Innovation at university teaching by incorporating Information and Communication Technologies: an educational proposal to assess ICT Competence for Education (CIE)

YASBLEY SEGOVIA CIFUENTES
DARWIN ANDRÉS DÍAZ GÓMEZ
Center of Technologies for the Academy
Universidad de La Sabana
Puente del Común Campus Km. 7, Autopista Norte de Bogotá Chía, Cundinamarca
COLOMBIA
hasblady.segovia@unisabana.edu.co, hasblady.segovia@unisabana.edu.co,
darwin.diaz@unisabana.edu.co, darandigo@gmail.com
http://www.unisabana.edu.co

Abstract: The training of university teachers and its connection with the use of Information and Communication Technologies (ICTs) in teaching and learning process es provide an opportunity for formal education institutions to offer guidelines and processes that make it possible to support pedagogical activities through the use of ICTs. This article aims to present a proposal to assess the use of ICTs in the teaching practices of post-secondary education teachers. More specifically, it mentions the development of ICT Competence for Education (CIE from its Spanish initials), namely, the ability to appropriate, integrate and innovate the teaching and learning practices that take place in the formal education context. The assessment of CIE proposes evaluating the four standards related with the use, integration, promotion and innovation of ICTs, besides providing some indicators for the achievement of every standard proposed. As a result of this process, an institutional regulation for the diagnosis and development of this competence was provided, together with the generation of a teachers training plan whose aim is based on innovating practice by teachers through the use of ICTs with a critical and pedagogical approach.

Key words: Competence, ICT Competence, Standards, Indicators, ICTs, teacher training, educational innovation, competence- based assessment

1 Introduction

Training university teachers and the commitment of educational institutions to promote and implement strategies that favor teaching and learning processes have become more and more necessary in institutional educational plans.

With the intention of favoring teacher training, ICTs have become a sensible way to promote practices mediated by virtual learning settings and to optimize the use of technological resources in teaching processes.

International proposals related with the use of ICT competences for teachers [1] as well as other proposals recognized at country level and locally, contribute to the attainment of goals involving the use and implementation of educational practices whose aim is to improve educational quality.

As a result of the proposals defined at international and national level, higher education institutions have become optimal settings to develop and propose action plans related with the development of ICT competences among the teachers in those institutions. Hence, ICTs turn into resources supporting both teaching and research [2].

However, through the formulation of institutional plans related with the development of ICT competences, it is important to highlight that some factors related with the training of teachers, whether personal, institutional or educational must be considered. [3]

In this line, facing the opportunity to favor teacher training and considering personal features, institutional goals as well as the development of ICT competences, Universidad de La Sabana, Colombia, proposed the development of the ICT Competence for Education as “a tool to improve academic quality […] and the generation of new dynamics and contexts that favor teaching and learning processes”(p.3). [4]

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2 The concept of "competence" and development of ICT competences

Within the framework of teacher training policies, the subject of ICT competences is present in national and international institutional agendas. In this sense, Universidad de La Sabana considers that competences involve demonstrating *actions and performance* by people, in this case, by teachers.

Hence, it is convenient to approach the meaning of competences and their implication in the design of institutional guidelines and policies.

2.1 Characterization of the concept of competence

Due to the different interpretations and meanings associated with the concept of competence, provided by the use and context from which it is approached, it appears as a polysemic concept.

It is not surprising that the inclusion of this term in the educational setting originated from a tradition which is distant from it. Furthermore, in our case, this competence is contextualized in the educational setting, more specifically in the formal context of higher education.

In this sense, it is worth highlighting at least two points of view on the concept within the framework of school-related activities as such.

On the one hand, competences in the school context help to "identify, select, characterize and organize school learning that makes educational intentions concrete" (p.9) [5]. In this respect, competences turn out to be a strategy for the curricular organization of educational institutions.

