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E-LEARNING AND COMMUNICATION SCIENCES: AN INTERDISCIPLINARITY APPROACH

Hear and See is a Swiss Virtual Campus project in Communication Sciences. It aims to the development of a set of online learning modules about media history, analysis and sociology. Such modules, produced in multiple translations, will support bachelor courses at different Swiss Universities. The development of Hear and See requires a tight collaboration among partners from different fields. The paper discusses the twofold intersciplinary communication occurring in the project – interdisciplinarity at square power. The first level concerns content production, in which authors have to blend different approaches, perspectives and methods in the study of media. The second level concerns the design and production of eLearning courseware: it is a process in which content, instructional strategies, technologies and graphic design come together. The two levels are analyzed from three perspectives: (a) the meaning and approach to the project of each partner; (b) the communication strategies and practices adopted in it; and (c) the different issues at stake for each partner.

Keywords: sociology, social history of mass communication, discourse analysis, e-Learning, instructional design.

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Introduction

Information and communication technologies have brought about a great change in communication practices in many fields, including the higher education sector, where eLearning practices are more and more diffuse. The Swiss Virtual Campus (SVC) is a federal funding program aiming to the integration of eLearning practices in the Swiss higher education system (SVC, n.d.).

SVC projects bring together a network of higher education institutions for the development of shared eLearning resources or courseware. Project team members usually speak different languages and have a different background and education. Moreover, for most of them, it is the first experience in eLearning. These situations are characterized by the lack of established routines and of common ground (Bates & Poole 2003), so that developing a shared understanding and setting clear goals is often an issue (Botturi 2006a).

Hear and See is a SVC project started in 2004 and currently in its second and final year (Hear and See, n.d.). The leading house is the Istituto Media e Giornalismo of the University of Lugano, in partnership with the Universities of Fribourg, Bern, Lausanne and Neuchatel. Moreover, the project enjoys the collaboration of SSR-SRG Archives, which provide audiovisual materials, and of the private television station Canal Alpha. The Hochschule für Gestalt und Kunst Luzern (HGKL) provides the graphic design skills, and eLab USI/SUPSI the pedagogical and technological support. The general domain covered by the project is a core part of Communication Sciences: the development of audiovisual broadcast media – namely radio and TV, with particular attention to advertisement and a perspective on new media – both in terms of *leitmedia* and in terms of pastime, over the course of the 20th century. In the realm of mass media, audiovisual broadcast media continuously offer new challenges for disciplines such as communication studies and media history, which since their origin have been focusing mainly on the (written) word as textual resource.

Hear and See has produced a set of online resources about the media history, media analysis and media biographies for students in Journalism, Communication Sciences and Media studies across Switzerland. The resources include online 20 learning modules in multiple languages, a CD-rom with interactive applications for media analysis, a collection of online streaming audiovisual materials, a blog about new media, an

online glossary, and a database about media biographies. The resources provide students with customized blended learning tools designed for:

1. Enhanced understanding of the dynamics that occur when electronic media technologies are introduced into specific social and historical contexts;
2. Critical analysis of audiovisual documents within their respective social and historical contexts;
3. Systematic qualitative analysis of audiovisual documents, both historical and contemporary;
4. Establishment and systematic development of an interview-based oral history database with regards to individual and collective (childhood/adult) media and program memories, complete with a theory-based discussion of the uses thereof.

1. Multi- and Inter-disciplinarity

Before coming to the actual discussion of the two levels in the Hear and See project, it is worthwhile to devote some space to make some important points about the very idea of interdisciplinarity.

The generic idea of interdisciplinarity actually covers different things which should be distinguished in order to get a more precise insight. We will focus here on the distinction between multi-, trans- and inter-disciplinarity as it can be found in the literature. This distinction can be traced back to Piaget (1972; cf. Cianetti 2006), and distinguishes three levels of interaction among disciplines:

1. *Multidisciplinarity* indicates the activity of studying a single object from multiple but distinct perspectives. For example, a long-term health patient can be analyzed in a different way from a medical doctor, a psychologist, an economist, and each of them would bring elements to complete its profile.
2. *Interdisciplinarity* stems from multidisciplinarity, and indicates a two-way interaction process among the various disciplines, that generates a new view of the object of study. The medical doctor, the psychologist and the economist could work together and develop a new inter-disciplinary method for assisting long-term health patients.
3. *Transdisciplinarity* can be interpreted as a further step in the direction of interdisciplinarity, when different disciplines are actually mingled together and form a new consistent whole. This would happen in the case in which the three disciplines considered in the example gave

birth to a new discipline or conceptual system to generically describe long-term illness states in a novel way.

