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CHALLENGES IN HIGHER EDUCATION: INVOLVING STUDENTS IN THE DYNAMICS OF SCIENTIFIC KNOWLEDGE PRODUCTION

Ana Capelo[1,2] & Isabel Cabrita[1]
[1]*Research Centre on Didactics and Technology in the Education of Trainers (CIDTFF), Department of Education and Psychology, University of Aveiro, 3810-193 Aveiro (Portugal)*
[2]*Centre for the Study of Education, Technologies and Health, Polytechnic Institute of Viseu (CSETH), 3504-510 Viseu (Portugal)*

Abstract

Society is currently contending with numerous problems for which, in many cases, no solutions have been found yet. One of those major issues is unemployment, which affects the population as a whole but has damaging repercussions on students attending higher education (HE) institutions and is hugely demotivating for them. Measures to combat student failure in education, often caused by this lack of motivation, have not been effective so far and need to be urgently revised.
In this context, a study of qualitative nature was planned in order to assess how influent is the effective and active involvement of HE students in the dynamics of the production of scientific knowledge as a way to promote motivation and success in education.
This essentially theoretical article reviews projects conducted to fight students' dropping out of HE; it stresses the importance of young people getting involved in the dynamics of research in HE and relates this measure to the kind of motivation and progress felt by students throughout their studies.

Keywords: *Challenges in higher education (HE), Dynamics of the production of knowledge in HE, Student motivation, Progress in studies, Dropping out of HE.*

1. Introduction

The existence of some major problems that have been plaguing the world- issues such as hunger, poverty, unemployment- led the United Nations to require the extension of the Objectives of the Millennium Development Goals (MDGs) and to their conversion into 17 sustainable development goals (SDG) that each country has adopted (UNRIC, 2016).
Reducing unemployment rates is one of the essential goals upon which the development of any country must be based.

High unemployment rates seem to be one of the factors that cause a feeling of deep frustration among many thousands of young people who are entering higher education Institutions (HEI). This discomfort causes higher education indecisiveness, as well as school failure and successive school dropouts (Cardoso, Escária, Ferreira & Raimundo, 2014).

In view of this situation, a variety of measures have been adopted in order to promote the success of all students. Nevertheless, such measures have not yet produced the intended effects.

This is an extremely complex problem that a wide range of young people with a wide spectrum of interests, expectations and motivations – people in which we have to include the Millennials (McBride & Nief, 2011; Starlink, 2004), the neet (Benjet, Hernández-Montoya, Borges, Méndez, Medina-Mora & Aguilar-Gaxiola, 2012) and the generation Z (Törőcsik, Szűcs & Keh, 2014) has to face the way they never had to before. We can't forget that many of those young people are acclaimed by the media for their exceptional skills (Törőcsik, Szűcs & Keh, 2014).

In order to solve this situation, several authors (Taylor & Parsons, 2011; Jenkins, 2003) advocate the implementation of strategies which will help emphasise the importance of a greater intervention of students as far as their academic career is concerned, an intervention which will only become possible through a dynamic involvement in the production of the scientific knowledge itself.

2. Objectives and methodology

The investigation was structured with the main purpose to measure the effective and active involvement of students in the production of knowledge and the effect this involvement will have on motivation and school success.

Since the choice of the method should be made according to the nature of the study problem (Bogdan & Biklen, 1994), we thought it would be appropriate to choose a qualitative methodology, a method based on a constructivist and interpretative paradigm, (Creswell, 2003), and with a multiple case study design (Yin, 1994). The data will be collected, essentially, though an inquiry process (questionnaire, focus group and interview) conducted with several participants: teachers, researchers, students, through observation and documentary collection.

The qualitative data will be submitted to content analysis (Bardin, 2002), sorted by categories that will emerge from the issues and objectives of the research process and of the data collected. The quantitative data will be subject to descriptive statistics.

With this theoretical article, and after having clarified some core terms of the study, we will analyse a few projects that will help fight failure at school and school dropout in HE; we will support the increasing relevance young people have in research dynamics in HE and we will establish the relationship that exists between this kind of measures and the students' motivation and their school improvement.

3. Clarification of terms

There are several meanings for this concept of "motivation", which makes it difficult for people to adopt a sole definition (Locke & Latham, 2002).

According to Ryan and Decci (2000), two different types of motivation may be considered: intrinsic motivation and extrinsic motivation. Intrinsic motivation refers to any kind of psychological reward (recognition, status, respect, satisfaction), that varies from individual to individual, which is granted anytime he performs a particular task and whose main aims are to help him achieve his own satisfaction and pleasure. Extrinsic motivation occurs when the rewards are tangible (e.g., salary, promotions, good rank in a frequency) and the goal is to achieve a certain purpose.

Academic failure is perceived, by some, as the inability to achieve the global objectives that have been defined for each course of study and that are embodied by a process of evaluation (Martins, 2007). In this context, the failure indicators that are usually taken into consideration are the retention rates, school dropouts and exams failure.

For others, failure cannot be identified only with this range of objectives defined for a course of study. The International Organization for Economic Cooperation and Development (OECD, 2004) recognizes differences between achieving successfully the objectives previously defined for an educational course and to simply reach them: "Successful completion must be distinguished from simple completion of the programme which is achieved solely through fulfilling attendance requirements" (p. 39).

As already mentioned, school failure (or academic failure) can lead to the students' academic dropout (Ferreira & Fernandes, 2015).

This term – academic dropout - has taken several designations. For example, the glossary of terms issued by the Regulation of requirements of the Porto University, in accordance with law No. 37/2003, defines "academic dropout" according to the students and to the situations in which they are included: AI-registration in a given school year is canceled by decision of the student or the institution's, without loss of registration; AM – registration is cancelled as a result of the student's dropout or by decision of the institution; I – student left the course for lack of inscription, without having graduated; PR- student registration aborted due to repeated school failure .

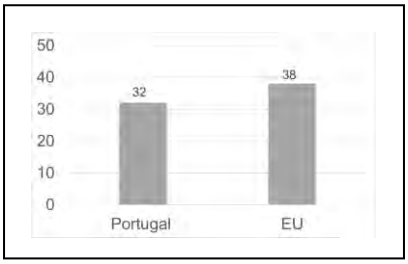
Since we recognize the importance of the meaning attached to those terms in each of these different contexts (mainly to terms like motivation and failure –and dropout, as well) and the importance of getting young people ready to enter labour market, we have to highlight some projects that have recently been implemented in order to better identify the causes of failure and to outline some measures that will help overcome this situation.

4. Appointments for the integration of young people in the research dynamics

Since joining the European Union, Portugal has been looking for ways to fight school dropout and school failure, through: (i) pilot projects which offer mentoring and vocational courses and (ii) projects related to improving the management quality in the context of the public HEI missions, promoted by the Portuguese Ministry of Education and Science.

However, recent statistics indicate, for Portugal, that the completion rate of HE among young people between 30 and 34 continues to be much lower than the EU average (Figure 1).

Figure 1. Completion rate (%) of young people between 30 and 34 years. Source: CE (2016).



Against this background, there is an urgent need to implement other measures. Several authors emphasise the importance of effectively including students in research teams and the sooner the better, because:

i. "can find material that challenges the faculty member's worldview and expertise" (Windham, 2005, p. 8);

ii. "can uncover stories and research results that the faculty member has never heard about" (Windham, 2005, p. 16);

iii. develop intellectually and have access to knowledge as an active and dynamic process (Cabral, 2017);

iv. develop appropriate skills to make decisions (Santos, 2016);

v. motivate themselves to continue studies (Taylor & Parsons, 2011).

