

# ICTs as Innovative Tools in the University Teaching: The Case of the Escuela de Literatura y Ciencias del Lenguaje at the Universidad Nacional

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## Abstract

The current university systems demands that teachers adapt and implement their teaching processes to encourage the proper use of technology resources. These technological tools help teachers and learners make effective group work, promote social activities, exchange ideas, have a quick access to information, encourage student-teacher interactions in real time and get access to forums, chats, Web 2.0, among others. This new vision helps teachers interact with their students, plan effective lessons and design learning environments with the use of the communication tools currently available. The innovative combination of technology and the use of traditional and communicative teaching techniques of a particular subject matter will encourage teachers to change their traditional ways of teaching using just lectures, practical classes, and seminars, among others. Through this new perspective, the teacher becomes a facilitator and a guide, and the student will assume a more active role in their learning process. The aim of this paper is to analyze how the teachers at Escuela de Literatura y Ciencias del Lenguaje at the Universidad Nacional integrate ICTs into their teaching processes. A questionnaire will be used to get teachers' experiences in the use or the lack of usage of the ICTs. Finally, some updated trainings on the use of technology resources will be recommended to all those teachers who do not use them in the classroom activities, and the exchange of ideas by those who use them will be taken into account to promote class planning and interactive activities as part of their teaching strategies.

**Key words:** learning process, teaching, ICT, innovative technological resources

## Resumen

Los sistemas universitarios actuales exigen que los profesores adapten e implementen en sus procesos de enseñanza el buen uso de los recursos tecnológicos. Estas herramientas tecnológicas ayudan a los maestros y a los alumnos a hacer un trabajo en grupo efectivo, promover actividades sociales, intercambiar ideas, tener un acceso rápido a la información, fomentar la interacción alumno-profesor en tiempo real y tener acceso a los foros, chats y Web 2.0, entre otros. Esta nueva visión ayuda a los profesores a interactuar con sus estudiantes, a planear clases efectivas y a diseñar entornos de aprendizaje con el uso de las herramientas de comunicación disponibles en la actualidad. La combinación innovadora de tecnología y el uso de técnicas tradicionales de enseñanza y de comunicación de un tema en particular motivarán a los profesores a cambiar las formas tradicionales de enseñanza que utilizan, tales como conferencias, clases prácticas y seminarios. Por medio de esta nueva perspectiva, el profesor se convierte en un facilitador y un guía, y el estudiante asumirá un papel más activo en su proceso de aprendizaje. El objetivo de este trabajo es analizar cómo los profesores de la Escuela de Literatura y Ciencias del Lenguaje en la Universidad Nacional, en Costa Rica, integran las TIC en sus procesos de enseñanza. Se utilizó un cuestionario para conocer las experiencias de los profesores en el uso o la falta de uso de las TIC y, por último, se recomiendan algunas capacitaciones actualizadas sobre el uso de estos recursos tecnológicos a todos aquellos profesores que no las utilizan en las actividades del aula; además, el intercambio de ideas por parte de quienes las utilizan se toma en cuenta para promover la planificación de clases y actividades interactivas como parte de sus estrategias de enseñanza.

**Palabras claves:** proceso de aprendizaje, enseñanza, TIC , recursos tecnológicos innovadores

## Introduction

Since the World Conference on Higher Education in the XXI Century, held in Paris in October 1998, it was noted that Information and Communication Technologies (ICTs) would change the ways of knowledge production, acquisition and transmission, and that such technologies would open new possibilities to modernize the course contents, teaching methods and to broaden the access to Higher Education. In this new context, it is proposed that Higher Education institutions should take advantage of the potential of these technological tools, and keep the quality of education through the development of educational activities using them (UNESCO, 1998).

Some contemporary educational demands that have teachers from these organizations integrate ICTs tools and materials to facilitate students' learning, to develop skills and different ways of teaching and learning, with the purpose of implementing a learning process with the proper handling of the media (Codejón,

2009). However, to encourage and promote the use and application of ICTs in the educational processes is a challenge, since they provide a number of advantages for the students and the teachers. They also allow the teachers to find innovative techniques to stimulate student's motivation and improve learning by using multimedia, hypertext and other interactive systems, and choosing ICTs as teaching resources that best suit the different areas of students' knowledge.

Besides, several studies, such as those from Aguirre and Ruiz (2012), explain that one of the great advantages generated by the integration of ICTs in education is the need for new teaching practices and in-depth reflection on how students build knowledge. These implementations in education are required by the university education in the XXI century which is so complex and requires teaching strategies to facilitate students' performance in the classroom (Ospina and Zapata, 2009).