On the other hand, for the same author, the concept of competence "introduces important and novel nuances to the way we understand what kind of learning is expected in school education" (p.10). Hence, besides being a way to provide structure to the curriculum, competences make it possible to understand and to guide the learning that has been achieved through the different learning activities that take place in a person's training.

For Universidad de La Sabana [6], competences are defined as "the set of abilities a person is capable of demonstrating through actions and performance, in particular conditions or contexts" (p. 18).

The Colombian Ministry of Education (MEN) [7] defines competence as "the set of knowledge, skills, attitudes, understanding and cognitive, socio-affective and psycho-motor abilities properly related amongst them in order to facilitate flexible, efficient and sensible performance of an activity in relatively new and challenging contexts" (s.p.)

Likewise, [8] "competences are a combination of attributes, abilities and attitudes that typify the exercise of a profession and allow for an integral education. They must be developed throughout the process of students' training by means of the application of different dynamics. Students must not only have a specific ability, but they also must know how to apply it" (p.163).

In this sense, competence [9] is taken as an ability that turns into a moment of literacy in order to understand, to use something and to make sense of it. In this case, the integration of ICTs into the different contexts where educational practices take place turns into a process of literacy, appropriation and use of such technologies.

In consequence, we may state that a competence is a human capacity in which several attitudinal and procedural elements converge in order to attain some personal and institutional goals.

2.2 The development of ICT competences in teacher training

In 2008 [1], ICT competence standards were defined for teachers. This proposal was framed within a political context of reforms and changes in education which intended to offer a view of education in terms of basic notions on ICT, deeper studies and the generation of knowledge.

With respect to basic notions on ICT, teacher training was focused on ICT training with the intention of training learners to support social and economic development by means of ICTs. Regarding the pedagogical aspect, the intention was to integrate ICTs to solve complex problems and to attain a process of self-management.

As a result of the above, the policy related with basic ICT notions intended to attain basic knowledge, to integrate ICTs with a pedagogical sense, to make use of basic tools and to provide the bases for digital literacy in teacher training.

On the other hand, another proposal for the development of standards [10] aims for teachers to facilitate learning and creativity of students, the design and development of learning experiences, work and learning in the digital era, education for digital citizenship, professional growth and leadership.

Other experiences related with the development of ICT competences among teachers have to do with standards in information and communication technology for the initial training of teachers [11].

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In this proposal, standards were organized into areas, such as: Pedagogical, technical or instrumental, management, social, ethic and legal, developmental and professional responsibility. Some standards were defined for every area.

At national level [12], the National Program for Educational Innovation through the use of ICTs was proposed, which defined a path for ICT pedagogical appropriation in the professional development of the university teacher.

The axes of the proposal to incorporate ICTs in education were based on use and appropriation, access to content and access to technology. In the case of university teacher training, the path was focused on the use and appropriation of ICTs. The intention was for teachers to appropriate technological resources and to formulate use strategies for ICTs, as "a way to consolidate processes of educational innovation" (p.5). Hence, the teacher training process involved the following: a sensitization phase, and an inclusion phase.

According to the proposal [12], the aim of reaching innovation went through two ways of understanding; first, the promotion of an innovative teacher who made use of ICTs and second, the proposals of dedicated and creative work by teachers.

However, by 2013 [7], a new proposal for the development of ICTs Competences for teachers' professional development is made. Once the time of use and the appropriation of ICTs in teaching and learning processes had elapsed, the framework of reference for national policy focused on educational innovation and on the role ICTs play on that innovation. Questions like What and how do students learn through ICTs? What is the sense of learning? , among others, come up as part of the challenges faced by teachers.

In consideration of the above, the competences proposed by MEN are the following: Technological competence, communicative competence, pedagogical competence, managerial competence and research competence. At the same time, the scope of these competences is defined by the levels of competence called moments: Exploration, integration and innovation.

With regard to the proposals suggested, it is worth highlighting that the process of teacher training with respect to ICTs is a fundamental and ever present aspect in educational policies at international and national level.

