20	ask.com	88,000,000

Table I. Doubleclick ad planner by Google
<http://www.google.com/adplanner/static/top1000/> (1/may/2010)

The present study describes the response of the Audiovisual Centres of Vocational Higher Education to these approaches. The design of these centres follow the education guidelines developed by the Spanish legislation as well as the proposals made by the European Council of Lisbon in 2000, which sets a ten-year term for Europe to become ‘the most competitive and dynamic knowledge-based economy in the world, capable of sustainable growth with more and better jobs and greater social cohesion’ [4].

This paper is based on a publicly funded project developed from 2006 to 2009. The development of the research continue with the guidelines within the initial project called *Research and Development for training of teaching and management staff at Integrated Centres*³ coordinated by the School of Education Science at the University of Oviedo (Spain).

Phase 1 2006	Design of the new educational model based on the new legislation and according to European guidelines: new contents, methodologies and school management.
Phase 2 2006- 2008	Application of multimedia contents and new methodologies within the new school management framework.
Phase 3 2009	Verification and discussion of data development.
Phase 4 2010	Presentation and distribution of results.

Table II.- Phases of the research project.

The project started after the creation of the new Integrated Centre in 2005, with new facilities and teaching staff – the Spanish Law of Creation of Integrated Centres was developed, and the academic results obtained were compared to those of another similar public education centre from this region (*Aramo Oviedo*⁴ Secondary Education High-school) offering the same training but carrying on its daily activity as a Secondary Education High-school with a traditional approach determined by the former legislation.

2. BACKGROUND

We considered the social background of the students as well as demographic characteristics which define educational policies [5]. The social and cultural background of this Centre is that of a region submerged in a social and economic crisis, targeted for industrial reconversion of mining and transferring the primary industrial activity into services. This region is an example of the aging European population [6], which has an impact on a lack of students and this tendency makes the students become something to be achieved and satisfied [7].

The same European Framework for High-Level Education set out the guidelines for the project to put the innovative methodology into practice, and provided with the teaching autonomy established in the above-mentioned Spanish Law (*RD1558/2005*) which defines a new educational model. This Law was the object of the first research and meetings of the team for this project, making it possible to experience the European Qualifications Reference Framework and to follow the 1999 Bologna Declaration: quality enhancement of education, mobility of teachers and students due to the recognition of diplomas[8].

3. INITIAL APPROACH

Spain has been dealing with the introduction of New Technologies in Education for years (Table 3) and the number of doctoral dissertations in the audiovisual field has been increasing since the academic year 2005/06.

PhD Dissertations	Since 1976 to 12/2008		Since 2005/06 to 12/2008	
	Informatics	115 (20.0%)	53.8%	19 (20.6%)
Computer	194 (33.8%)		12 (13.0%)	
Audiovisual	128 (22.3%)	46.2%	23 (25.0%)	66.3%
Video	137 (23.9%)		38 (41.3%)	
Total	574 (100%)	100%	92 (100%)	100%

Table III.- PhD dissertations in Informatics and Audiovisual field. (Source: TeSEO Spain.)

A quick development brings together audiovisual features with informatics in multimedia web 2.0 [9]. This fact reorganizes basic education terms such as *tool* and *language* as well as forms, concepts, stereotypes and structures of knowledge within the different dimensions of knowledge in an individual [10]. A new approach for a European education institution requires setting singular, different education strategies specifically linked to Multimedia and distance training.

The Department of Education Science (University of Oviedo) provided our project with methodology and all of its professors joined the project since its beginning in 2006, when the Centre was inaugurated. Provided with new technologic audiovisual education-based resources, its high cost involved a predictable

optimization and maximization of its performance. Thus, we took into account funding and commitments made: European Structural Funds (European Social Fund) on Economic and Social Cohesion, Convergence, Training and Fight against Unemployment (Programme for reactivating the mining regions 2001-05), being Asturias priority objective no.1 within less-favoured Europe.