Others (e.g. Katz & Assor, 2007) stress that students learn better when they feel valued by participating in the activities of a community, and feel more motivated for doing something they have chosen and not what someone tells them to do. Students can thus not only get better results, but also acquire a new interest and an increased motivation for engaging in an open and creative activity, promoting their professional growth. No less relevant, such activities give them greater power to cross the borders between the subculture of everyday life, school and the science knowledge and thus provide them with a better preparation to face the constant challenges that society will throw at them. To that extent, students are part of a culture of learning – where teachers will also learn from their students- a model of horizontal relationship between students and teachers (Taylor & Parsons, 2011).

5. Initiation to the integration of young people from HEI in the dynamics of scientific knowledge production

Both the literature (e.g. Taylor & Parsons, 2011) and the accumulated experience (e.g., Jenkins & Zetter, 2003), in conjunction with institutional goals of many HEI, recommend the integration of young people from ES in the dynamics of the production of scientific knowledge.

However, this integration usually happens only in the last years of the courses, and for the purpose of carrying out Dissertations, internships, projects, and so on.

With such intentions, many countries have been implementing projects that integrate the students in research projects. These intentions are more directly linked to school disciplines like Biology or Chemistry and aim to engage students in the kind of scientific work that is really developed in HEI.

The contribution of such strategy is to expose students to learning opportunities that are relevant to the real world, and to get students to contribute to the body of scientific knowledge. As an example, the *FoldIt* project involves the students, and their teachers, in tasks that will develop problem-solving skills puzzles about why and how proteins fold. Another project -*The USA Phenology Network* - offers two possibilities of involving students in research. First, students can take the role of observers. To be an observer, the site guides them to identify plants and animals they can observe in their region. It also guides the students so they can select the appropriate location for observation and register online to present the data they have collected.

The second way leads students to collect historical data from handwritten letters, from the late 19th century, which carry information about the phenology of birds. The students may act as assistants during the analysis of these letters which have to be scanned and will help record the information in a given database.

Other authors (e.g. Jesus, 2008) support these aspects, recognizing the importance of creating situations in which students may come to play an active role in the construction of their own knowledge.
In several countries (e.g., Finland, Luxembourg, Portugal) research is part of some teacher` training courses (e.g. Kansanen, 2014, Poncelet, Reuter, Kerger, & Bourg, 2009) in order to bring students to recognize the importance of research, and to show them the results of the research conducted. In addition, in contexts of pedagogical practice, these students will have to develop small investigations programmes under the supervision of their Advisor.

However, this is not how the present study suggests the integration of the students in the dynamics of the production of knowledge should be carried out. The intention is to achieve an effective involvement of the students in the work conducted by research teams that are already established, so that they can actually experience the different steps of the work process and reflect on how important they were for the final outcome of such process, on the difficulties they experienced and overcame. These experiences will surely be very valuable for their academic life (and for their motivation as well) and even for their future.

It would also be interesting for teachers' training courses to include a syllabus of ' Initiation to Research ', from the early years of the course, in which students would effectively take part in the dynamics of the production of knowledge and take a real responsibility for the constructing their own knowledge.

We are certain that this would motivate them to improve their academic competences and to develop other skills which are fundamental to enable them to face current challenges. Studies in HEI are in agreement with such inclusion (Cabral, 2017). According to this author (Cabral, 2017), students will go through an intellectual development and they will see their access to knowledge as an active and dynamic process. On the other hand, the teachers will improve academically and professionally as well, as they adopt this attitude of sharing and of constant questioning.

6. Conclusions

In the light of dilemmas or uncertainties that young people face when entering pre-university, the present investigation exposes some relevant evidences that support your dynamic insertion in the production of scientific knowledge to strengthen and motivate progress studies. In particular, the analysis of literature on the subject made it possible to identify some dimensions of the practices that need to be reviewed with a view to addressing the challenges currently facing young people. One of them is to give a greater involvement of students in the production of knowledge through research. It is assumed that, surely, will motivate to continue studies. In this sense, the curriculum and the orientation of the courses of ES should be organized to make students to be producers and not just consumers of knowledge (Cabral, 2017).

In short, integrate the research practice in the teaching and learning process is a means to achieve a more solid education for the young people who join in ES because they confer a greater power and thus prepares them better to face current and future challenges. There are, as well, new challenges to students, greater responsibility for their studies that involve sharing of tasks and decisions with their peers, decision-making and problem-solving situations.

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MAXIMIZING SELF-CONFIDENCE, LINGUISTIC ASSIMILATION AND CULTURAL AWARENESS USING INTERACTIVE EXCHANGES IN THE FRENCH LANGUAGE CLASSROOM

Ana Fonseca Conboy[1] & Joseph Conboy[2]
[1]*Department Languages and Cultures, College of Saint Benedict and Saint John's University (USA)*
[2]*Instituto de Educação, Universidade de Lisboa (Portugal)*

Abstract

Interactive native-speaker exchanges facilitate communication with native speakers of the target language (L2) that mimic the immersion experience and supplement the communicative classroom. The use of video-conferencing tools may enhance aural skills, intercultural awareness and global competence. This interactive presentation will assess the use of *TalkAbroad*™, a proprietary application, as an integral part of the Intermediate French language curriculum and classroom at the College of Saint Benedict and Saint John's University (CSB/SJU), in Saint Joseph, Minnesota, USA. We will present the experience, conducted from January 2016 through May 2017, and discuss its results: how it can engage students, inspire motivation and autonomy and boost linguistic skills and intercultural understanding. We will assess its possibilities and challenges and demonstrate, through data collected, that the use of interactive exchanges in the foreign language classroom enhances language learning. The use of innovative technology, such as the TalkAbroad platform, has proven to impact positively students' perception of confidence levels in the target language, of foreign language learning, and of overall global awareness and intercultural competence. Tools such as TalkAbroad seamlessly integrate the guidelines of the American Council on the Teaching of Foreign Languages (ACTFL) and the skills deemed essential for 21st century learners.

Keywords: *Higher Education, Technology in Teaching and Learning, Global Competence, French Language Learning, Interactive Language Exchange.*

1. Introduction

The American Council on the Teaching of Foreign Languages (ACTFL) has promulgated World-Readiness Standards for Learning Languages (Phillips & Abbott, 2011). These recommendations are grouped in general goal areas known as the "the five C's": Communication, Cultures, Connections, Communities and Comparisons. For instance, students should be able to converse and negotiate meaning in the classroom; their study should include opportunities to compare and reflect on different cultures and create cross-cultural relationships. The standards also specify that multimedia approaches are especially useful in building community relations.

It is generally accepted that relevant face-to-face contact with native speakers of a language will have a positive influence on language learners' global skills and is consistent with the research-based ACTFL standards. However, when personal contact is impossible, can technological substitutes aid students and teachers in attaining those goals? A long history of the use of audio-visual materials is encouraging as to the general pedagogical utility of such devices (O'Rourke & Stickler, 2017). Of particular interest is the technique of video conferencing for language learning.