The path covered shows a base historic line that has involved the use, integration and now the achievement of innovation through ICTs at the different educational contexts. In other words, we have come from an instrumental look at ICTs, to an educational innovation view on ICTs.

3 ICT Competence for Education

Starting from the different national and international proposals on ICT teacher training, the proposal presented in this article highlighted the following aspects, considered as highly relevant at the theoretical and practical level:

° Teacher training for the integration of ICTs is not a purely instrumental training process.

° Starting off from national and international proposals, the vision of the university is to prepare our own proposal for the institution in the light of our mission and vision with respect to teaching practice and the development of ICT competences for performance in the educational setting.

° The preparation of the proposal was focused on Competence for the development of ICT Competence for Education (CIE).

° The proposal for ICT training for teachers is a dynamic and personalized process, according to individual needs and the characteristics of educational activities.

° The pedagogical, innovative sense of the proposal expands the instrumental approach to ICTs at institutions.

° The generation of an institutional culture with regard to the integration of ICTs as the center in the achievement of educational quality and excellence.

° Accompaniment to education in the development of ICT Competence for Education is fundamental for the achievement of educational innovation at the institution mediated by ICTs.

° Finally, developing ICT Competence for Education is a requirement to be upgraded at the institution teachers' ranking.

In consequence, Universidad de La Sabana defines ICT Competence for Education (CIE) as "the capacity of a teacher to appropriate, integrate and innovate Information and Communication Technologies (ICT) in his/her academic activity, aiming for a critical and ethical use of these technologies (p.5)" [4].

According to the definition of ICT competence for education, the final goal is educational innovation through ICTs.

In this sense, innovation becomes not only a process to re-think the educational practices teachers apply in their teaching and learning activities, but also, the participation of students becomes necessary in the process of integrating ICTs.

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Therefore, the responsibility of teachers goes beyond the mere use of technological resources; it involves reflecting on their responsibility to update themselves according to the needs of the academic context [13].

Considering the above, appropriating ICTs, besides institutional intentions, personal educational effort and individual work are important factors in the use, appropriation and implementation of technological resources and pedagogical aids. In this regard, the new educational paradigm based on competence education requires and demands institutionalized and systematic pedagogical training. [14]

In this sense, the pedagogical sense of using technological resources makes up a substantial part in the development of ICT Competence for Education.

Another element to take into account in ICT Competence for Education is the integration and innovation of ICTs in the academic work of teachers. For Universidad de La Sabana, educational innovation is a process of planning teachers follow starting from a *follow-up*, *feedback* and *assessment* of teaching and learning processes by making use of ICTs.

ICT mediated educational innovation turns pedagogical activity into a practice of permanent reflection and action on the products of knowledge provided by students. [4]

For Universidad de La Sabana, innovation is understood as a process that integrates technological resources through time, but which focuses on the importance of pedagogical sense. Beyond technological infrastructure, the reason for proposing the development of ICT Competence for Education (CIE) is to strengthen practice taking into account the techno-pedagogical design of academic activities. [15]

For the Colombian Ministry of Education [7], ICT mediated educational innovation involves teachers building innovative settings by adequately integrating ICTs so that students articulate the contents with the objectives proposed in order to attain the expected levels of learning.

In view of the above, educational innovation turns into a process that does not start with a change in technological resources, but which starts with permanent reflection on the pedagogical intention of *what for* and *how* of the integration of ICTs in the curriculum.

The last aspect to consider in the development of ICT Competence for Education (CIE) has to do with the critical and ethical use of ICTs.

Using technologies in educational practice is not enough. It is convenient to think about the use some resources will have and the way in which they will be used.

Thinking about *how teaching and learning take place; what is taught and how it is learned* [16] through ICTs is highly important, especially when the following aspects are taken into account: Respect for copyright, not affecting others through digital media, the responsible use of technological resources, among others.

In short, it is about educating responsible and ethical digital citizens in all forms of action; a vision that underlies the development of the ICT Competence for Education (CIE) among teachers in the educational institution.