We notice that these concepts can vary when applied to the specific disciplines. Those with a longer tradition and more clear-cut boundaries (e.g., Biology or Chemistry) can be expected to be less open to interdisciplinary communication, than other disciplines, which are by nature in contact with other ones (e.g., Art History or Literature). We will critically consider this issue later on in the lessons learnt section talking about disciplines and persons.

2. Twofold Interdisciplinary Collaboration

The concepts of multi-, inter- and trans-disciplinarity are useful in order to understand what happened in the Hear and See project, a multidisciplinary environment that gave raise to two levels of interdisciplinary communication. Such levels match the dimensions of an eLearning course identified in (Lepori, Cantoni & Rezzonico, 2005), and also indicate two complementary aspects of interdisciplinarity in Communication Sciences.

1. The first level, related to content, requires at first putting more disciplines together – history, sociology, text analysis – into the study of the birth and development of mass media in Switzerland.
2. The second level is related to the development of a teaching and learning system, which brings together specific contributions from different "mother disciplines" in order to develop new instructional ideas for exploiting eLearning technologies. Such disciplines are both related to content (see level 1 above) and to teaching and learning (instructional design, multimedia development, etc.)

Figure 1 depicts the double articulation of interdisciplinarity in Hear and See.

On the following page:
Figure 1 – Two levels of interdisciplinarity
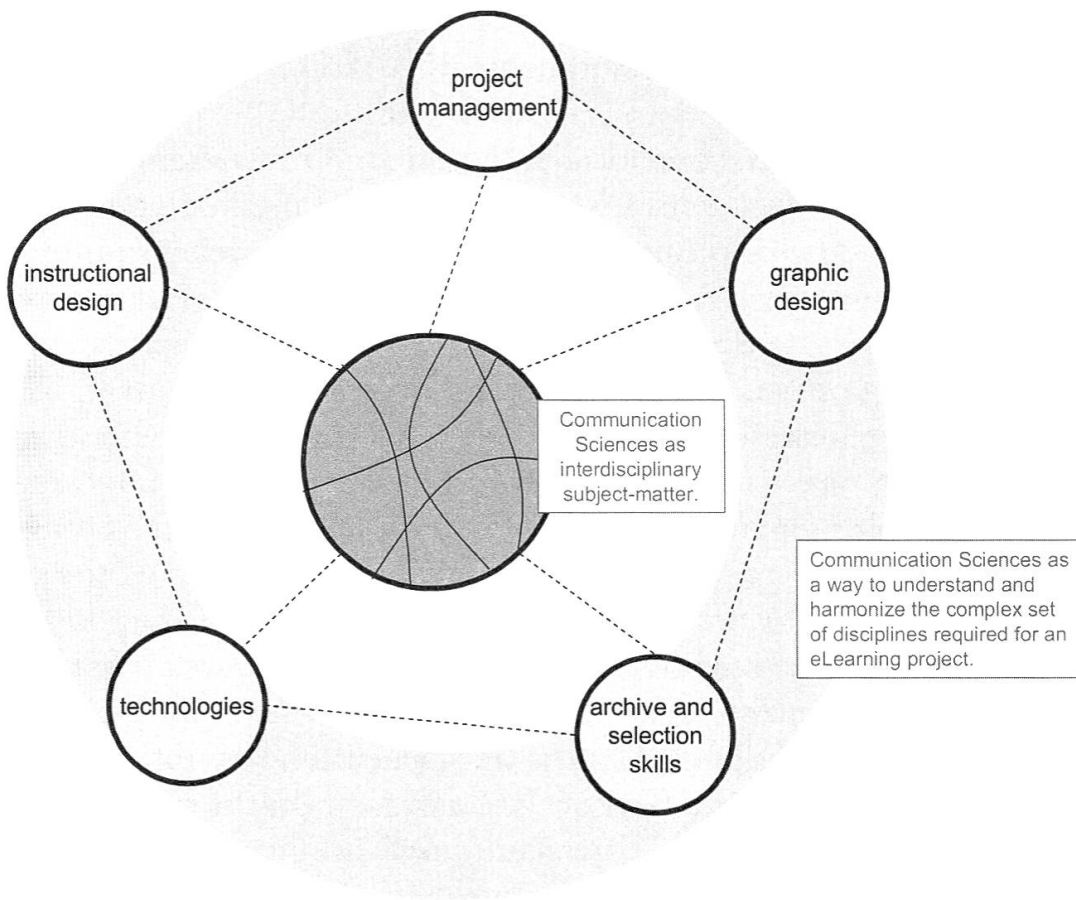
The following paragraphs describe with more details the two levels of interdisciplinarity and indicate how their articulations can be extended to describe two general perspectives on Communication Sciences.