1.1. Video conferencing

Video conferencing falls into a category of language learning strategies sometimes termed computer assisted language learning (CALL), computer-mediated communication (CMC), and more specifically synchronous computer-mediated communication (SCMC). O'Rourke and Stickler (2017) defined synchronous communication as "dialogic communication that proceeds under conditions of simultaneous presence (co-presence) in a shared communicative space, which may be physical or virtual" (p. 2). Video conferencing clearly falls in this definition. It allows students to practice the foreign language ("L2") skills and modes of communication indicated in the ACTFL standards: It has the

potential to help students learn how to negotiate meaning, and how to assess and evaluate information. In the French foreign language classroom, it also has the potential to facilitate student learning about francophone countries and regions and their cultural customs, practices, and perspectives. Video-conferencing tools permit the integration of technology to enhance learning and use of the language beyond the classroom, in a more authentic setting, which mimic the immersion experience.

The specific applicability and efficacy of modern video-conferencing tools is currently the topic of much research. Jauregi (2016) has noted the connection between these approaches and social constructivist theories of education. Despite the apparent benefits of the approach, some research shows the difficulty in introducing such methods in traditional educational settings (Howard, 2013).

Terhune (2016) reported a study with students learning English as a second language. The students used Skype-based conversation in a "relatively uncontrolled setting". Though motivation is usually considered high for this type of pedagogical intervention, Terhune noted that not all students adapted well to video conferencing. Terhune recommended that future interventions of this type should be more structured with specific tasks and goals.

The limitations of readily available platforms such as Skype has led to the development of pedagogy-specific proprietary software. One such application is TalkAbroad™.

1.2. Project goals

The general purpose of the larger study is to assess the use of TalkAbroad, its possibilities and challenges, in light of the ACTFL standards. In the current paper, our aim is to assess the pilot pedagogical intervention. We will focus attention on some pre-conversation baseline questions: Have students travelled to places where foreign languages are spoken? Have they ever conversed in a foreign language more than ten minutes? How can we characterize the students' levels of confidence as they prepare for the first video conferencing experience? Once the program has begun, we will assess, after each SCMC video conversation, how students perceive their own performance: do they think that they learned anything new about the language and culture of their conversation partner? How does their confidence evolve along the experience? Taking into consideration the recommendations of Terhune (2016), the intervention will be structured with specific tasks for, and assessment of, the students.

2. Methods

2.1. Participants

Students from four different sections of intermediate French participated in the study– two sections in the spring of 2016 (n=17); two in the fall of 2016 (n=20). While 37 students took part in the study, 36 provided complete usable data. Participants were predominantly first-year and second-year students, with varying majors (though no French majors were in the groups). Most students had taken French in high school (anywhere between 1 and 4 years) and were either in their first or second semester of French language at the university level.

2.2. Measures

A pre-conversation questionnaire established baseline information about the students' perceived skills and motivation (sample items: Have you ever conversed with a native speaker for more than 10 minutes? Have you ever visited a country/region in which French is spoken?). After each individual conversation, parallel questionnaires provided information about how each conversation progressed and on the evolution of perceived confidence in understanding and speaking (sample items: I understood most of what my conversation partner said; Overall, the conversation was harder than I anticipated). Most items were answered yes/no or on a six-point scale anchored at the extremes with "Strongly Agree" and "Strongly Disagree".

A scale was constructed with the following four post-conversation items: (a) I felt more confident about my proficiency; (b) My partner understood what I said; (c) I understood what my partner said; (d) The conversation flowed well. The summative combination of these items (α= .84) was operationalized as *post-conversation student confidence.*

2.3. Procedures

Students were informed in advance of the nature of the upcoming pilot project. In-class preparations began two weeks prior to the first conversation, and consisted of a detailed presentation of the program in order to familiarize students with the technology and procedures of the TalkAbroad platform, as well as a short writing assignment whereby students expressed their own learning expectations. Additionally, we collected baseline information in a pre-conversation questionnaire. Four

individual conversations of 30 minutes each were planned during the semester. The students in the two sections in the spring of 2016 conducted four individual conversations, with no restrictions on the partners chosen; in the fall of 2016, in response to student feedback from the previous spring, students had the option of conducting two group (pair) conversations prior to the next two individual conversations, in order to reduce student anxiety associated with the task (again, with no restrictions on the partner chosen). All but three students opted for the combination of pair and individual conversations. Approximately a week prior to each conversation students received an assignment with prompts for the conversation, with topics addressed concomitantly in class. Students had a period of a week to complete each of the four assignments. They were encouraged to meet with a teaching assistant in order to prepare some initial questions and topics for discussion, following the prompts provided. Though not required, most students took advantage of this opportunity. Each individual conversation was recorded so that the content could be accessed for assessment purposes. Conversations were evaluated according to (a) completion of the 30min; (b) addressing all topics assigned; (c) ease and fluidity of conversation, absence of English, overall oral comprehension and correct use of language topics put into practice in class. Short post-conversation writing assignments were required, in order to consolidate material addressed in class before the conversation and practiced during the conversation. After each of the conversations, students were debriefed orally in class and questionnaire information was collected regarding perceptions of how the session went. Data were analyzed with SPSS 24.

3. Results

3.1. Pre-conversation

Table 1 presents the crosstabulation of responses to the pre-conversation questions "Have you ever conversed with a native speaker for more than 10 minutes?" and "Have you ever visited a country/region in which French is spoken?" Considering the marginal values in Table 1, we see that about 44% of students had travelled to a place where French is spoken and fewer than one in five (17%) had had a conversation of more than ten minutes in French. Only one student reported having a ten-minute conversation in French without having travelled to a French-speaking region. The association was tested by Fisher's exact test, and is statistically significant ($p < .05$).

Table 1. Ever visit place where French is spoken BY Ever converse more than ten minutes.

		EVER VISIT?		Total
		NO	YES	
EVER CONVERSE > 10 MIN?	NO	19	11	30
	YES	1	5	6
Total		20	16	36

3.2. Post-conversation

Figure 1 shows average student response to the question "Did you learn at least one new thing related to the language" along conversations 2, 3 and 4. Average agreement increased at each successive conversation ($F_{(2, 58)} = 3.036$, $p = .056$).

Figure 1. Repeated measures: Learned something new in language in conversations 2, 3 and 4.

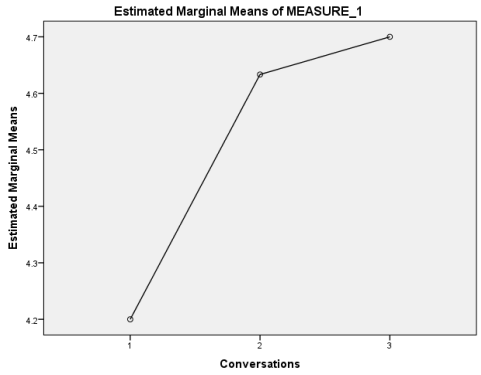


Figure 2. Repeated measures: Learned something new in culture in conversations 2, 3 and 4.