3.1 Construction of the proposal for ICT Competence for Education

The proposal for the development of the ICT Competence for Education (CIE) was made by the Technologies Center for the Academy (CTA from its Spanish initials) at Universidad de La Sabana.

This center is “an academic unit promoting the integration of Information and Communication Technologies to educational and organizational processes through research, implementation and development of integrated face-to-face and/or virtual education and training strategies aimed to solve academic and business needs” (Taken from:http://www.unisabana.edu.co/unidades/cta/centro-tecnologias-academia-nosotros/)

The final proposal for assessing CIE experienced three moments in the process of consolidation and final approval by the institution: Reflection and conceptual foundation, designing the instrument to assess ICT Competence for Education and the approval of institutional guidelines.

3.1.1 Institutional reflection and conceptual foundation to integrate ICTs

Starting from the literature review at national and international levels, reflection focused on the following aspects that were considered for the proposal for evaluation, accompaniment and assessment of the ICT Competence for Education (CIE):

- The proposals and guidelines [1] [10] [12] [7] made it possible to have an initial look to establish the CIE proposal.

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- However, the pedagogical sense was the center of reflection to approach the *What* and the *How* of the proposal for teacher training in ICTs.
- Teacher training as related to ICTs led to reflection on the teachers' pedagogical needs, and also, to come up with a pedagogical rather than merely instrumental proposal for ICTs. In this sense, personalized accompaniment is fundamental, since it fits the needs of every teacher and the activities organized in different educational situations.

Based on the previous points, the next step to reflection and the educational sense of the proposal, ICT Competence for Education was structured through standards and indicators.

3.1.2 An instrument to assess ICT Competence for Education

Starting from a conceptualization on ICT Competence for Education (CIE), an instrument was designed to carry out a diagnosis and assess the development of this competence.

Hence, in order to assess CIE, some standards and indicators were proposed.

First, it is convenient to describe the concept of standard and indicator. According to the Colombian Ministry of Education (MEN) [7], standards are referents that make it possible to assess the levels of competence development. Even so, they comply with some characteristics: 1. They are based on general guidelines, 2. They describe knowledge and skills, 3. They are recognized at national and international levels, 4. They are capable of being observed and assessed, and, 5. They are periodically reviewed.

Second, [11],"a standard helps to know how to materialize the competence and how to assess it, so that the assessment of a competence is achieved through the evaluation made on each one of the standards belonging to the competence" (p.17).

Standards provide orientation and guidelines to plan education programs for teachers [1].

As a source for reflection, both national and international organizations suggest that standards are proposals which make it possible to observe transformation in the achievement of and compliance with some goals through time, in this case, of the ICT Competence for Education.

However, besides the conception of the standard, it is also important to formulate indicators that make it possible to attain the achievement of standards; this is the case for of the CIE proposal.

Turning to the definition provided by the Merriam-Webster Dictionary [17], an indicator is a sign that shows the condition or existence of something. In this sense, the indicators proposed for the ICT Competence in Education make it possible to focus the achievement of some elements that will serve as the bases for compliance with the standards.

Here, indicators are viewed as the actions and manifestations of the standards proposed for ICT Competence for Education.

On the other hand, it is worth highlighting that besides standards and indicators, the description of some examples is underscored as a way to help teachers to understand some actions or activities related with the achievement of every standard and indicator.

To sum up, Table 1 describes the instrument prepared for the development of the ICT Competence for Education.

Table 1. Instrument to assess the CIE.

