



# An Online Counseling Platform for a Mexican University

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## ABSTRACT

The primary purpose of higher education is to provide an adequate setting for students to optimally perform and grow both professionally and personally. First year students, however, sometimes go through a series of often difficult personal and academic adjustments that can contribute to poor academic performance or even desertion. Assisting first-year students, therefore, through effective counseling and tutoring practices represents an important tool to help improve educational achievement during what is often the most difficult transition period of future professionals. This paper describes an open source system for online counseling and tutoring that is designed to access and provide timely and accurate information, increase and optimize contact time, provide communication tools to facilitate interaction between professors and their tutees and assist in the administration and tracking of students.

## 1. INTRODUCTION

Academic counseling and tutoring programs have traditionally played an important role in lowering student desertion and improving academic performance. Ineffective programs, however, can lead to students making uninformed or incorrect academic choices, thus contributing to lower academic performance or even desertion (Soulsby, 1999; Simpson, 2005; Kuittinen, et. al., 2001).

In Mexico, first-year students often require greater attention because of factors related to the academic environment (particularly increased academic demands) or maturation (i.e. socialization, personal responsibility, identity and acceptance issues, etc.). Personal and economic problems are also common among many students.

Effective contact time is extremely important to create the professional and affective bonds necessary for students to better cope during their first year of studies. Unfortunately, excessive student-teacher ratios and schedule conflicts sometimes limit the amount and quality of interaction. A survey conducted at several local Puerto Rican universities, Navarro et al (2000) discovered that these two factors accounted for 75% of students who chose not to employ academic counseling services.

Because of their many different roles (instructor, administrator, researcher, author, etc.) college professors sometimes do not have the time required to access information in more traditional forms. Efficient access to student personal information and academic records, as well as making administrative procedures more efficient and producing required reports is of vital importance to the counselor-tutor (CT). Additionally, the extra time required to access information manually increases the frequency of errors and decreases the effective time spent with students. Consequently, information management is important as it can minimize errors related to incomplete or faulty information (Coles, 1999).

This paper, in Section 2, discusses the specific context and characteristics of Mexican CT programs as it provides background educational statistics and defines the terms “counseling” and “tutoring.” Section 3

then provides some of the most important considerations that motivated the development of the online counseling-tutorial system and Section 4 provides a system description. Following this, Section 5 offers a brief description of system requirements, and finally, sections 6 and 7 will then provide conclusions and future work, respectively.

## 2. SPECIFIC CONTEXT

Two of the most significant problems facing higher education in Mexico are high dropout rates and low academic achievement. In response to these problems, common to many educational settings, the National Association of Universities and Institutions for Higher Learning (ANUIES, in Spanish) has established a national program to provide personalized counseling to students who are enrolled in all of the country’s public colleges and universities as part of its strategic planning for 2000 to 2006 (Ceballos & Romero, 2005).

The counseling-tutorial programs of Mexican universities are important in light of the following statistics compiled by Mexico’s National Institute of Geography, Statistics and Informatics (INEGI, in Spanish):

- The average Mexican goes to school for 7.7 years
- 10% of the population has no formal education
- 18% of children do not complete elementary school
- 43% of 16-year olds do not go to school
- Only 47% of persons between the ages of 16 and 19 go to school
- Only 17% of persons between the ages of 20 and 24 are enrolled in school (INEGI, 2000)

In the specific case of Mexico, full-time college and university professors are required to provide 10 hours per week of personalized, one-on-one interaction with students, consisting of academic and personal counseling and tutoring related to specific course content and study skills, including how to prepare to learn, how to employ different learning skills, time management, critical thinking, decision making, test preparation, reading and speaking skills, etc. Consequently, professors must meet the dual demands of an academic counselor-advisor and a study assistant, which according to McPherson and Baptista (2005), citing many different authors, includes coach, leader, tutor, moderator, facilitator, motivator, mentor and mediator, among others. The relationship is personal in that the intent of the program is to establish the much deeper and affective personal and academic relationship necessary to accompany students throughout their studies (González et. al., 2002).

In the Mexican context however, the terms “counseling” and “tutoring” sometimes overlap. In general terms, however, the term “counseling” refers to both academic and personal counseling. In other words, counseling can be defined as “a system of relationships and processes designed to help people make choices and solve problems” (George & Cristiani, 1995).

The term “tutoring” refers to a “specialized kind of instruction that structures itself according to the individual needs and understanding of

students" (Legaspi & Sison, 2002). However, in the Mexican context, tutoring provides remedial attention that covers curricular content and reinforces academic skills such as memorization, concentration, study habits, academic writing skills, test preparation, etc.