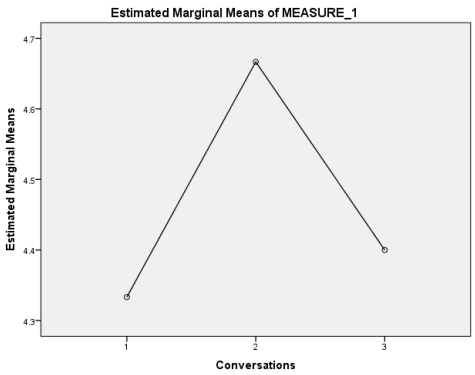
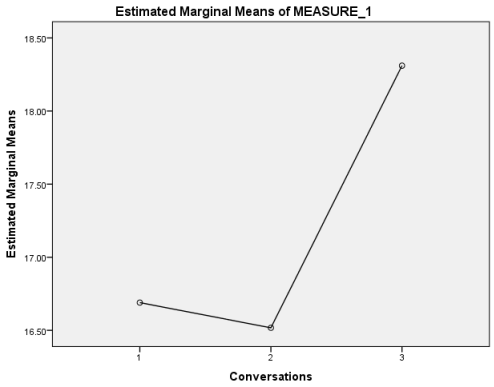


Figure 2 shows average student response to the question "Did you learn at least one new thing related to the culture?" along conversations 2, 3 and 4. An increase in average agreement was observed at conversation 3; average agreement with the item fell at conversation 4. The observed differences were not statistically significant ($F_{(2, 58)} = 0.933$, $p = .408$).

Figure 3 presents the mean post-conversation confidence along the several SCMC conversations. A slight decrease is evident from the initial level. This is then followed by a statistically significant increase in the reported confidence ($F_{(2, 56)} = 4.243$, $p = .019$).

Figure 3. Repeated measures: Post-conversation confidence in conversations 2, 3 and 4.



Finally, we include here some examples of student comments that were made in the context of post-conversation questionnaires and volunteer student testimonials:

(a) "It gave me a lot more confidence in my French speaking [...] prompted me to work harder in the classroom [...] it mimicked a real life scenario." (Student #1, FREN211)

(b) "…it was beneficial for me to step out of my comfort zone and try to converse with native speakers to improve!" (Student #2, FREN211).

4. Discussion

Analysis of the five separate questionnaires, completed over the course of the spring and fall of 2016 semesters, suggests that students' perceived confidence in speaking and listening skills increased with time. Assessment of the oral conversations indicates, as well, that students improved their question-asking skills in L2, which is often neglected in the classroom. Additionally, our analyses suggest that students acknowledge learning specific items of language after each conversation. These elements support the accepted notion that exchanges with native speakers will improve L2 students' global awareness and intercultural competencies and increase oral proficiency levels. Figure 2 shows a slightly surprising decline between conversation 3 and 4. The decline, though not statistically significant, may have been due to the topic of conversation in the assignment. While for conversation 3 students were asked to speak about their aspirations in life and plans for the future, in conversation 4, the topic was broader, with fewer prompts and centered on international relations and globalization. The latter topic is less palpable and personal, and more complex in nature to discuss in L2. It is not unexpected, therefore, that students did not feel as confident about learning something new about their partners' culture, for they may have been too focused on using correct vocabulary and structures related to the difficult topic.

Figure 3 shows a large increase in students' perceived confidence between the second and fourth conversations. While this follows the expected trend, it is interesting that after the third conversation, students reported a slightly lower mean confidence. This may be due to a concurrent decrease in anxiety after the first two conversations. The slight decrease in confidence may also reflect the changed methodology in the fall of 2016: conversation 3 is done individually, while for the majority of students in FREN211, the first two conversations were conducted in pairs. Future analysis may include a comparison between the spring of 2016 and the fall of 2016 groups to confirm or reject this hypothesis. What is important to note, however, is that—regardless of the mode of conducting the exchange, whether individually or in pairs—the students' perceived confidence at the end of the semester is significantly higher than that at the beginning of the semester.

Table 1 demonstrates that students traveling abroad may not be confident enough to communicate in L2, even though they have previously studied L2 in class. Language exchanges such as the one conducted in the French classroom at CSB/SJU have the potential of improving confidence levels and encouraging the use of L2 when students are abroad, rather than reverting to their native English, simply because it is easier.

The main challenges students indicated were (a) having to navigate the time difference with most francophone countries (only Québecois natives were close in time zone), which limited the opportunities to conduct conversations, and (b) technical difficulties with the platform (audiovisual problems, Internet connection, etc.). Neither of these challenges greatly hindered the conversations and students were able to have productive and worthwhile experiences with their different partners. While regional variations were of concern to the teaching staff, students did not complain about the different accents they heard.

Student testimonials illustrate that language exchanges, such as TalkAbroad, have the potential to increase student motivation and engagement, as well as a sense of responsibility and accountability in students, especially when they are asked to collaborate with a classmate to prepare for their group conversations. Exchanges also have the potential of improving student autonomy, as they require students to utilize their time management skills.

We followed the recommendations of Terhune (2016) and included in the program specific tasks and assessment in a structured environment. This structure may have been key in determining the levels of motivation and engagement observed.

In the spring of 2017, more students took part in the project. Future analyses will compare different groups in the different semesters. Moreover, in the spring of 2017, and in response to student feedback provided at the end of the fall of 2016, class time was allotted to conduct mock TalkAbroad conversations before students experienced the real conversations. The student pairs mimicked the conversation they would be having with their TalkAbroad partner, and addressed the questions in the assignments with each other, allowing for a more relaxed setting to converse and practice.

Because of the success of TalkAbroad at the intermediate French level, its use will also be explored in a French and Francophone culture-focused class, and in a French Phonetics course.

5. Conclusion

In conclusion, we can confidently state that out-of-classroom interactive language exchanges using online platforms increase students' perceived confidence in L2, improve their cultural awareness and sensitivity, and global competencies, all the while consolidating linguistic elements addressed in the classroom. They engage the student outside of the classroom, in a more authentic setting. This practice adheres to and integrates ACTFL standards, and places the focus on the learner, allowing for negotiation of meaning, cultivation of collaborative learning, and promotion of a pedagogy that focuses on the whole person, rather than simply on the intellect. Students who have used language exchanges report feeling challenged, but experience a great sense of accomplishment. The authors, and students, recommend the use of such exchanges when possible, not only to complement and enhance in-class communicative language learning, but to develop lifelong skills.

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DESIGN IN CONCRETE AND ABSTRACT LANDSCAPES IN ARCHITECTURAL EDUCATION

Hacer Mutlu Danaci, Elif Çelebi Karakok, Ayşe Şekerci, & Berk Saatci
Faculty of Architecture, Department of Architecture, Akdeniz University (Turkey)

Abstract

The physical and cultural space in which the architectural structure is located has always been influenced throughout history. These concepts are constantly reminded us in contemporary design concepts, such as "genius loci", "cultural environment relations in architecture", "place and space" Through the continuous analysis, synthesis and evaluation scientific study method throughout the education of the architects, students are made to analyze the place where the project will be done. However, it is sometimes difficult for students to use this data. In this study, architecture-culture-environment relations in architecture will be examined and examples will be given on the abstract and concrete designs of architectural students.

Keywords: *Architectural education; architecture; culture, environment.*

1. Introduction

Architecture is the art and the act of building, organizing and organizing the space and the environment in which the functions and activities related to the human life that constitutes it as a society and an individual will take place. It is necessary for an architectural element to integrate with it in order to take place within the touch that exhibits culture (Izgi, 1999). Art and science of designing and constructing art, creativity and other environments with appropriate definitions, structures and physical surroundings in aesthetic creativity by associating necessary spaces with functional and technical possibilities to enable people to live their lives and to carry on their activities like resting, resting, working and enjoying. (Hasol, 1993).