2.1. Content level

The level of content is paramount for a project such as Hear and See, which aims to providing an exhaustive view of the raise of radio and television, with special attention to Switzerland. Seen from the outside, media studies can seem a quite coherent body of knowledge and methods: actually, having different branches of Communication Sciences to converge in the development of consistent learning resources can be a daunting task. Media – just like all subjects in Communication Sciences – are a multifaceted and complex phenomenon, which requires multiple perspectives in order to be properly, even if partially, understood.

In the specific case of Hear and See, a necessary field of research is the *economic and social history of the media.* It connects technological development, the evolution of the Swiss society and the political decisions that

determined the existing radio and television system in this country. From an instructional point of view, through this contribution, condensed in the studies by e.g., Cosandier (1997) and Schade (2000), students can on the one hand discover the historical background of the present situation, and on the other understand its basic practices and methodologies.

General sociology is also important for a better comprehension of the existing media system. The model developed by Saxer (2000), of structuralist-functionalist derivation, shows the democratically controlled institutionalising of the Swiss radio and television.

Next to these theoretical branches there are others, more methodological ones, which deal with media analysis. They are of great importance in order to achieve the didactic goals of the course, because they provide the student with the necessary tools for finding and interpreting the content of media discourses. Hear and See contains two main suggestions for the approach to audiovisual documents: on the one side, to analyse them as texts, and the on other, to understand their discourses. In conformity with the proposal of Talbot (1995), a text is a cultural object, the product of an interaction to be observed. The discourse on the other side is a cultural activity, the process of interaction itself. In the first case, there is *content analysis.* For example, television texts are considered containers of data of a unity of content with autonomous significance and value. Actually such analysis permits to think over the social context where programs are developed. In discourse analysis, the aim is not to weigh up the frequency of some themes within a broadcast programme, but to highlight the discursive setting that holds it up, and the strategies that are used (Casetti & Di Chio 1997). The investigation moves from the analysis of content to how they are constructed and how they work.

What we label "media studies" is therefore a complex and interrelated set of contributions from different disciplines. As already mentioned, this holds also for other areas of Communication Sciences – e.g., the study of interactions, dialogue analysis, tourism communication, etc. – and indeed of all disciplines that study complex phenomena trying to blend different perspectives in order to get a more comprehensive view.

According to the definitions discussed above, such an interaction could be described as a *multidisciplinary* effort: it is in fact composed by different intertwined knowledge that come together in order to generate complex models without dismissing their own specific perspective on the considered object of study. However, the instructional purpose of Hear and See brought it to move one step further (Cioffi 2001). How is it possible

to teach the different disciplinary perspectives to young students which are not yet prepared for complexity? Hear and See team decided to start from making the presentation simple, and first propose a sort of "unique access point", which is interdisciplinary in nature, and only later distinguish the different perspectives. This of course required that the interaction among the disciplines gets *interdisciplinary*, i.e., able to generate new conceptual systems, allowing students to develop a new vision of the object of study through the interconnection of different knowledge.

2.1. eLearning environment level

The set up and maintenance of an instructionally effective eLearning environment depends on the availability of skills and techniques to imagine an original teaching method and to design and develop the necessary learning resources. From this point of view, the disciplines mentioned above as elements of media studies are the object – or the subject matter – of the work, while other disciplines from Communication Sciences, or close to them, play an active role.

Obviously sound skills in *information technology* are required, as they permit to properly digitise video and audio documents and to create digital documents in various web formats.

In order to match technical and humanistic competences, other disciplines, less evident but equally important, are necessary. *Instructional design* combines educational insights and methods with technologies and project management, striving to effectively deploy the potential of information and communication technologies to education. *Project management* in particular indeed plays a major role: its concern is the global management of the project, constrained by limited budget and time, and at the same time targeting high quality.

What the students see, in the end, of Hear and See, is its interface: *graphic design* has the task of making the product aesthetically consistent and attractive, and at the same time to render design choices in a usable manner, in order to have students to focus on the content, and not on the interface they are supposed to use. Also, Hear and See is based on the availability of audiovisual archive materials, so that the interaction with archive managers is also crucial.

