

# VestibaTV – An Interactive Program for Vestibular Training

André Felipe Palmeira      Marcelo Fernandes de Sousa      Tatiana Aires Tavares  
Digital Video Applications Lab (LAVID) Digital Video Applications Lab (LAVID) Digital Video Applications Lab (LAVID)  
Federal University of Paraiba      Federal University of Paraiba      Federal University of Paraiba  
Computer Science Department      Computer Science Department      Information Science Department  
+55 83 3216 7093      +55 83 3216 7093      +55 83 3216 7093

[andre@lavid.ufpb.br](mailto:andre@lavid.ufpb.br)

[marcelo@lavid.ufpb.br](mailto:marcelo@lavid.ufpb.br)

[tatiana@lavid.ufpb.br](mailto:tatiana@lavid.ufpb.br)

Ricardo Mendes C. Segundo  
Digital Video Applications Lab (LAVID)

Federal University of Paraiba  
Computer Science Department  
+55 83 3216 7093

[ricardo@lavid.ufpb.br](mailto:ricardo@lavid.ufpb.br)

Guido Lemos de Souza Filho  
Digital Video Applications Lab (LAVID)

Federal University of Paraiba  
Computer Science Department  
+55 83 3216 7093

[guido@lavid.ufpb.br](mailto:guido@lavid.ufpb.br)

## ABSTRACT

In this paper, we discuss our experience of developing an interactive TV program for training people to vestibular. Many social organizations consider the vestibular model a barrier to public further education access in Brazil. One way to better the participation of people from underprivileged classes can be creating and offering preparatory t-learning courses taking advantage of TV range in Brazil.

## Categories and Subject Descriptors

D.4.7 [Organization and Design]: Interactive systems

## General Terms

Design, Experimentation, Human Factors.

## Keywords

Interactivity, Digital TV, Social Aspects of Software.

## 1. INTRODUCTION

Digital technologies have opened new directions for experimentation in the field of Learning – in order to facilitate its. The use of digital technologies can reach social groups which have no access to traditional forms of Education. Using new mechanisms of Education we can go where people are, for example, using a TV we can go inside people homes (Collete, 2001) [1]. In Brazil, according to *Eletrobras* research, 97.1% of the households have a television, but, according to IBGE, only 20% of them have computers with Internet access [4]. So, one of these technologies that has a powerful mode to reach people is the **Interactive TV** (iTV), which combines Internet and TV through the *t-learning* applications.

The term t-learning comes from the convergence between iTV and Internet e-learning techniques. But this new technology has its own specific characteristics, for instance, a low screen resolution, the use of a simple remote control to interact with programs and the decreased number of features in a set-top box compared to a computer [5]. Another motivation for t-learning is the problematic of the access to universities in Brazil by the

poorest social classes. Researches show that in Sao Paulo, for example, 85% of students are in the secondary school, but only 20% of them are approved by the FUVEST vestibular (University Foundation for Vestibular) [2]. Many social organizations consider the vestibular model a barrier to public further education access for these classes. Besides, there are specialized schools that train students to pass the vestibular examination, using classes and simulation tests. But this kind of school is very expensive and mostly accessible by the higher classes of the population. Other way to better the participation in the vestibular examinations can be creating and offering preparatory t-learning courses which can be accessible for anyone who has a TV set at home (the majority of Brazilian population), consequently enabling digital and social inclusion.

In this paper we present a t-learning application for vestibular training that we called VestibaTV. VestibaTV was developed in the context of BEACON project and it aims to achieve some features as: (a) using an accessible language to juvenile audience; (b) presenting interactivity contents; (c) improving simulation exercises and, (d) developing topics of awareness and citizenship for the students and the community at all [3][5]. In addition, we are proposing an architecture for cross media content based on VestibaTV results.

## 2. VestibaTV ITV PROGRAM

In this section we briefly describe the main models developed to VestibaTV. First we present the user needs, the main functionalities and the user interface for the ITV program. Besides, we discuss the proposed architecture for VestibaTV cross media content.

### 2.1 User Needs and Functionalities

Figure 1 shows the use case model for VestibaTV. Note that the use cases for the *student* actor were implemented by the interactive TV program. The *teacher* use cases are being included to the cross media approach. Regarding that we are working with users from underprivileged social classes and the simplicity is one of the most important features of the application. We have to offer something easy to use that can attract the attention of the user without disincentive them.

The main offered features are: (1) **Video content:** the video content has to use a simple language and to show situations of daily life where the student can see their own reality; (2) **Tips:** while the video is exhibited an icon indicating the possibility of interaction appears several times. When clicked, a tip with information about the topic addressed in the video appears in textual to fix the concepts presented during the video; (3) **Vestibular Simulated:** when the video ends, the viewer is invited to start a vestibular simulated. This is a review mechanism where vestibular questions and four answer alternatives are showed to viewers. If the viewer chooses the correct alternative, additional information regarding the issue will be displayed along with the congratulations. Otherwise, the correct answer is presented to the viewer.