Architecture is related to nature, geography, climate, geology data and values, which affect each other but complement each other and complement each other and the social phenomena and values within the scope of history and culture, socio-economy, production, It is born and varied in a process that is based on (Izgi, 1999).

Every architectural structure is in interaction and communication with its immediate surroundings. Every artifactural artifacts handled on an architectural scale is influenced by the structural and natural tissue in which it is built and shaped accordingly. Every architectural element is part of the landscape it is in.

In architecture education, students are usually given a design problem in a real environment, aimed at a specific need under the name of architectural design course. The student analyzes this project as a real project, analyzes the project site, and searches the subject. It refers to the plans, sections, appearances, perspectives and models that he has designed with the help of his advisor in a certain period of trial-and-error method. The analysis of the land to be projected in architecture and its rehearsal architectural education and the synthesis and reflection of these data are very important. These include both physical and cultural items.

Briefly summarized in terms of architectural-cultural-environment relation historical process and contemporary design approaches in the study. Then, a small trial project study was conducted to observe the effect of the design for the students.

2. Historical process of architecture-culture-environment relations

Text People have always been impressed and influenced by the landscape they are in. First, they built structures to meet their basic needs, which are their housing needs. Spiritual meanings, for example, even in the landscapes they have installed, needed to worship, for example, to meet their needs. As their lives changed and developed and their needs increased, the cultural levels shaped the landscape they were

in and made different places and architectural items that responded to different functions. These architectural elements are an integral part of the landscape at all times and form cultural landscapes. It emphasizes the need for the preservation of ongoing landscapes or the revitalization of new structures called vernacular, according to the definition criteria of cultural landscapes. In this respect, architectural textures in cultural landscapes contribute to the preservation of cultural landscapes in these areas, as they are man-made. This gives us a new clue as to the idea of landscaping and the idea that construction is a whole.

The vernacular architecture has been heavily influenced by building and environment data, materials, and cultivating construction techniques. The place and architecture, even the architectural touch that is found in it all, is a complete and unique place.

3. Architecture-culture-environment in contemporary design concepts

With the increase of communication possibilities, there is an effect of globalization in architecture as it is in every area all over the world. However, the importance of being unique and unique in architecture is mentioned in every period. It is a place with the place in the building (cultural landscape). It affects it and is affected by it.

Many things have changed since the cave era where space and work are the same place. After learning how to shape the material, man has tried to save himself from constantly raising it. The place began to be perceived as an urban space during the Renaissance period.

Structure and location relation began to be interpreted differently in contemporary architecture understanding (Pamir, 2009).

a) The relationship between the design of the building and its place and its reflection on the design, finding and using the traces of the past on the urban texture,

b) detaching the building from the ground, placing it on the artificial platform floors, making it completely independent from the structure of the urban touch,

c) the elevation of the structure on the columns and the continuity of nature,

d) building underground,

e) it is a structural design that can be called as a deconstructivist, which tries to resemble the place and the building.

These different approaches are interpreted differently by architects and arise architectural products.

4. Design in concrete and abstract landscape in architectural education

In architecture, first class is a period where students have recently met with architecture, basic design and analysis. In this period, students are able to make a project of living unit for housing which they can use basic design theories and drawing techniques. It is desirable for the student to design a living unit with a limited volume of residential space by analyzing it on a real ground (life capsule 1). Then, it is desired to create a utopian land and make a residential living unit with limited volume on that land (life capsule 2). While there are environmental and cultural expressions that guide design in the first study, the latter has only utopia and design scenario. For each study, the student was given approximately one month. Figures 1 and 2 show some examples of these projects (Figures 1 and 2).

Figure 1. Life capsule design in concrete landscape, first class architecture students (group 1), 2016.

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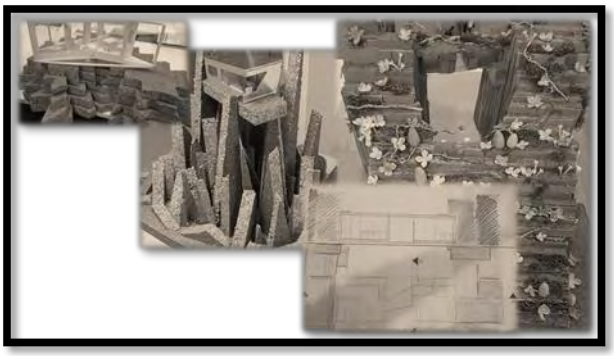
Figure 2. Life capsule design in abstract landscape, first class architecture students (group 1), 2016.



5. Results and Discussion

It has been observed that in the analysis made on the real land in the study (life capsule 1), the students were difficult to do the analysis and could not use this information in their designs in general. At the end of the project criticism made with the consultant, it was observed that most of the students showed improvement in the process.

In the second design made on the utopian land (life capsule 2), it was seen that the land created by the students could not go beyond imitating more real places. It is difficult for the student to adapt to this situation, which is the opposite of the previous one. The number of design examples that can be integrated with utopian land created in the same way is very limited. At the end of the project criticism made with the consultant, it was observed that most of the students showed improvement in the process.

In the second stage, interestingly, the student has searched for a place relationship for the building, and the utopian land he has created has played a role as a driving environmental factor in his construction and as a cultural factor in the project scenario. As a result, when design is the product of a number of environmental inputs it is both easier and more successful.

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STRENGTHENING COMPUTER SCIENCE STUDENTS' ENTREPRENEURIAL SKILLS: A STEP FORWARD

Dimitris Dranidis & Thanos Hatziapostolou
Department of Computer Science, International Faculty of the University of Sheffield, CITY College (Greece)

Abstract

Lately, the number of Computer Science (CS) graduates who find jobs in startup companies or create their own startup company is increasing. It is imperative to enhance the entrepreneurial and enterprise skills of CS graduates towards following this career path. This paper proposes the integration of two units in the 3rd level of the undergraduate studies in order to prepare students to work in a startup company or to launch their own startup. The paper presents the necessary changes for the integration of the two units and discusses the challenges and the benefits for the students.

Keywords: *Startups, Computer Science curriculum, Entrepreneurship, Enterprise skills.*

1. Introduction

The majority of Computer Science (CS) graduates follow a career path as software developers.[1] Some years ago, the most popular career option for CS graduates was to seek employment in an already established software development company that would provide them a secure income in combination with good prospects for skills enhancement and career development. Recently, however, there is an increasing demand of job posts in startup companies and, furthermore, many graduates take the initiative to launch their own startup. Thus, it is needed that CS students are adequately prepared for these new market demands and entrepreneurial endeavours.

There is an increasing number of articles in online press (Woods, 2013), expressing the belief that a CS degree does not guarantee a software development job to graduates and that other skills are required which are not provided by university education: "*Unfortunately most colleges don't provide all of the skills required for a graduate to become a successful software engineer, ... Without a well-stocked Github account, experience in working with teams, and comfort with practices like unit testing and test driven development - processes that allow small startup teams to continually improve their software without lengthy QA cycles - they [CS graduates] will find it hard to get a great job at a startup."* Some of the critiques (Gelernter, 2015) go as far as suggesting that "*The people who were good at the school part of CS just weren't good developers.*" Although such criticism should be interpreted with caution, it is important that CS educators ensure that CS graduates get the best possible preparation for the evolving demands of the market.