Revision of the state of the discussions was made during research considering previous scientific theories about training in ICT-WEB 2.0. This theory reference framework collects training experiences *with and for* devices, where the teacher and his/her activity is the fundamental key in the development and interpretation of these new cultural situations (Bartolome, 2005). Thus, Cabeza [11] says that the incorporation of technological resources may alter contents and sequence of contents so as to result in a different curriculum. We reviewed the reduced synchronic number of similar experiences in the region⁵, in Spain⁶ and abroad, where these type of centres are linked to the university field⁷; for these cases, their development and potential link with our present project were revised.

4. OBJECTIVES OF THE STUDY

The development with high autonomy enabled an innovative activity in terms of management and pedagogic decisions in order to achieve an ongoing improvement of the educational process itself as well as an adequate use of resources and excellent academic results.

Objective:

- To set out and develop new teaching methodology strategies connected with curricular contents (audiovisual) in accordance with the importance, progress and needs of the background (social/ professional/ European).

In 2008 we observed the academic results from the graduation of two classes of High-Level Vocational Education in Communication, Image and Sound. A positive result of the project is to be considered when objectives are previously set out and implemented. In order to assess the levels of development of teaching strategies resulting from new ICTs, academic results from years 2006/07 and 2007/08 will be compared to those obtained from another similar Education Institution during the same period but using a traditional educational approach without new technological resources. We also measured the accession of graduated students into employment, levels of enrolment in the centre, spreading and application of this methodology in other centres, teaching materials, and literature in the field of science and education published for that purpose.

5. METHODOLOGY

Phase 1. - A descriptive method is used in order to revise curricular contents and educational models concerning ICT. The method is based on a documentary revision, description of aspects of the new ICTs as well as the strategies that make ICTs an efficient tool for the transfer of knowledge. This is a study to find its significant variables and causal relations.

We also used the participant observation technique in which the researcher applies the design, he/she is also a member of the teaching staff and makes part of the community observed. It is a method of action research that enriches all the process but

involves the need of a proven and permanent verification of outcomes. These demands and conditions were considered as they may question the rigor of the research. We were conscious of the complexity of education phenomena due to their qualitative character which deals with aspects such as values, beliefs or meanings which are non-sensitive to experimentation. Therefore, by following this guideline [12] we had to develop methods under a multi-methodological approach, that is, by using different observers for the same phenomena so as to compare results and attain reliability levels in measurements. We tried to control the threatening level to the internal validity of the research, so individuals with a lower bias estimator participated: new teaching staff, students and management staff who restrict inertia and pedagogic habits which may alter the practice of the new educational model.

In favour of the multi-methodological approach, several simultaneous tools were used for data acquisition together with qualitative techniques of participant observation:

- a) – Groups of debate set out on the records of the teacher's meetings where aspects of the subjects proposed for the project were defined and discussed: Potential causes, main characters, hierarchies, interrelations, rules, etc. Alternative strategies and solutions were proposed.
- b) - Records and results of academic assessments.
- c) - Questionnaires about samples.
- d) - Statistic annual reports of the Centre and of the Administration of education.
- e) - Records of the follow-up of the teaching training for the teaching staff.
- f) - Reports from the Administration of Education elaborated by inspectors of the education service.
- g) - Data resulting from participant observation of the teacher's resources and methodology.

Phase 2. – Practice of the educational design and comparison of results to those from another education institution of control, using a quasi-experimental approach. Samples are students from two public education centres of Image and Sound in Asturias, those attending High-Level Vocational Education at the Integrated Centre (Langreo), and another group of control at Aramo Secondary Education High-school (Oviedo). These groups were already formed and they were considered as equal because variables comprising students' characteristics, number, composition and other aspects were the same, result of chi-square test. We considered the external validity as limited and it must be taken into account that the own Integrated Centres were created as Spanish Education Reference Institutions. Therefore, this experience aims for becoming a model for real and significant practice for the rest of the population, that is, students and teaching staff of Communication, Image and Sound.

We considered the academic results as dependent variable and features that determine them as independent variables resulting from the new training model of the Integrated Centre, established at the Spanish Law (RD1558/2005).