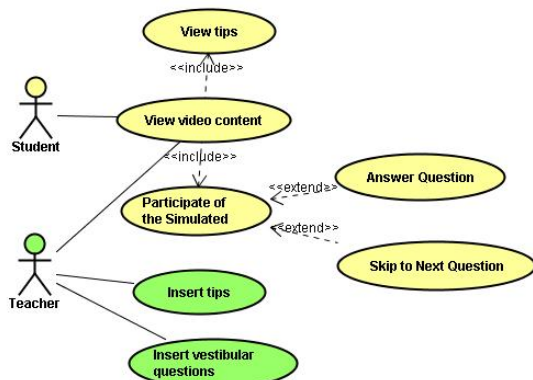


Figure 1 – Use Case Diagram for VestibaTV.

## 2.2 User Interface

VestibaTV interface is very friendly and intuitive. All the interactivity is navigable by the color buttons (red, green, blue and yellow) of the TV remote control. For guiding the users during the interaction we use a friendly owl figure.

For example, Figure 2 shows the user interface of the VestibaTV simulated. Note the presence of the application guide (the little owl) and the color buttons for interacting with the application. VestibaTV was developed in Ginga-NCL and it is running in a Preview receptor with Ginga-Ready.

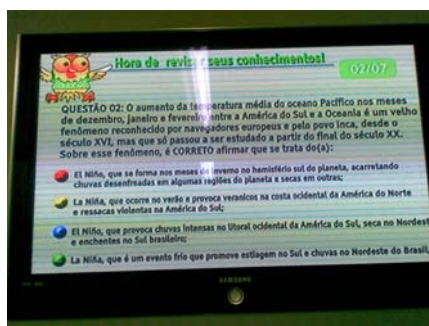


Figure 2 – VestibaTV Simulated User Interface

## 2.3 Proposal Architecture

Figure 3 shows the proposed architecture for interactive applications involving the Web Server, the TV Station, the PC

and the Set-Top Box. The communication between the Web Server and the PC occurs by a bidirectional form, through uploads (including updates) and downloads. We have the teacher profile where teacher could submit new content to the server. At the other hand, we have the user profile where students are allowed to download the video content and the applications (Web Server) to their home PCs. Besides, students can download applications on removable disks (Pendrive) and execute them in the STB USB input. The applications can be downloaded directly from the IP network connection without user mediation. Finally, we have communication between the TV Station and the STB, which is made through a diffusion channel.

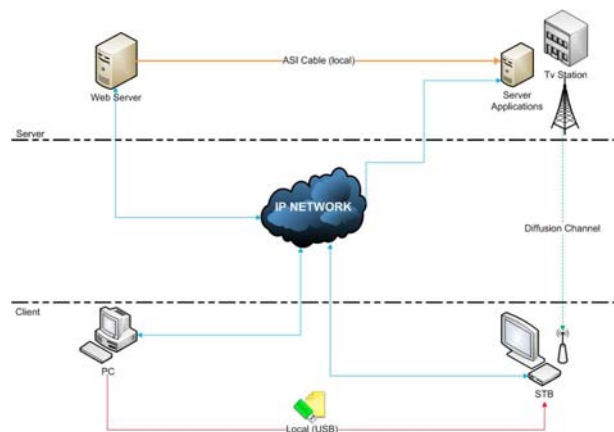


Figure 3 – Communication Diagram

## 3. CONCLUSIONS

In this article, we presented a t-learning application for vestibular training in Brazil, as well as, the proposal architecture to a cross media model for Digital TV and Web applications. We believe that the t-learning can be the suitable medium to foster an inclusive society by supporting strategies to combat social exclusion, inequalities and the discrimination of different representations of social values.

## 4. ACKNOWLEDGMENTS

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## 5. REFERENCES

- [1] Lytras, M., Lougos, C., Chozos, P., and Pouloudi, A., 2002. Interactive Television and e-learning convergence: examining the potential of t-learning. Available online: <http://www.eltrun.aueb.gr/papers/tlearning.pdf>.
- [2] MITRULIS, E.; PENIN, S. T. S. Pré-vestibulares alternativos: da igualdade à equidade. Cadernos de Pesquisa, São Paulo, v. 36, n. 128, p. 269-298, maio/ago. 2006.
- [3] BEACON – Brazilian-European Consortium for DTT Services. <http://www.beacon-dtt.com/en/index.php>.
- [4] Eletrobrás/Procel - <http://www.eletronbras.gov.br>
- [5] Rey-Lopez, M., Diaz-Redondo, R., Fernandez-Vilas, A., and Pazos-Arias, J. 2007. Entercation: engaging viewers in education through TV. ACM Entertaint. Vol. 5, No. 2, Article 7.
- [6] BEACON UFPB – [www.lavid.ufpb.br/beacon](http://www.lavid.ufpb.br/beacon)