### 3. MOTIVATIONS FOR DEVELOPING THE ONLINE COUNSELING SYSTEM

Student participation in the tutorial programs of the Universidad de Colima has been less than desired, and this apparently holds true for other Mexican universities (UNAM, 2001). Although a concerted effort has been made to invite students to participate voluntarily, their participation has been limited due to different aspects related to traditional face-to-face sessions. Traditional counseling, however, presents some disadvantages, including:

1. **Scheduling and attendance.** Due to multiple commitments, both students and professors have problems scheduling conflicts that result in excessive cancellation of sessions.
2. **The nature of face-to-face Communication.** More introverted or private personalities sometimes find face-to-face communication uncomfortable and these students find impersonal means of communication preferable.
3. **Privacy.** Students sometimes feel they cannot express themselves because professors must often share spaces.
4. **Transportation and time.** Because most students come from low-income families and have no private transportation, the additional cost of transportation and commuting time discourages students from participating.

To address some of the shortcomings related to traditional face-to-face counseling, the University of Colima has developed an online counseling platform to facilitate and complement the counseling process. The platform, called "SiMiTuL" in Spanish, employs the University's local access network, providing students the following advantages:

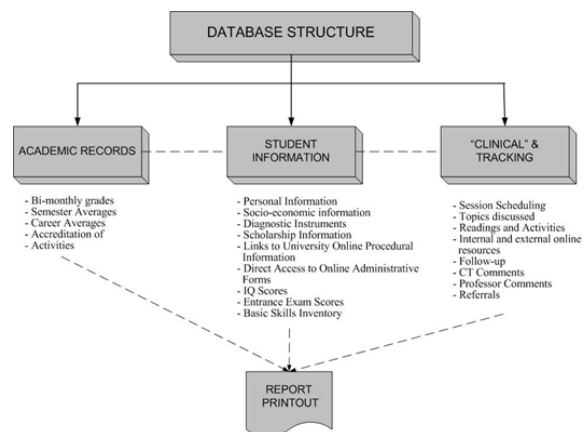
1. **Anonymity and privacy.** The platform permits affords students the degree of privacy many of them desire and affords a variety of communicative options (chats, discussion groups, private messaging etc.).
2. **Money and time.** Because students can communicate remotely from a variety of locations, thus saving money and time required to transport themselves from one place to another.
3. **Attendance and participation.** A survey of students at the College of Telematics reveals that they recognize the advantages afforded by computer mediated communication and would be more likely to participate if afforded this option.
4. **Communication.** A variety of types of communication promotes greater interaction among a greater number of participants as they can select the manner in which they interact with their tutors and among themselves in peer tutoring situations, which are currently not available.

### 4. SYSTEM DESCRIPTION

The online counseling platform integrates the databases and online communication tools needed to administer access and disseminate information between the CTs and their students. The online system is designed to tie into the student academic records database to provide tutors with accurate and up-to-date "read only" information related to a student academic history. The system also creates an additional online database to register any additional data, including personal information, test battery results, session topics, observations made by the CT, referrals, etc. The system also saves administrative time as it can print out different required reports. Figure 1 presents a basic schematic of the database and its contents.

The student personal screen shown in Figure 2 contains a number of features to encourage students to use it as their homepage. First of all, it includes a calendar where students can solicit and then program personal sessions with their tutor. The color-coded calendar also

Figure 1. Database structure



reminds students of different events and meetings. A menu above the calendar provides student access to online files they can download using FTP, different forums, or group and private chats.

The help section at the upper right hand corner provides assistance to students who require assistance in using the system or have questions about the counseling-tutorial process. The actual date is posted above the calendar which is also represented on the calendar. The bottom of the page includes online sites and a specific link to the University web page, where students can obtain administrative or academic information.

Finally, the calendar display can be either forwarded or reversed so that the students may keep track of their past sessions or view/record future commitments.