The area of focus of this paper is to investigate and to identify means of enhancing the enterprise and entrepreneurial skills of CS students so that they become more prepared in order to start their own business and competitively work in the expanding world of startup companies. The CS curriculum at our institution, the International Faculty of the University of Sheffield (TuoS), includes a unit "Innovation and Entrepreneurship in IT," in which students develop an innovative idea and present it in a pitch, without however the idea being transformed to a minimum viable product. In another unit, the "Industrial Software Project," students enhance their technical and enterprise skills by working on the development of a full product for an external client. Although both units achieve their goals, the former stops at the critical phase of actually developing a product, and in the latter the project is suggested by clients (and not by the students) and this possibly does not fully motivate students to work on the project due to lack of sense of ownership, interest or commitment. The paper proposes how the two units can be combined so that the Entrepreneurship unit could act as the idea generation and business concept development for the product to be implemented in the Industrial Project.

[1] ACM, Computing Degrees and Career, \url{http://computingcareers.acm.org/?page-id=8

The paper is structured as follows: Section 2 presents relevant units from other universities aiming to increase the entrepreneurial skills of graduates towards participating in a startup. Section 3 briefly presents the two units at our institution, proposes how these units can be integrated and discusses the associated challenges and benefits. Finally, the paper closes with some conclusions and discussion.

2. Startup Training in CS Curricula

Based on a table of recurrent themes in software startups (Giardino, Unterkalmsteiner, Paternoster, Gorschek & Abrahamsson 2014), a startup is a small company focusing on highly innovative and uncertain segments of the market, competition and finance and facing an extremely high risk of failure. Since resources in a startup are limited, startups usually rely on external solutions such as open source software. Due to high competition, startups have to release a product or a service rapidly. Another characteristic of startups is that usually the development team consists of recently graduated students with less than 5 years of professional experience. Additionally, according to Åstebro, Bazzazian & Braguinsky (2012), entrepreneurship among recent graduates, initiating a startup, is an increasingly widespread phenomenon, suggesting that universities have to reconsider effective ways of enhancing the entrepreneurial skills of students when designing their policies. They also emphasize how the industrial orientation of the programme and the spirit of entrepreneurship can increase start-up activity even in situations with local resource constraints.

While there are many units worldwide that teach entrepreneurship and innovation, only few of them deal specifically with startup training and not all of them are documented in academic work. In the following we present some of them as reflection publications and the rest as they are presented in publications in the curricula websites.

The Department of Information Technology in University of Turku offers an interdisciplinary unit “Lean Software Startup” (Järvi, Taajamaa & Hyrynsalmi, 2015) for information technology and economics students. The unit is based on the lean startup method (Ries, 2011) and it aims to give to the students a “real-life” experience on the different phases of starting a startup, from the idea formation till the pitch. The unit provides students with knowledge and skills in software business, entrepreneurship, teamwork and the lean startup method.

Pilskalns (2009) reports how an entrepreneurial approach can be incorporated into a capstone project unit in the School of Engineering and Computer Science at Washington State University, and as a result the student engagement is increased. Furthermore, a case of a successful project is reported that attracted venture capital after the completion of the unit. It is interesting to note that out of the 200 papers that were reviewed in a survey about capstone projects (Drugan, 2011) only the paper by Pilskalns (2009) suggests the integration of an entrepreneurial approach to the capstone project unit.

Cornell Tech University offers two units[2] related to startup companies in their MSc in Computer Science. One of them focuses on technical aspects: the “Startup Systems Design and Engineering” unit introduces students to tools, techniques and best practices for the rapid development of prototypes and the facilitation of the deployment of applications, while the second unit, “Startup Ideas”, that focuses more on the enterprise and entrepreneurship aspects of startups, consists of conversations of students with guest practitioners, such as entrepreneurs, intrapreneurs, engineers, designers, lawyers and others. Groups of students prepare questions and topics to be discussed.

Stanford University offers several units about startups. Some of them, such as the “CS183B: How to Start a Startup[3], offer a series of seminars from invited speakers providing practical advice on topics such as: having ideas, getting users, company culture, fundraising, hiring, and more. Others, as for example the “CS183F: Startup School: The First 100 Days”, aim to teach the fundamentals of starting a startup, from the first days of ideas up to the execution. Lectures are again taught by invited experts and entrepreneurs.

3. Enhancing Entrepreneurial Skills in CS curriculum

The undergraduate Computer Science curriculum at the International Faculty of the University of Sheffield includes two units that aim to cultivate students’ enterprise and entrepreneurship skills. The first one is called “Industrial Software Project” (from now on called the Capstone unit) and the second one is called “Innovation & Entrepreneurship in IT” (from now on called the Entrepreneurship unit). Both units

[2]Cornell Tech, Curriculum, Master in CS, https://tech.cornell.edu/programs/masters-programs/master-in-computer-science/curriculum-computer-science

[3]Stanford University, CS183B: How to Start a Startup, https://explorecourses.stanford.edu/search?q=CS183&view=catalog&page=0&filter-coursestatus-Active=on&collapse=&academicYear=20142015

are offered in the final year of studies (one in each semester) as they require higher level of cognitive skills and a strong foundation of knowledge of the Computer Science field. In this section, we briefly present these two units and we propose how they can be integrated in order to further enhance the students' experience and improve their entrepreneurial skills.

3.1. The "Industrial Software Project" unit

The Capstone unit constitutes the main project-based capstone unit of the BSc programme in which external clients are involved. In this unit, students have to design and develop complete software solutions for external clients who come from the industry sectors of Telecommunications, Software Development and Banking. In the last two years, driven by our institution's commitment to social responsibility, focus has been shifted to having non-profit charity organizations as clients in order to support them with innovative software and IT services. Examples of projects and clients can be found at INVENT's website[4].

At the beginning of the unit, students are divided into teams of 4 to 5 persons. Each team is then assigned to work on a project for the duration of the whole academic semester (15 weeks). The first session of the unit includes kick-off meetings with the clients who present details of the projects and the desired software solutions. Students follow an iterative development process for the development of the software. The details of the software development plan are set by the instructor who plays the role of a manager and determines iteration deadlines and required deliverables. Throughout the duration of the project, students are required to record all effort through an online project management tool. At the end of each iteration students receive detailed formative feedback from the instructor regarding their performance and progress. Finally, when the projects are completed at the end of the semester, students demonstrate the final software products to the clients.

3.2. The "Innovation & Entrepreneurship in IT" unit

Creativity, innovation and entrepreneurial skills are considered extremely important in the modern business environment since they can lead to new products/services which are the lifeblood of successful organizations. The IT sector offers a fertile environment for entrepreneurial endeavours capitalizing on the innovative features and the rapid technological developments in the global economy. Computer science students should take advantage of their technical and scientific capabilities and be skillful in innovating through technology. The focus of this unit is to build management, creativity, innovation and entrepreneurial skills among the computer science students, having as basic exercise the new product development process. It is considered an operationally focused unit, as it aims to develop the interdisciplinary skills required for successful product development in today's competitive marketplace.

The assessment of the unit is based on a team assignment. The assignment is an exercise of creating a new company based on an innovative IT-related product or service. Each team of students acts as a team of potential entrepreneurs, building in a stepwise approach a business plan and presenting a blueprint of the potential enterprise to a third party financing audience. The assignment involves the creation of a business concept that addresses a problem/issue in a specific sector/domain (e.g. health, education, transportation) by introducing a new product/service. This new product/service has to be under the broad area of ICT and it can include software, hardware or both.