6. DESCRIPTIVE ANALYSIS OF NEW EDUCATION STRATEGIES IN ICT

The autonomy for organization and teaching of these institutions and a flexible framework enabled the development

of the educational model, methodologies and contents whose results are described below:

6.1. Cultural control of the Multimedia and Audiovisual narrative strategies

What kind of contents, devices and technologies in the web 2.0 are significant in our culture?

We are particularly interested in the function of new social ICTs as pseudo-trainers. The traditional teacher's activity is appropriated and redesigned by integrating a new figure of the teacher in his/her messages, which responds to interests and typical strategies of the great media [13]. We observed that Multimedia narrative techniques and its strategies not only represent a parallel school but also a reference model that seems to be prevailing on the traditional educational model. The effectiveness of these strategies makes its contents to be commonly in daily conversations and creates a specific network of values and counter-values [14].

Knowledge is also managed from new forms, devices and information hypermedia information platforms. This shapes new learning and work methodologies. Thus, these new channels are key elements when it comes to organize learning as shown in the similarity found on most of the messages of social media and streams of opinion. The integration of Audiovisual and Informatics in Multimedia [15] entails a significant change from the paradigm of teaching to the paradigm of learning. This trend benefited from technologic advancements, the increase in broadband communications as well as the integration of different simultaneous resources for the enhancement of the education process and the obtaining of a personalized learning in given environments. Techniques of smart tutoring and study through interactive website – all of them represent new models which are not free either from pitfalls and handicaps.

In the research we measured the frequency of use given to different technologic resources in our students' daily life (Table IV), its good global assessment is emphasized.

Technology assessed by students	Use (0 nothing – 10 very much)
Mobile phone (Voice)	8.5
Traditional TV	7.5
Work (no entertainment) via network (Internet).	7.4
Cinema	7.3
Multimedia phone system (data+music+video)	7.1
Photography	7.1
Multimedia players (I-pod...)	6.8
Work (no entertainment) using PC	6.5
Video signal recorder devices (DVD)	6.2
Games/ Entertainment using PC	6.0
Handheld video game console	3.3
Video Film	3.3

Table IV. – ICT's preferences. (Source: Personal Research 2007).

Audiovisual messages continue to control every communicative environment. The fact that people spend more than 200 minutes

watching TV messages by per day is a correlation that seems to increase in times of crisis when there are 100 minutes spent during a PC session by person during his/her free time⁸. This amount of time is transferred from traditional TV device to audience-made audiovisual formulas; and its messages respond to the interests of the addresser's customers (Shahid and Tang, 2007). That means that people – mainly the youngest – watch every time less generic TV shows and they choose specific programs according to their demands (YOUTUBE, pay-TV channels, on line videos, programs viewed on mobile phone, etc.).

Besides, the 2007 OPA Europe Internet Use At Work Media Consumption Study⁹ analyses Internet users from six European countries and stresses reading as the task that users often stop doing as a consequence of the use of the Internet. They also stop (following this order) watching TV, listening to radio and to music. Also, the more common uses of the Internet is the search of news, music, files and software downloads and watching videos on line. Here we realize again the hegemony of the audiovisual field in this new form of cultural transfer.

Therefore, contents associated to new WEB 2.0 must be updated and adapted to the changes suffered by its own devices which determine those contents. These are changeable, dynamic, flexible devices that fit to its users' demands.

6.2. New technologic environments for Knowledge

It was important to follow the European guidelines and to adapt them to the education background and to the particular demands of the society. We affirmed as Eco [16] did, that the introduction of the Internet has an impact on learning and students look up directly the information on the Wiki-Internet instead of using books. Thus, a new subject to be taught at school would tackle the new models for organizing and providing support to information so as to create knowledge.

It seems that traditional audiovisual mediums cannot progress anymore in the field (cinema, generic TV, etc) therefore it has to be studied now as something integrated in networks and in areas of Internet data exchange (WEB 2.0), telematic virtual worlds (MMOs...) with high number of users, etc. All of that thanks to the use of specific broadband which solves the problem of broadcasting for interactive data channels with live image (mpeg 4 compression, etc.).