As Salinas (2004) exposes, integrating ICTs in the university needs specific commitment from the teachers and the institution. Teachers must understand the capacity and potential of transformation that these technologies have to effectively support learning in different curriculum areas. Also, they should know the appropriate teaching strategies for using them effectively, and the institution, on the other hand, must help them with adequate infrastructure, access to hardware and software, connectivity and technical support.

### **ICTs in Higher Education: remarkable benefits**

There are many benefits that are granted to the use of ICTs in higher education contexts since they are tools that enhance the quality of the educational process, allow overcoming barriers of space and time, increase communication and interaction between faculty and students, and activate participation in the process of collective construction of knowledge and skill development. Also, with these new technologies both, the students and the teachers, have the possibility of greater interactions with students and teachers from other programs, institutions, and places; both nationally and internationally Salinas (1999).

The use of ICTs in the university classrooms opens the possibility of improving the teaching practices, and building knowledge by using updated contents and materials as well as the access to more information and resources that are available to change learning into a collective and participatory experience where everyone can make contributions to learning, skills management, partnership and conceptualization that goes beyond the mere acquisition of knowledge (Moran and Myringer, 1999).

### **Integrating ICTs into Teaching and learning processes**

Higher education institutions must develop better ways to use ICTs in their teaching and learning if they want to meet the needs of today's society.

Furthermore, the role of teachers changes in an environment where ICTs are integrated, as they start acting as guides for their students, and facilitate the use of these tools for the exploration and development of new knowledge and skills. This is because both teachers' roles and changes in the institution, are strongly related, and if the ICTs affect the forms of teaching in the universities, then the role of teachers is affected, too (Salinas, 2004).

Besides, Cabero (1997) mentioned that the introduction of ICTs in the educational context necessarily needs that teachers have favorable attitudes and an appropriate training for incorporating them into their professional practice. In this process, they can assume different positions such as: develop critical mechanisms of the Media: Technophile, do not use technology because they believe that they are problem for society: Technophobia, find difficult to use, or fear and grief to receive training because they are considered unable in front of the students, or use the ICTs and make the best out of them, assuming the change according with the requirements and expectations of the classroom and the institution itself.

However, with the use of ICTs, the higher education systems have the challenge of questioning and re-thinking their principles, objectives and their teaching methods in order to achieve all the demands of the new society and students.

### **The teacher's competencies in the digital age**

This technological innovation in Higher Education institutions requires, therefore, a new teacher's profile. It is also important to consider the large number of students and educational situations that teachers needed to take advantage of the resources available through ICTs. But to integrate and use ICTs efficiently and effectively the educators need good training in the use of these technological tools in teaching, and good knowledge and use of the professional services provided by the Internet to facilitate learning (Marques, 2000).

In fact, in several studies carried out by Cabero (1996) and Marques (2000), the ICTs skills that teachers should develop can be summarized as knowing: how to use ICTs in many personal and work activities, their use in education and in specific areas where they work. Besides, teachers must take advantage of the use of text editors, email, web browsing, WEB 2.0, mobile phones, forums, social networks, the development of Web pages in their classrooms, and get into the habit of planning their lessons integrating ICTs as teaching tools.

The epistemological structures of each discipline require different ways of working with ICTs, and different forms of constructing and representing knowledge in the classroom. These new resources will contribute to improve common methodologies in the classroom and may represent an important support in a teaching approach based on collaboration and sharing experiences with other peers, students' interaction with Web based materials, and in designing exercises which require the students to find relevant information in the Internet.

## **ICTs in the classroom**

There is no doubt that when students are in contact with ICTs, they benefit from teachers' use of these tools in the teaching and learning processes. Students require educational activities related to the use, selection, and organization of information. Activities such as research projects in the Internet, the creation of a Website or personal tests stimulate the students' creativity and motivation to learn. For Mason (1998), the use of NCTs in education brings new insights into better teaching processes that are supported by technological environments, and common strategies of classroom instruction that are adapted to new forms of learning.

## **ICTs at Universidad Nacional de Costa Rica (UNA)**

Immediately after the World Conference on Higher Education (1998) in the year 2002, the Consejo Nacional de Rectores (CONARE) requested the vice-rectors from the four public universities in Costa Rica to analyze the impact and possibilities in using ICTs in our Higher Education systems. This information was included in the report given by the Programa Sociedad de la Información y el Conocimiento from the University of Costa Rica (PROSIC), which is referred as "Hacia la Sociedad de la Información y el Conocimiento en Costa Rica 2007" (Herrera, 2008).