The execution of the assignment is divided into two stages. During the first stage, every team conducts the "idea generation" and "idea screening" parts of the new product development process. This stage involves several group brainstorming and screening sessions which leads to an idea for an innovative IT-related product or service. During the second stage, the "Business Plan" is developed. Indicative important sections of the Business Plan are the following: Industry and Market analysis, Marketing strategy, Operations plan, Organization plan, and Financial Analysis. The final part of the assessment includes a pitch presentation in which each team gives a presentation to a panel of industry experts and potential investors.

3.3. Proposal: Integrating the two units

The Entrepreneurship unit manages in delivering most of the necessary knowledge and skills to students for the initial steps in starting up a company. However, the idea students develop is never transformed to a minimum viable product or even a prototype. The development of a prototype and its use by actual users in order to get feedback and attract them as customers increases the chances of funding since it convinces investors that customers are willing to buy the new product (Cusumano, 2013). The Capstone unit could offer to students the opportunity to develop working prototypes and to go through

[4]http://invent.citycollege.sheffield.eu/ (This is the web site where Capstone unit projects are presented).

several iterations of customer feedback in order to bring to the pitch presentation a working product of their software idea.

The integration of these two units certainly requires a number of issues to be considered. Concerning the Entrepreneurship unit, the most important change is to require from students to propose ideas that are only in the area of software products or services; the product should not have any hardware parts. The reason is that only such ideas can actually be implemented in the Capstone unit. Fortunately, the majority of the ideas proposed by students are software products and rarely involve some hardware component. Concerning the Capstone unit, the change that is required is a stronger focus on software development practices that are encountered in startup prototype development. According to the results of a systematic mapping study (Paternoster, Giardino, Unterkalmsteiner, Gorschek, & Abrahamsson, 2014) the most viable development processes for startups are agile methods. Since the product is obtained by frequent iterations and updated after customer feedback, processes in startups are evolutionary in nature. Requirements are usually identified as user stories. Popular frameworks, existing components and third-party open source code are frequently used to provide architectural design and implementation solutions. Concerning quality assurance, startups mainly focus on customer acceptance tests and frequently adopt automated testing when it is easily accessible. All these components and practices should be covered at the beginning of the Capstone unit. Some training sessions have to be planned early in the semester in order to familiarise students with these practices.

Another important issue relates with how the units will be delivered. Although a possible solution would be to have the Entrepreneurship unit in the fall semester and the Capstone unit in the spring semester, we suggest that a tighter integration of the two units is required. Therefore, we propose their integration in a year-long unit (spanning two academic semesters). This will allow the interweaving of the development of the prototype into the phases of the business concept development as it can be observed in the following suggested stages:

- Idea generation/Idea Screening and group formation (ENT)
- Concept development: Identification of functionalities and benefits (ENT)
- Customer/Competitor/Industry analysis: Identification of customer profile, product viability (ENT)
- Development of a User Interface Prototype: Feedback from a focus group of clients, prioritization of requirements (CAP)
- Evolutionary development of a Minimum Viable Product: A minimum of three evolutionary iterations with feedback from potential customers (CAP)
- Marketing strategy: Promotion/Distribution/Pricing (ENT)
- Financial Analysis: Cash flow (ENT)
- Organisation plan: Description of the strengths of the management team (ENT)
- Pitch presentation: Demonstration to a panel of experts and potential investors (ENT, CAP)

In the above listing, each of the stages has been tagged with the unit in which it currently belongs to (ENT for Entrepreneurship unit, CAP for Capstone unit). It is clear that it would not be possible to have one unit following the other.

The challenges in integrating the two units are the following: A year-long unit requires constant dedication from the students, as well as, proper management and coordination of all the activities and stages from the lecturers. The formation of the teams is also a critical issue in order to ensure that team collaboration will be smooth throughout the year. In addition, there might be cases that students will be reluctant to reveal a really innovative idea and might prefer to keep it for themselves as something to pursue after graduation. In certain cases, intellectual property issues might also need to be addressed. Furthermore, the feasibility of the idea needs to be carefully examined so that it is possible to develop a minimum viable product within the duration of an academic semester; students must restrict themselves to ideas that are "doable" within the unit. A final challenge can be that although students could have a really innovative and valuable idea for an innovative product or service, they may be skeptical to propose it intimidated by the complexity of its implementation.

The benefits of the integration of the two units can be viewed from three perspectives:

Student engagement. The conception of the projects by the students themselves results in an increased sense of ownership. Students get to develop their own idea and decide the technologies that they are going to use and are not constrained by clients' requirements. This may have as an outcome much stronger motivation and engagement. Finally, it is generally accepted that students who are very oriented towards coding and software development are less interested in theoretical parts of units including business and entrepreneurship. Such an integration will engage also this type of students.

Knowledge and skills. Students will get a complete picture of all the phases that a startup company follows including the agile development of a product. Furthermore, students will get to use

contemporary frameworks, open source third party code and become acquainted with agile development practices.

Future Potential. The development of an actual product might also generate a larger incentive to actually attempt to launch the product after the completion of their studies. In addition, since a tangible product will exist, the chances of getting actual funding are increased.

4. Conclusions

The Computer Science BSc curriculum of the International Faculty of TUoS includes in the 3rd level two units that aim to increase students' enterprise and entrepreneurial skills: the "Industrial Software Project" unit and the "Innovation and Entrepreneurship in IT" unit. The former unit aims to prepare students for their professional career as software developers, working in teams, and developing software for external clients. The latter unit aims to cultivate students' entrepreneurial skills and to equip them with the fundamental knowledge of starting a new company. This paper proposes the integration of the two units in one year-long unit with the principal goal to further enhance the aforementioned skills and knowledge and to better prepare students for working in or for creating their own startup company. The paper presents the challenges as well as the benefits involved in this integration. The benefits are summarised as increased student engagement, increased knowledge and skills acquisition and great potential for a successful startup after graduation.

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CRITICAL MEDIA LITERACY IN COMMUNICATION SPACE OF HISTORICAL FILM EXHIBITION

Jakub Jiřiště[1], Terezie Křížkovská[2], & Adéla Mrázová[2]
[1]*Film Studies Department, Charles University in Prague (Czech Republic)*
[2]*NaFilM: National Film Museum (Czech Republic)*

Abstract

The film medium represents a rarely used source of inspirational impulses for the practical implementation of constructivist learning. Of particular promise is using its dispositions (representative relation to reality, the constructed nature of film images, and meaning-making character) and social scope as the starting point for specific communication within the participative space of a museum exposition. The current approach to the presentation of the medium and its history in film museums lacks a critical perspective and for that reason the educational potential of these institutions is highly limited. While film museums and exhibitions remain out of touch with the current needs of film education they have little to no influence on the development of critical media literacy.

NaFilM, a project initiated by students of the Film Studies Department at Charles University, Prague, aims to create original curatorial approaches to exhibiting the history of the film medium, combining exhibition design with education.

Organized exhibitions function as labs in which are tested possibilities of interaction, activity, association and multi-layered communication with the feedback of various groups of visitors. Currently, systematic methods of constructive communication in historical film expositions are developing within the project. The goal is more strategically use the communicative and constructive aspects of the film medium to curate the overall visitor experience.