On this level, interdisciplinarity – not only Multidisciplinarity – is necessary in order to get a consistent original product out of the several disciplines involved. Once again, is not the disciplines that work togeth-

er, if not metaphorically. It is people – web programmers, instructional designers, project managers, archive staff – that need to understand each other and find a way to act as a team.

Communication Sciences provide an interesting approach to understanding such a complex situation, in which different professional cultures get in contact and should be harmonized, through negotiations, conflicts, mediations, in order to achieve some goal (Botturi 2006 a). The next paragraphs try to put forward some elements on which this understanding is based, and indicate how such understanding can be turned into effective team communication management.

3. Team communication practices

Hear and See is a successful project: it has achieved all goals as planned, and even something more. Its resources have been thoroughly tested in different teaching and learning contexts with positive outcomes, and are currently used in four Swiss universities. This indicates that the interdisciplinary issues mentioned above have been turned into an opportunity – and this happened mainly through the identification of sound communication practices. The next paragraphs discuss three of them concerning the second level of interdisciplinarity, i.e., the interaction of different disciplines in the project team.

3.1. Creating a common understanding: language, expectations and vision

A key issue in starting a new project is the development of a shared understanding of how the project should work, i.e., (a) about the role, duties and expectations of each partner; and (b) about the product to be developed. In the case of Hear and See this was rather difficult as all partners except the eLab were novel to eLearning: content authors had no idea of what they should expect from instructional designers, graphic designers and web programmers; and also, the latters had no familiarity with the content to be taught, and the eLab staff had only a generic idea of what kind of teaching the project was expected to support.

Right after the start of the project, the eLab organized a first two-day residential seminar in Novaggio, in which it presented the management and issues of SVC eLearning projects. The main outcome was the definition of a common vocabulary for talking about the projects, including terms as, e.g., *learning goal, scenario, learning object, courseware*, etc. Also, the seminar

was a chance to discuss the expectations among the project partners. On this basis, the project started rather smoothly, and the first project meeting was successful in generating a project vision, which included potential use scenarios, the product structure, and the main learning goals.

This first mediation phase, which involved the development of a common language, of correct expectations, and of a project vision, was paramount for the following steps of the project, as it provided a general reference framework for all team members.

3.2. Each one to its role

If the competencies and skills of the team members covering different roles differ, the motivations of the different project members are even more distinct. Once again, the difference can be traced on the articulation of the two levels mentioned above. Subject-matter experts and instructors consider Hear and See as part of the teaching side of their jobs. The learning resources of the project will hopefully become a part of the courses in order to give the student a deep knowledge of the social dynamics of the mass communication. On the other hand, for technicians, the project represents an important chance for the experimentation of technologies in an innovative context, while for eLearning specialists look at Hear and See as an opportunity to research and experiment new instructional methods.

The definition of expectations among the partners was the condition for a healthy organization of team communication, which presupposes a clear understanding of roles. In particular, two main problems should be avoided (Cantoni & Piccini 2001):

Talking with the wrong person. E.g., complaining with the web programmer of some graphic design decisions, or discussing about technology performance with the content author. This leads to wrong expectation, consequently to the perception of problems as unsolvable, and finally to potential conflicts.

Believing you have to think like the other. E.g., trying to think as the graphic designer instead of evaluating her/his work as content author or instructional designer. This leads to conflict ("I'm in charge for pictures, not you!") and to overlooking important details.

Believing the others think as you do. E.g., thinking that all project partners are familiar with the content and its implications. This leads to give for granted things that should be expressed and shared.

The prototype-based design and development model proposed by the eLab (Botturi, Cantoni, Lepori & Tardini 2006) acted as a catalyst under this respect. The fast production cycles compelled the partners to elicit their understanding and compare it with the others', thus stimulating feedback, discussion and the convergence toward a common view.

3.3. Communication structure

The implementation of the fast prototyping model in the reference framework (language, expectations, vision) generated a particular communication structure. Following the track of prior works available in the literature, Botturi (2006 b) developed an empirical method for the development of shared concept maps and for reconstructing the communication and collaboration network of eLearning teams, and included Hear and See in his study. The results indicate that the Hear and See project team has a particular communication structure, with well defined roles and a double articulation: on the one hand content authors, coordinated by the project leader, and on the other the development staff – the link in between being represented by the instructional designer, who carries out the function of communication organizer within the two parts of the team. On the outside, the project enjoys the support of a quite wide network of external partners, coordinated by the project leader role.