In 2002, UNA incorporated the ICTs in the academic teaching by means of the Resolution No. 2150, which was extended by its Consejo Universitario. Consequently, a new program was created (PRODAPA) for the Development and Application of New Technologies in the Academic Process, which afterwards was named NOVUS. This program resulted from a diagnosis of the integration of ICTs in teaching, investigation and the extension processes, and opened a window for the design of policies and strategies in education and ICTs. It focused on the weaknesses that professors showed in the use of these technological tools. Since then, they have evolved up to the conformation of UNA Interactiva, which is the main institutional effort for the integration of the ICTs in the academy.

Today, UNA has a wide experience in the successful implementation of actions to incorporate the new technologies in teaching. Some excellent examples are the Maestría en Administración Tecnológica (MATI), Maestría en Tecnología e Informática Educativa (MATIE), and Maestría en Salud Integral y Movimiento Humano (MSIMHU) which are pioneers in the virtual modality. In a short term, UNA plans to extend the virtual and bimodal modality to four of its campuses outside the metropolitan area: Liberia, Nicoya, Pérez Zeledón and Corredores.

In the last five years, UNA has undertaken actions under the protection of a consistent frame of institutional policies, which seek to appeal to professors and students' understanding about the importance and opportunities that ICTs offer to raise the quality of the teaching methodology, research and social action. Today, UNA has included ICTs in different courses, levels and subject matters (Herrera, 2008).

## Analysis

A questionnaire technique was used to collect the information from the academic staff at the Escuela de Literatura y Ciencias del Lenguaje, which allowed a detailed analysis of the various issues on the use and integration of ICTS in the university teaching. The questions included in this instrument were the same for all the teachers, which were selected according to the criteria established by the investigators and the general objective of this research. The 25 questionnaires were handed in personally to each of the selected (surveyed) teachers, and eighteen of them were answered (See annex No. 1), to know about different aspects related to the professor's training and knowledge about ICTs, as well as their pedagogical implementation in the classroom settings.

According to the answers given about general information, most of the teachers live in Heredia, have a master's degree and have been teaching for more than three years. Besides, all of them have attended some kind of training and see the necessity of being updated with the modern trends in education. Nevertheless, a great majority have not attended any formal session in most of the programs that the university offers. They also mentioned the importance of using ICTs in our public universities and how these technologies can improve the students' performance in each course, and some of them (8 participants) said that it has helped them a little.

Sixteen informants reported to have desktop computer, land line, cell phone, laptop, cable T.V., IPOD or MP/4, Play Station, Palm, hand held, T.V./DVD, hard disk, Internet access and to use email frequently. They know how to use them; however, they are only used at home to interact with relatives, friends or coworkers, or to plan examination tests. They do not see computer devices, internet web sites as well as emails as useful and innovative tools that can make their classes and students' learning easier and effective.

Most of them (10) informed that their main place to use internet is their homes or work places, and fourteen of the participants said that they use Browsers, chat, Virtual Educational Processes (forums, E-line courses, and others), E-mail checking, E-Commerce, services payment, entertainment, among others. Yet, activities that are close related to the classes such as videos, forums, and interactive activities in line are not part of the professor's curriculum. And nine professors indicated that they sometimes take into account technological tools to be part of their curriculum.

Certainly, professors are not attending any of the trainings because the schedule available for these courses does not take into account their time to attend the sessions. They are not encouraged to attend sessions as part of their training time during the week, and the number of participants is so limited that just a reduced and selected group is allowed to attend the course. Moreover, in the last three years, there is a total absence of training and a total ignorance of updated and innovative programs to teach in a university level, and they have not received any feedback after attending some trainings in the use of ICTs in the university teaching.



Seven professors believe that the shift towards ICTs opened new doors to more experimental and challenging classroom and home activities because students will have the opportunity to develop their creativity and interest toward attractive topics to be developed in the class. As well, half of the participants use technological tools in their classes to plan several exercises, investigate about different subjects, participate in forums, and support students' oral expositions. Unfortunately, the other half of the participants did not answer.