Figures 3 and 4 show the Administrator System Calendar and the Assignment and Resource Management Console, respectively. The system administrator can program meetings with individual or specific groups CTs or students as well add or eliminate students or CTs. The system administrator can change CT-student assignments, which were previously determined alphabetically and numerically by default. The

Figure 2. Student personal screen



Figure 3. Administrator system calendar

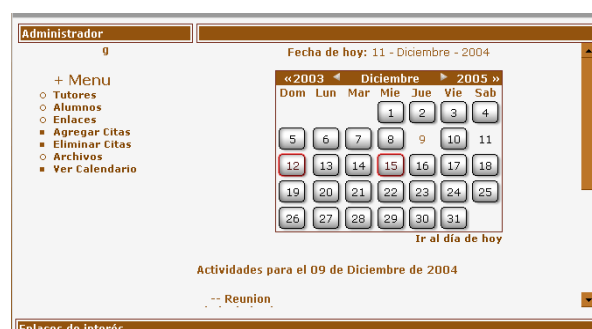


Figure 4. Assignment and resource management console

Administrador					
+ Menu					
o Tutores					
o Alumnos					
■ Insertar alumno					
■ Insertar lista					
■ Asignar tutores					
■ Mostrar alumnos					
■ Eliminar alumnos					
o Enlaces					
■ Agregar Citas					
■ Eliminar Citas					
o Archivos					
■ Ver Calendario					
		Nº Cuenta	Nombre	Sem Y Gpa	Tutor
		20028260	AGUIRRE RINCON EFRAIN	5A	Arthur Edwards Block
		999737	ALCARAZ BAUTISTA MARCO ALBERTO	5A	Arthur Edwards Block
		996237	ALCARAZ CEJA VICTOR ULISES	5B	Arthur Edwards Block
		20028274	ALCARAZ CESAR LOERA JULIO	5B	Arthur Edwards Block
		20028259	ARIAS RIOS OSCAR ALBERTO	5A	Arthur Edwards Block
		991534	ARMENTA FELIX MERCEDES CELINA	5B	Carlos Flores
		999590	BARRETO PALACIOS GERARDO	5A	Carlos Flores
		20028270	BENAVIDES ARAIZA DANIEL	5B	Carlos Flores
		986750	CARDENAS BLANCAS ADOLFO	5B	Carlos Flores

system administrator can also upload files to be shared by FTP, establish forums or chats, send messages to individuals or groups and add links to provide additional support.

Figure 5 shows the tutor follow up screen where individual tutors can add or eliminate individual sessions, which will automatically be reflected by the student calendar in Figure 1. Individual tutors can also call up a student's academic records and view a preliminary analysis to help prepare the tutor before a planned session or provide information required during an actual interview.

## 5. SYSTEM REQUIREMENTS

Technologically speaking, the SiMiTuL online counseling-tutoring platform works as a client-server and is open source. We used Apache Server, PHP and MySQL to develop the platform, which requires only 50 MB of hard disk space and 128 MB of RAM. The primary advantages of the system include:

- 1) Infrastructure: The system does not require extensive infrastructure as any desktop computer can be configured as a server. It presently functions on both traditional and wireless networks.
- 2) Diversity: The platform is compatible with both the Windows, Unix, and Linux operating systems.
- 3) Cost: The cost of development, installation, and implementation are low because the development tools used are available free of charge on the Internet. The installation does not require any additional or special hardware or software and the implementation process is simple in already existing LAN networks.

These three considerations can be particularly important in developing countries where both human and material resources are often more limited.

Figure 5. Tutor follow-up screen

Tutor			
Omar Álvarez Cárdenas		+ Seguimiento	
+ Menu		Nombre	Seguimiento
■ Agregar Citas		OLVERA TORRES ESPERANZA JEANETTE	Bajar   Subir
■ Eliminar Citas		OROZCO CONTRERAS EBER EMMANUEL	Bajar   Subir
■ Analisis		MOLINA SANCHEZ ANA LUISA	Bajar   Subir
o Seguimiento		PALACIOS RAMIREZ LILIANA NOEMI	Bajar   Subir
o Archivos		PEREZ GUZMAN HECTOR DANIEL	Bajar   Subir
■ Ver Calendario			

## 6. CONCLUSIONS

Providing students with the opportunity to reach their personal and professional growth and contribute to their ultimate success is one of the primary goals of any college education. If good educational and counseling practices converge with the efficient and well-planned use of technological resources, universities may, in the future, expand the parameters that define traditional educational practices, concentrating on humanizing education — not only producing capable professionals, but persons who are more able to live and contribute to an increasingly more complex society

## 7. FUTURE WORK

The open source information system for online counseling and tutoring is to undergo further development and tests during the spring, 2006 semester to determine factors such as usability, including user satisfaction (administrator, tutors and tutees). A performance evaluation and other technical tests will also be carried out. Upon concluding the pilot phase, we hope to introduce the system in the spring, 2006 semester and again evaluate it on usability, user satisfaction and performance, plus begin longitudinal studies to determine what effects (if any) the system has on variables such as contact time, session cancellations, participation rates, satisfaction with the tutorial process, student performance, first-year student desertion rates and ultimately, graduation rates.

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