The design and development processes at work in this configuration is supported by a set of design documents and templates developed *ad hoc*, including hypermedia structure maps, special formats for content development, etc. These documents were developed during the first reiterations of the fast prototyping model, and were then applied a guidelines for the following steps. The research by Botturi (2006 b) shows that these documents support the creation of effective interface between different profiles and project views, and have more impact than neatly defined process representations or descriptions.

3.4. Issues and problems

Of course the development of Hear and See was not all smooth and without accidents. Interdisciplinarity is a condition of existence for projects such as this one, but it is also a pitfall and a potential generator of hurdles and obstacles in the project.

Misunderstandings were surely a potential pitfall right at the beginning of the project. On the eLearning environment level, this was true at least in two senses (cf. Cantoni & Piccini 2001):

 (a) thinking that others will accomplish a task when they actually will or can not (e.g., that the graphic designer is also expert in web interfaces); and

(b) thinking that other team members expect exactly what you will produce (e.g., content formatted in a certain way).

The rapid pace and the quick production imposed by the fast prototyping model helped in identifying such misunderstandings early. It was then up to team members' good will and care for the success of the process not to dwell on them but to find a solution and move on.

On the other hand the fast prototyping approach caused some problems on the content level. Mingling different disciplinary approaches into one consistent content is not an easy task, and might require some time – a time that fast prototyping does not allow. Under this respect achieving a balance between "delivery early" and "get good content" required some experience and a good degree of flexibility.

An experimental study in this field would deliver more interesting and detailed results than this simple project report, in which no comparison is actually possible with projects that have taken a different course or made different decisions.

4. Conclusion

4.1. Lessons learnt

The Hear and See project was an opportunity to observe interdisciplinarity in the practice. The first thing that emerge is that disciplinary differences should not be overlooked, and that they show up mainly in terms of "cultures" or "subcultures" of team members. Differences can be hurdles, but if properly managed, can become an asset for the project.

As we discussed in the body of the paper, disciplinary differences in eLearning projects can be of two kinds: content-related and learning environment-related. They give raise to different dynamics and should be managed in different ways.

Lastly, and this is probably, the main lesson that Hear and See has to teach about interdisciplinary communication, is that disciplines are abstract concepts, and it is not them who should come together, rather

people. Interdisciplinary is very likely to happen when people with different backgrounds enjoy collaboration and see the good in sharing their ideas and thus moving from multidisciplinarity to interdisciplinarity. From the point of view of team management, this means focusing on shared and agreed upon practices, not only on theoretical agreement.

A project like Hear and See, focused on production rather than on research, and on the communication of knowledge rather than on its extension, was a challenging opportunity for initiating a rich interdisciplinary collaboration in a team of scholars, to have them bend together on an apparently simple task. Interdisciplinary largely emerged as a consequence, rather than a goal, of the common practice.

4.2. Interdisciplinarity and innovation

This article offers only a short report of a challenging project such as Hear and See. Out aim was to show, through an example, that interdisciplinarity is an essential feature in Communication Sciences: it is interdisciplinary when it is considered as a discipline – the content level – and it can help understanding and managing interdisciplinary communication situations – the eLearning environment level.

The real subject, the designer and responsible, for a project such as Hear and See, is the team, and interdisciplinarity means in practice people with different views working together. This happens through a quite long and sometimes daunting process, which, if effectively managed and guided, can lead to the development of real innovations: the definition of a perspective which is *new* for all the players.

In Hear and See one particular innovation deserves to be mentioned as exemplary: the very rare occasion to integrate innovative pedagogical ideas into the teaching of the history and the sociology of the media – a field generally resistant to such changes. Early in the project it was clear that traditional teaching in this case wouldn't be effective: Hear and See is not addressed to "specialists", or better said, to students with a specific orientation to history and/or sociology, but to students in communication. The confrontation on the eLearning environment level – which means the close joint work of the people in the team – allowed the design and development of several interactive exercises, associated with each content unit, a novel idea, if we consider that already in the definition in Auguste Comte's *Cours de Philosophie Positive*, this knowledge, just in

being science, appeared too much faceted and complex to be fit for didactic exercises with a playful flavour.

The development of a set of online resources proved to be a good chance to critically rethink many relationships in the field of Communication Sciences. Interdisciplinarity can surely be counted as one of the biggest challenges for a team – but at the same time it can be regarded as its greater richness. In this case the availability of technologies functioned as the catalysing instrument that permitted the development of innovative forms of teaching and learning.

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