Eleven of the participants did not answer the question about their level and domain of operating systems such as Windows 98, 2000, XP, Vista, Windows 7, Linux, and others. As a result of the lack of knowledge of these tools, professors don't integrate them in their lesson planning and assignments for the students. Twelve of the participants in the study did not give any answer to the question about sharing their applications or learning sessions with other coworkers. Finally, most of them believe that classes become less traditional, and topics are developed with the use of diverse resources such as videos, audio exercises, or images in a more creative way. Also, students became more collaborative, motivated, and interested in problem-solving activities as well as in communicating and analyzing situations when the teachers use ICTs in the lessons.

Certainly, all those questions give a clear view of the professors' lack of knowledge about the ICTs and the reduced number of professors who implement technological tools in their teaching strategies and curriculum.

## Conclusion

Public universities require the implementation of new and innovative ways to transform their traditional teaching method to a more interactive and challenging one. One of the answers to this total transformation is the use of the ICTs in the curriculum. This goal can be achieved if universities develop formal and organized policies to make their professors attend training sessions related with the usage of technological tools in the classroom. However, this policy should be followed by a series of changes in the perception professors have about the ICTs use. In the analysis of the questionnaire answered by the professors, it was evident that there are some negative factors that can become obstacles to achieve this goal:

- Professors do not perceive training courses related to technological tools as relevant or necessary to plan their lessons or to be included in their curriculum.
- They don't see the sessions as part of their constant training to improve as professionals and facilitators.
- Professors' schedule and time available is not taken into account when trainings are not planned; consequently, professors are not interested in skipping classes or moving their daily activities.

- Most of the interviewed professors do not know about basic programs; that's why, they don't implement them in their lesson planning.
- Students are not encouraged by those professors to be innovative in their own learning process. They are totally task-oriented; that's why, their capacity to research, analyze and produce is not developed.
- Professors are not receiving any feedback after they attend ICTs trainings in the university teaching. It can be a weakness that can affect the UNA training programs since trainers do not monitor if professors implement that knowledge in their classroom activities.
- Those who are trained do not transmit their knowledge about ICTs to their coworkers. Consequently, just a few professors know how to use them; it limits the reach of this plan and its benefits towards the majority.

Some effective ways to achieve public universities main goal to make professors use ICTs in their classroom activities are:

- Universities should bring suitable schedules to allow professors to attend training sessions in their free time or meeting sessions. This way, all the available resources can be used in class activities and university activities. However, Bingimlas indicated that educational technological materials may be available in schools, but teachers cannot use them because of a lack of pedagogical or skills-related (practical) training in how to use these ICT resources (Barriers to the Successful Integration of ICT in teaching and Learning Environments: A Review of the Literature, 242). Consequently, to promote ICT training among professors must be the norm in universities.
- Faculties and schools must encourage professors to attend training sessions as a condition to hire them. They must make professors understand that changes in educational programs are necessary in today's world. Fullan (1991) found that one of the most fundamental problems in education reform is that people do not have a clear and coherent sense of the reasons for educational change, what it is and how to proceed. To motivate professor will be profitable in terms of professor- students' learning and intellectual development.
- Classroom activities that include technological tools must be required as part of the professor's curriculum and lesson planning. The coordinators must monitor the implementation of those tools in tasks and projects.
- Two or three trainings must be included in the professor' activities during the year. Teachers must be aware of their necessity to be updated. However, once they have finished their initial training, they do not expect to need much further training. Therefore do not take the initiative to improve their practice and learn new skills (Cox, Preston and Cox, 1999,1). This limited view of training can be reverted if professors incorporate activities that help transform their classes and teaching strategies.



- University campaigns to promote the importance of the use of ICTs in the classroom activities may make professors understand their role as facilitators who guide students in their search of knowledge. This way, students become active participants of their own learning process and builders of their knowledge.
- Some technological tools will give professors the opportunity to transform their traditional classes to goal-oriented ones. The use of blogs, WEB 2.0, Skippy, and even the Cell phones in the classrooms will incorporate innovative and challenging teaching activities that will make the students be in a close contact with an exceptional number of possibilities to learn. Through the use of these technological tools, the lesson becomes into a laboratory where discoveries and challenges gathered to explore unknown territories.
- Finally, knowledge must be transmitted by those who attend those ICT's trainings, and in this way, each faculty will face this new challenge with a group of trainers who will spread the desire to go beyond the paper and the marker and move to the use of technological tools and programs, which at the same time are the tools professors must use with their students to make them competitive to face this new technological world.