Basing the museum's narrative of Czechoslovak modern history not on the authority of historical canon, but rather on the logic and structure of acquiring media literacy, enables the instigation of historically contextualized critical thinking making the visitor a participant of historical reflection. Working from the perspective of reality filtered through the construct of film (applying the codes, conventions and intentional approaches to the medium) we find is a suitable way to understand how particular eras represented themselves.

Thus the visitor is encouraged to learn how to read and perceive history through its images and reflections thanks to the communication allowed through the roles of film as a source which exceeds the conventional use of historical illustration and can be a more encrypted (but paradoxically more immediate) testimony of the era itself.

Keywords: *Media Literacy, critical thinking, film education, museum education, modern history*.

1. Film exposition as a educational construction

While at the present time almost every country with a significant cinematic tradition has its own film museum, this type of institution – if we focus on the expositions themselves without considering supporting activities such as accompanying education programs – has not kept up with the current trends within film education.

Most prominent film museums settle for an overview of technological development and a presentation of thematically framed exhibits with attractive installation design rather emphasising mutual connections (whether they be through a historical context or narrational). The effect is a fragmented experience of the distracted visitor. The first reason for this omission is their uncritical approach to the medium, basing their view of film history on a fetishist concern for the iconic and for the nostalgic aura of the cinematography as a „dream factory“. The second reason is that expositions lack a formative approach to the visitor's cognitive experience and communication, despite limited hints of interaction, is one-way and closed.

However film as a medium, which has through its history taken various communication roles, can itself enrich the actual efforts to engage museum visitors, particularly if the cinema is approached as the complex social phenomenon it is.

The Project NaFilM was initiated by film studies students from Charles University in Prague with the aim to test new curatorial attitudes applicable in film museums and to develop the conception that would make the film museum a functional part of informal film education. We don't see the pedagogical role of the museum as something that goes beyond the presentation in exposition (guided tours, workshops, games in museum). On contrary we approached this role as an integral part of the communication effect of exposition – as a strategical guiding of attention and forming of the overall experience. Two realized exhibitions presented several topics from the history of Czech and worldwide cinema. Each of them was clearly bounded by a predetermined trajectory of the visitor's movement and by a sequential forming of their cognition. These „mininarratives" with an authoritative structure of experience are based on the pedagogical theory of constructivism (a cognition is created by degrees through subsequent impulses). This authoritativeness is balanced by the conception of individual stations as interactive installations which were developed in cooperation with students from artistic field.

2. Examples of constructive communication

An example of the educational dimension of the presentation itself is the topic of pre-war Czech film avant-garde. Due to the main target group (high school students) it was necessary to make this theme accessible through comprehensible condensation to limit intellectual overload. The Czech film avant-garde found inspiration in French theories of „photogénie" (that film purity is based on the ingenious harmony of the light and shadows) and its specific motifs originated in the enchantment with the modern world, in which life itself was transformed into a poetry of train expresses, transoceanic journeys or big cities illuminated by neon. The first installation used a stage design technique which enabled the visitor to conduct a miniature express themselves, exploring through the play of shadow images poetical motifs that were crucial for avant-garde artists.

In the following installation the visitor could build on previously uncounsciously gained knowledge about avant-garde iconography. Situated in an isolated private space, they listen to film libretos of avant-garde poets and at the same time directs their „inner screen" stories using visual motifs of the previous installation. Libretos were intentionally written as a succession of visual evocations – the installation thus functions as lessons from the imagination and the ability to percieve images in associations, so the experience-educational dimension is supported by this unusual way of reception.

The theme of avant-garde ends in a cinema space with a programme of Czech films, whose dramaturgy guides the visitor so that he can understand the already experienced principle of the avant-garde way of thinking: the seeking of a new and more penetrating vision of the world that was also the drive of early educational movies (e. g. The Magic Eye[1] wittily depicting the course of a weekday through microscopic lens).

The other curatorial principle was tested on an exposition of film pre-history. This topic isn't designed as the classical overview of technological preconditions, its motif is represented by the illusion of motion (whose basic principles are demonstrated on a specially designed multifunctional 3d zoetrope) and the train – the symbol of the modern era and the first „film star" as well. This way the contextual background and implicit connections are employed in the exhibition – the train was an essential source of visual energy for the imperfect invention of cinema and thanks to its moving images became an exciting attraction.

The position of early projections in the context of fairground experiences is presented through the incorporation of new technologies. A film lecturer materialized by a 3D hologram accompanies early films with shocking themes (e. g. an approaching train) and intensifies the suspense of the public as replicating a common practice in early cinemas. VR goggles enable visitors to experience one of the first simulations linking movies shot from locomotives with the physically illusive setting of fake train carriages.[2] The train provides also the symbolic end of the exposition through a collage of famous railway scenes shot by avant-garde filmmakers in the 1920s. They returned to this motif to demonstrate that the dynamical film rhythm already had overcome the power of the steam engine. This simple condensation helps visitors to comprehend at first sight the development of the film language that the earliest films lacked.

[1]The Magic Eye (Divotvorné oko), 1939, director: Jiří Lehovec.
[2]This ancestor of contemporary virtual reality was called Hale's tours of the world. The tranhistorical use of VR googles is based on reconstruction of this popular attraction from beginnings of the 20th century.

3. Critical thinking and history reflection(s)

The communication concepts presented were created rather intuitively without any methodical framework. But now the aims of the project have entered into the phase of methodical revision and the new ways of communication based on dispositions of the film medium are being explored. Their use within the communication interface has the potential to motivate the interactive-experiential mode as a higher form of activity – critical thinking. A film museum whose narrative is based not on the authoritative exposition of history but on the logic of acquiring critical media literacy would be, especially in the Czech context, a significant support for strongly transmisive high-school teaching which affects mainly the subject of modern history.

The cinema as a social phenomenon can serve as a formable device mirroring the last century and in the museum its role needn't be limited to a mere illustration of historical events. Film can function as a narrative filter if the representative relation of film to reality and the simulation of its changing communication roles could is utilized. Czechoslovak history offers many of them: cinema helps to reinforce ideologically the identity of the new and artificially created state (1920-30s), serves the needs of totalitarian regimes and its explicit (1950s) and implicit (1970-80s) social engineering, and participates in political liberalization and revision (1960s).

The key to our communication approach is to let history itself become a narrator – through its own depictions of specific periods, intentional or unwitting. The visitor can then be encouraged to look behind this filter in open confrontation of these images with their own constructive nature (based on codes and conventions) and competing representations. The problem of objective view of history and how to approach it through representations and constructs brings meta-narrative dimension into the story of 20th century, that is the most appropriate starting point for engagement of the visitor.

This way three educational functions are fulfilled: to provide in a constructive way an awareness about film history as primarily social phenomena, to enable visitors to discover the mediating and meaning-making role of the medium (critical thinking in historical connections) and, finally, to allow a transformation, in which historical presentation changes to historical reflection thanks to the facilitative work of museum communication.

The communication interface using all three functions is presently developing in the interdisciplinary realm of film studies and history didactics. As a prototype of communicational schema the period of Stalinism was chosen because of the ideologically explicit and socially appellative function of the cinema and socialist realism codes. The case study will be accessible in text and virtual form next year at websites of the project NaFilM.

References

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