Standard	Indicators
1. The teacher makes basic use of information technology tools and information management	1. Use of ICTs for personal activities. 2. Identification of information needs with the use of ICTS. 3. Efficient access to information. 4. Articulation and application of criteria to assess information and its sources. 5. Application of information for planning and creation of a product or activity.
2. The teacher integrates ICTs to improve teaching.	1. Design and use of digital educational resources in the teaching process 2. Preparation of assessment activities for students. 3. Development of assessment and feedback strategies. 4. Support to teaching activities through VirtualSabana or platforms complying with similar goals. 5. Participation in academic networks mediated by ICTs to support their teaching

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Standard	Indicators
	activities.
3. The teacher promotes ICT-mediated learning among students.	1. Design and use of digital educational resources to enhance the learning process among students. 2. Proposal of activities to facilitate students' independent work and interaction through VirtualSabana or platforms complying with similar goals. 3. Proposals for activities that lead students to design and develop products of knowledge through the use of ICTs. 4. Proposals for activities that lead students to design and develop products of knowledge through the use of ICTs.
4. Teachers innovate in their pedagogical practice with ICTs support.	1. Planning, systematization, follow-up and assessment of strategies for the design and development of products of knowledge by means of ICTs. 2. Follow-up to students in the design and development of products of knowledge through the use of ICTs. 3. Assessment of strategies that lead students to design and develop products of knowledge through the use of ICTs.

Having defined the standards and indicators required to determine the development of CIE, Universidad de La Sabana, through the teaching division and the Center of Technologies for the Academy awarded a maximum of 90 points as the highest score in the development of this Competence. Points were distributed by levels, as shown in Table 2.

Table 2. CIE Scoring

Level	Scoring
1	Between 10 and 18 points
2	Between 19 and 37 points
3	Between 38 and 56 points
4	Between 57 and 75 points
5	Between 76 and 90 points

With respect to Table 2, the distribution of the scores was characterized into five levels of CIE, with a range of 8 points between levels. The reason for this distribution is directly related with quantitative assessment leading to faculty promotion. In other words, the development of CIE awards teachers a quantitative assessment in the statutes for teacher ranking at the university.

In the same way, there is a figure allotted to every standard as part of the total CIE score.

In consequence, every standard has a score within the total value for CIE, that is, over 90 points. In turn, the scores for every standard are distributed among the indicators, according to the corresponding item. Table 3 shows the scores and their corresponding distribution.

Table 3. CIE standards and indicators scores

Standards	Score	Indicators	Score
Standard 1	10 points	1.1	4 points
		1.2	1 point
		1.3	1 point
		1.4	2 points
		1.5	2 points
Standard 2	20 points	2.1	4 points
		2.2	4 points
		2.3	4 points
		2.4	4 points
		2.5	4 points
Standard 3	30 points	3.1	5 points
		3.2	5 points
		3.3	10 points
		3.4	10 points
Standard 4	30 points	4.1	10 points
		4.2	10 points
		4.3	10 points

3.1.3 Standards

Some characteristics of them described below.

3.1.3.1 Standard 1

For the *first standard* , which corresponds to the basic use of tools and information management through ICTs, indicators refer to the use of digital tools by teachers to carry out daily activities, not necessarily within the school setting. Likewise, this standard aims to know about the information management by teachers as they access scientific information.

In this sense, the aim is to know about the process of information search and the use of technological means to attain that goal.

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The importance and the role of information technologies literacy is relevant in the development of scientific, adequate digital information search skills to attain the goals defined in educational activities. Hence, information technology literacy is defined as the "set of skills required to find, retrieve, analyze and use information". [18]

3.1.3.2 Standard 2

The *second standard* is defined so that teachers reflect on their teaching practice and in consequence take a path of improvement to take advantage of technological resources with pedagogical sense. Among the indicators defined for this standard, the process of evaluating teaching practice is fundamental.

Assessment understood as a continuous and educational activity [18] makes the development of indicators be based on prior preparation of contents, activities, assessment and technological means.

3.1.3.3 Standard 3

For the *third standard*, the comprehension emphasis is on the improvement of learning when ICTs are incorporated. In this sense, the role of teachers involves the personalization of learning through participation of students and group work [20].

Hence, participation and the construction of knowledge among peers are fundamental to allow interactions through technological means to support learning.

In this sense, the use of ICT mediated platforms with pedagogical sense is a way to support interaction and joint work between students and teachers.