Those suggestions are possible to achieve; but it is just a matter of commitment and desire to change the way professors have been working for last decades. The implementation and acceptance of these suggestions will bring benefits to the students and their future professional life.

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## ANNEX 1

Universidad Nacional  
Escuela de Literatura y Ciencias del Lenguaje  
Profs.: M.L. Ginneth Pizarro Chacón  
M.A. Damaris Cordero Badilla

### **La integración de las Tecnologías de la Información y la Comunicación (TIC) y otras herramientas tecnológicas en la docencia universitaria**

*Estimado(a) Docente:*

Con el objetivo de valorar la incorporación de las tecnologías de información en los procesos de enseñanza y aprendizaje en la Escuela de Literatura y Ciencias del Lenguaje de la Sede de la Universidad Nacional en Heredia, se le solicita respetuosamente su colaboración para responder el presente cuestionario. La información que brinde es anónima y confidencial, y de antemano le agradecemos su valiosa ayuda.

#### **Parte A: Información General**

1. Lugar de Residencia durante ciclo lectivo:

- A) San José B) Alajuela C) Heredia D) Cartago  
E) Guanacaste F) Puntarenas G) Limón

2. Preparación Académica (Último Grado Obtenido):

- A) Doctorado    B) Maestría    C) Licenciatura  
 D) Bachillerato    E) Diplomado

3. Años cumplidos de experiencia en docencia universitaria: \_\_\_\_\_

4. Horas de capacitación en docencia universitaria recibidas a la fecha:

- A) de 0 a 40 horas    B) de 41 a 80 horas    C) de 81 a 120 horas  
 D) de 121 a 160 horas    E) de 161 a 200 horas    F) más de 200 horas

5. ¿En qué áreas de las Tecnologías de Información y de la Comunicación (TIC) ha recibido capacitación? (INDÍQUELAS, POR FAVOR)

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6. ¿Considera que la capacitación que ha recibido le ha ayudado a planificar e impartir mejor sus clases?

- A) Mucho    B) Poco    C) Nada

7. ¿Cuáles de los siguientes dispositivos tiene en su hogar? (Marque con una X en la casilla que corresponda, según sea el caso)

Dispositivos	TIENE	NO TIENE
1. Computadora de escritorio		
2. Teléfono fijo		
3. Teléfono celular		
4. Computadora portátil		
5. Televisión por cable		
6. Ipod, o MP3-4, PlayStation, entre otros.		
7. Algún dispositivo móvil (Palm, HandHeld, entre otros.)		
8. TV / DVD		
9. Dispositivo de almacenamiento masivo (Disco duro externo)		
10. Otro(s) (Especifique):		

**Parte B: Internet**

8. ¿Tiene acceso a Internet desde su casa?

A) Sí

B) No. ¿Por qué? \_\_\_\_\_  
(PASE A LA PREGUNTA 12)

¿Hace uso del correo electrónico?

A) Sí

B) No. ¿Por qué? \_\_\_\_\_  
(PASE A LA PREGUNTA 14)

9. ¿En qué lugares tiene acceso a Internet? (Marque con una X, según sea el caso)

<b>Lugar de Acceso</b>	<b>TIENE ACCESO</b>	<b>NO TIENE ACCESO</b>
1. Casa		
2. Lugar de trabajo		
3. Internet café		
4. Otro (Especifique)		
5. Otro (Especifique)		

10. De la siguiente lista, ¿cuáles medios tecnológicos utiliza normalmente? (Marque con una "X", según sea el caso)

	<b>MEDIOS</b>	<b>LO USA</b>	<b>NO LO USA</b>
Búsqueda de información			
Chat			
Procesos de educación virtual (foros, cursos en línea, entre otros)			
Revisión de correo electrónico			
Comercio electrónico (compras, pago de servicios, entre otros)			
Entretenimiento			
Otro (Especifique)			
Otro (Especifique)			

11. ¿Cuánto tiempo se conecta a Internet por semana?

A) Menos de 2 horas

B) de 3 a 5 horas

C) de 6 a 9 horas

D) Más de 10 horas

12. De acuerdo con su experiencia y formación, ¿cómo considera su nivel de conocimiento, respecto del uso general de las TIC?

- A) Muy bueno    B) Bueno    C) Regular    D) Malo

**Parte C:** Uso Pedagógico de las Tecnologías de Información y de la Comunicación y otras herramientas tecnológicas

13. ¿Considera que el uso de las TIC en la enseñanza es importante?