MMOs	Start date	Million of subscribers
World of Warcraft	2004	8.5
Habbo Hotel	2000	7.5
RuneScape	2001	5
Club Penguin	2006	4
Webkinz	2005	3.8
Gaia Online	2003	2
Guild Wars	2005	2
Puzzle Pirates	2003	1.5
Lineage I/II	1998	1
Second Life	2003	0.5

Table V.- List of Virtual Communities on the Internet. (Source: gigaom.com June 2007.)

These telematic worlds enable the exchange of information, and they become iconic data in a great way, where the user doesn't have to go out as they simulate that real life. However this virtual world lacks of effectiveness in the treatment of abstract and conceptual contents (e.g.: a philosophic thought) because the image is so powerful that deletes and restricts the content to a secondary position. Primitive gratifying instincts are encouraged (laugh, pity, hurt...) against the capacity for abstraction essential for the development of a reflexive awareness. This new Web 2.0 model for Information Exchange is shown in data from Youtube audiovisual medium (February 2010):

- "Charlie bit my finger - again". Music Audiovisual file played 176 million times.

- "Lady Gaga - Bad Romance". Music Audiovisual file played 170 million times.

- "Evolution of *dance*". Music Audiovisual file played 150 million times.

6.3. New Audiovisual Educational Model

The Web 2.0 is a global business. The WEB 2.0 contents are introduced under proven successful formulas which have become communicative and cultural patterns worldwide following the guidelines and strategies of marketing (Ferrell and Hartline, 2006). These guidelines rule contents and speech of social communication to make them profitable – therefore during a TV show a CD of music, games, a film coming afterwards or t-shirts of its main characters will be promoted . So, students are often faced with the temptation of attractive activities, which may interfere with the learning task and result in detrimental effects on experience and performance [17] .

We see that there is a need for developing strategies that will seek the customer/student and his/her fidelization. This is a response to market economy approaches where supply and demand struggle to find their breakeven point. The models of quality management and management approaches toward the customer [18] have a special connection with these marketing techniques:

- To plan so as to gain markets with limited customers/students who buy their products. The profile of profitable customers is studied and that of minorities is discriminated. Marginalized people and particular ethnic groups are forgotten as far as great strategies concern.

- Clear specification and maximization of tangible objectives: number of customers, sell of products, etc. Efficiency criteria for actions depend on tangible results at the short term.

- Material things are especially valued in detriment of social goods and products.

- These techniques have great power of communication; they use communicative solutions from resources and devices of other systems (theatre-related techniques, radio, music or education itself). Communication is direct and contents and forms are recreational.

Below are shown the aspects of effectiveness of the market strategies used by audiovisual social media compared to those of a traditional educational model.

Comparative analysis between the audiovisual model and traditional educational model.

WEB 2.0 model strategies (references for Audiovisual Centre in Communication, Image and Sound)	Traditional educational model (Control Group)
Strategies focus on efficiency: data offer, entertainment, constantly assisting users [19].	Goals based on help to build knowledge without assisting their users or entertaining them.
Messages from a close distance, colonizing their daily environments and homes .	Teachers seem distant from their cultural elite.
Contents are shown from different sources [20].	Traditional teachers approach the study of science and error; their discourse (assessment of effort, perseverance) contradicts the messages received by the student from different media.
WEB 2.0 discourse is based on iconic forms and limits reading to complementary forms of expression [21].	Traditional teachers whose teaching is based on readings and writings.
And the Audiovisual model is efficient to solve questions through images, it is a self-explaining specification - elements will be integrated into the images themselves to explain contents- [22].	Reflexive abstraction requires deep rational thinking, imagination. It is a comparison between the typical likeliness of the iconic elements and typical cognitive abstraction.
In this sense, audiovisual media focus on the sphere of feelings , fascination and fantasy [23].	Contents are focused on objective logical thinking, deep and extensive analysis of data, scientific realism of traditional education.
Its procedures are very dynamic and aggressive. It is performance and exaggeration what counts.	Reality is what matters, the real dimension of problems and contextualization and deepening within phenomena.
Ephemeral , easy descriptions are provided creating a superficial, mosaic knowledge.	The classroom is a framework for deep and co-ordinated knowledge (Winn, 2002), with thorough studies. Deep and long descriptions, complex thinking to understand the multiple dimensions of problems.
In the WEB 2.0 the multimedia provides data from the ubiquity with random , diffuse presentation. No sooner had we observe an earthquake than we watched a contest or	The classroom follows a systematic, structural, lineal planning (established in a series of documents, programmes, etc.).