It is worth highlighting that for Universidad de La Sabana, the technological means which articulates individual work, and teaching and learning activities is called VirtualSabana. It is a Moodle-based technological platform. VirtualSabana supports the students' independent work and it is directly linked with academic credits according to nationwide regulations, which indicate that for every hour of face- to- face lessons, two hours of independent work must be articulated. In this fashion, proper integration of ICTs into the curricular process is fundamental and it turns into an aspect of quality and compliance with educational policies.

To conclude, VirtualSabana has become a proper setting for teachers to plan, systematize and follow-up on the independent work students are expected to do outside their face-to-face experience in class.

Another feature of this third standard has to do with the preparation of ICT mediated products of knowledge. Such products are understood as tangible evidence of a learning process through which students, with the guidance of teachers, manage to convert what has been taught into meaningful learning through the use of ICTs.

3.1.3.4 Standard 4

Finally, the *fourth standard* involves the demands and achievement of educational innovation by means of the critical use of Information and Communication Technologies.

According to Universidad de La Sabana's institutional regulations, ICT mediated educational innovation is the teacher planning process that involves follow-up, feedback and assessment of one's own teaching process as well as learning achieved by students thanks to such technologies. In this case, thinking about innovation does not involve variety in the use of the technologies used, but recognizing the disposition and perception by teachers [21] to make decisions on the process of innovation.

ICT educational innovation becomes a process to re-think the educational practices teachers apply in their teaching and learning activities, and also, the active participation of students becomes necessary in the process of integrating ICTs.

Therefore, the responsibility of teachers goes beyond the mere use of technological resources; it underscores sense and reflection to update themselves according to the needs of the academic context [14].

3.1.4 Guidelines for the development and follow-up of CIE

Within the framework of Universidad de La Sabana, teacher education is substantial.

Therefore, establishing regulations, models or guidelines is a requirement to guide efforts, strategies and proposals in the direction desired, as proposed by the institution.

In 2010, Universidad de La Sabana, aiming to strengthen the development of ICTs among teachers, approved and defined the "*Guidelines for diagnosis and development of the ICT Competence for Education amongst teachers*".

These guidelines are also based on the Institutional Educational Project, PEI dispositions.

To provide some contextualization, Universidad de La Sabana defines itself as a community of people who aim to take part in the advance of higher knowledge, taking into account the development of substantial functions made up by research, social projection and teaching. Amongst the institutional aims, it is convenient to explicitly highlight the following:

> To promote the development of pedagogical practices that stimulate autonomous and creative learning by students, as well as their capacity for innovation and problem solving (p. 10).[22]

Based on this aim, in order to promote the students' capabilities for innovation and autonomy, it is necessary that teacher training matches the institution's mission and vision.

The Regulations issued by the institution consider what is defined in the teachers' ranking regarding the supplementary training offered by the university. In consequence, provisions were made so that all teachers, with no exception, demonstrate compliance with the development and achievement of CIE in order to access or be promoted in the teachers' ranking.

However, in order to assess this competence, a procedure was suggested.

This procedure is now presented, step-by-step.

4 CIE Assessment

The process of assessing CIE starts when teachers carry out a diagnosis to determine the stage of their development for their CIE. Then, the results obtained are assessed and informed and finally, a personalized path is suggested in order to improve their development in CIE. The steps followed in order to assess the teachers' CIE are presented below:

4.1 Initial diagnosis

Every teacher at the institution must follow an initial CIE diagnosis.

The process to carry out this diagnosis involves:

1. A face-to-face or virtual, personalized interview.
2. The application of the "CIE assessment instrument" previously described.

Regarding the face-to-face interview, every teacher must undergo this process, which takes from 1 to 2 hours, depending on the case. The purpose of this interview is to know about the experience of every teacher regarding the use, integration and education process involving ICTs. The interview data sheet is presented in Table 4 below.