- A) Sí    B) No

(Justifique brevemente su respuesta)

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14. ¿Cuáles de las siguientes actitudes presentan sus estudiantes, cuando utiliza las TIC en sus cursos? (Marque con una “X”, según sea el caso. Puede marcar varias opciones).

- Responsabilidad
- Dedicación
- Compromiso
- Motivación
- Trabajo en equipo
- Esfuerzo
- Falta de interés
- Indisciplina
- Ausentismo
- Disponibilidad
- Otro (ESPECIFIQUE) \_\_\_\_\_

15. ¿Cuándo planifica su trabajo en el aula, toma en cuenta la existencia de los apoyos tecnológicos que existen en la institución y los procesos de capacitación que ha recibido en materia del uso de las TIC aplicadas a la docencia?

- A) Siempre    B) A veces    C) Nunca

16. ¿En los últimos tres años (2009-2011), cuántos cursos de capacitación recibió en el uso de las TIC en la docencia universitaria en la Universidad Nacional de Costa Rica?

- A) 5 cursos o más    B) 4 cursos    C) 3 cursos    E) 2 cursos  
F) 1 curso    D) No recibí capacitación al respecto en ese período

(PASE A LA PREGUNTA No. 27)

17. Indique el número de capacitaciones recibidas en el uso de las TIC en la docencia universitaria en otra(s) Institución/instituciones, en los últimos tres años (2009-2011): \_\_\_\_\_

18. ¿Hubo algún tipo de seguimiento y articulación entre las capacitaciones recibidas en el uso de las TIC en la docencia universitaria?

A) Sí    B) A veces    C) No  
(Justifique brevemente su respuesta)

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19. ¿Considera que debe darse seguimiento a los procesos de capacitación para que el aprendizaje adquirido pueda utilizarse en beneficio del desarrollo y uso de las tecnologías en el aula?

A) Sí    B) No  
(Justifique brevemente su respuesta)

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20. ¿Cree que la capacitación que recibió ha incidido positivamente en el desempeño académico de sus estudiantes?

A) Sí    B) No  
(Justifique brevemente su respuesta)

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21. ¿Utiliza las TIC u otras herramientas tecnológicas en los cursos que imparte?

A) Sí. ¿De qué forma?  
B) No. (FINALIZA EL CUESTIONARIO. GRACIAS POR SU COLABORACIÓN)

22. Indique el número de cursos en los que utiliza TIC u otras herramientas tecnológicas.

A) En todos    B) En tres    C) En dos    D) En uno



23. Indique el tipo de actividades que ha desarrollado en sus lecciones con el apoyo de las Tecnologías de Información y de la Comunicación (Marque con una X, según sea el caso. Puede marcar varias opciones).

- Presentaciones multimedia
- Sesiones de aprendizaje con Internet grupales
- Sesiones de aprendizaje con Internet individuales
- Uso de Internet para apoyar la exposición magistral
- Sesiones de aprendizaje con Internet para la utilización de foros
- Correo electrónico
- Blogs
- Wikis
- Otro(s) (ESPECIFIQUE) \_\_\_\_\_

24. Califique su conocimiento y dominio de los siguientes sistemas operativos, según corresponda:

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1 = No tengo conocimiento  
 2 = Bajo  
 3 = Medio  
 4 = Avanzado

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Sistema operativo	1	2	3	4
Windows 98				
Windows 2000				
Windows XP				
Windows Vista				
Windows 7				
Linux				
Otros (Especifique):				

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25. ¿Cuáles de los siguientes medios o recursos utiliza en el aula con sus estudiantes?

Objetivo de uso	LO USA	NO LO USA
Computadora(s) de escritorio		
Computadora(s) portátil(es)		
Proyector multimedia		
Pizarra electrónica		
Cámara digital		
Televisor–DVD–VHS		
Internet		
PowerPoint, Excel, Word, Publisher		

Enciclopedias digitales

Sesiones de aprendizaje (Aplicaciones de software) ya desarrolladas para que el estudiante las utilice

Otro (Especifique)

Otro (Especifique)

Otro (Especifique)

26. ¿Acostumbra compartir las aplicaciones o sesiones de aprendizaje desarrolladas por usted con otros compañeros docentes de esta Sede?

A) Sí    B) No

(Justifique brevemente su respuesta)

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27. ¿Qué ha cambiado en los cursos que imparte debido al uso de las TIC en sus cursos?


28. ¿Qué ha cambiado en sus estudiantes debido al uso de las TIC en sus cursos?