sports game...	
Goals for media are economic and materialistic at the short term together with immediate solutions (e.g.: if the audience buys a certain product so they will be happy) [24].	Teachers search for achievements at the long term: development and training of the individual, and they mainly offer solutions for the individual's problems by using a thorough, extensive scientific method.
Particularly, audiovisual media do not require a response from its audience whom receives messages in a passive way. It is unnecessary to think over easy and already assimilated messages [25].	Teachers require a response from their audience. Effort and deep thinking which require great doses of concentration.
The message is surrounded by a recreational and dynamic sphere.	Teachers are sometimes too serious, boring and <i>static</i> .

Table VI. - Comparative analysis between the audiovisual model and traditional educational model.

In brief, for these new media (WEB 2.0) forms are as important as its contents. Messages focus on feelings, on the sensitive and instinctive part of the individual where the *possessions* and the *I* are valued – happiness at the short term, whereas the traditional educational model focus its contents on reasoning [26].

8. CONCLUSIONS

The new Centre in Communication, Image and Sound has achieved a gradual increase in the number of students, than tripled since its inception (in 2006 there were 90 students, and in 2009 was 312). It is an attractive educational model in an area in crisis that is losing population.

We conclude in the need for bringing the entertainment strategies closer to learning, and showing that the new educational design must review its approach insisting on tasks as the mean to attain educational objectives, training of cognitive analytic and reflexive abilities focus toward the action. This project propounds the encounter of these two educational models: the traditional educational model and audiovisual narrative model.

This new experience still continues in Asturias, and it is willing to be shared with rest of the Education Community. This project has demonstrated that training in these subjects entail certain features:

- Students require dynamic and updated contents connected to the technological advance of the environment, as social media offer them daily. WEB 2.0 applied to education are dynamics; they develop their own devices, contents, communication techniques and any approach quickly become ancient.

- It is necessary to integrate new strategies to the educational model where new multimedia contents and new educational methodologies are coherent and have a close connection. These new educational approaches do not have a direct impact on the level of academic performance of students but they give an

answer to cultural demands, to new technologic devices and forms of knowledge which differ from traditional educational resources and schemes. From this insight, contents, forms and methodologies gain the same significance, and the educational model should use any of the proven efficient strategies being described in the social media field.

9.- NOTES

- 1 Law RD5/2002, Qualification and training, (Art. 11.4) Organizes the creation of these centres of Vocational Education.
- 2 Langreo Spain. Email: imagenysonido@educastur.princast.es Tel: (+34) 985678516 www.cislan.es
- 3 BOPA 20-IX-2006 (12-9-2006). Asturias - Counseling Education.
- 4 Oviedo Email: aramo@educastur.princast.es Tf: (+34) 985231410 web.educastur.princast.es/ies/aramo/
- 5 I.E.S. Laboral Gijón, I.E.S. Valliniello Aviles, MSP Langreo, y Hostelería y Turismo Gijón.
- 6 I.E.S. Corona Aragon, I.E.S. Enlaces Zaragoza, XABEC Valencia.
- 7 Center for Integrated Arts Education University of North – Colorado.
- 8 December 2008 Nielsen/Net Ratings
- 9 Europe Data, www.opa-europe.org

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Illustration New Centre of Communication, Image and Sound in Spain.