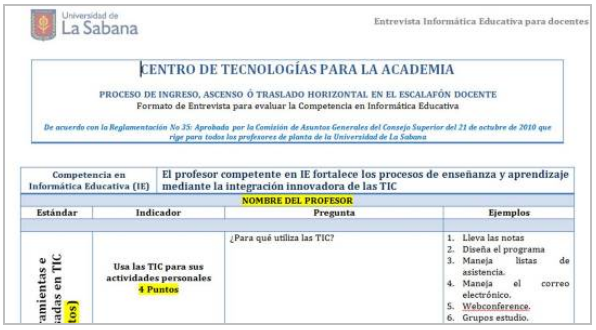
Table 4. CIE interview data sheet

Aspect	Description
ICT Competence for Education	A CIE proficient teacher strengthens the teaching and learning processes through the innovative integration of ICTs.
Aspects to be assessed during the (interview)	Information management competences Integration of ICTs into the teaching process Use of ICTs to improve the students' learning process ICT supported innovation of pedagogical practice
Observation of evidence of teaching and learning (Interview)	During the interview, evidence of the work done by means of integrating ICTs into, for example, the design of educational materials, simulators, electronic presentations, digital portfolios, etc. developed in teaching and learning processes will be observed.
Time allotted to interview	60 to 120 minutes
Mode of application	Direct- real time- interviewer and interviewee

Regarding the aspects considered in the personal interview, the instrument presented in Table 1 is used to assess CIE.

Through the assessment of the 4 standards, a deep inquiry is made on the use of ICTs in personal and academic processes by teachers.

The instrument applied is shown in Figure 1, which consolidates the qualitative and quantitative assessment in the diagnosis.


Universidad de La Sabana

Entrevista Informática Educativa para docentes

CENTRO DE TECNOLOGÍAS PARA LA ACADEMIA

PROCESO DE INGRESO, ASCENSO Ó TRASLADO HORIZONTAL EN EL ESCALAFÓN DOCENTE
Formato de Entrevista para evaluar la Competencia en Informática Educativa

De acuerdo con la Reglamentación No 35: Aprobada por la Comisión de Asuntos Generales del Consejo Superior del 21 de octubre de 2010 que rige para todos los profesores de planta de la Universidad de La Sabana

Competencia en Informática Educativa (IE)	El profesor competente en IE fortalece los procesos de enseñanza y aprendizaje mediante la integración innovadora de las TIC

NOMBRE DEL PROFESOR

Estándar	Indicador	Pregunta	Ejemplos
...amientas e ...adas en TIC ...os)	Usa las TIC para sus actividades personales 4 Puntos	¿Para qué utiliza las TIC?	1. Lleva las notas 2. Diseña el programa 3. Maneja listas de asistencia. 4. Maneja el correo electrónico. 5. Webconference. 6. Grupos estudio.

Figure 1. Format for the initial diagnosis of CIE. Official version in Spanish

4.2 Assessment of results by experts

The step following the personal interview is the quantitative and qualitative assessment of the diagnosis.

Qualitative assessment consists in discovering the scope and aspects to improve for every standard and indicator, whereas quantitative assessment determines the score for every indicator and standard.

In order to carry out the assessment, a committee was created to assess the initial diagnosis. This committee was made up of professional from different disciplines, including psychologists, pedagogues and engineers.

4.3 Results

Once the assessment is carried out, every teacher is given a personalized report, so that the score attained in CIE development and the aspects to be improved in forthcoming evaluations are made evident, as shown in figures 2 and 3.

Universidad de La Sabana — Informe Competencia en informática Educativa

PROCESO DE INGRESO, ASCENSO Ó TRASLADO HORIZONTAL EN EL ESCALAFÓN DOCENTE
Análisis y resultado de entrevista en la Competencia de Informática Educativa:
El profesor competente en IE fortalece los procesos de enseñanza y aprendizaje mediante la integración innovadora de las TIC

De acuerdo con la Reglamentación No 35: Aprobada por la Comisión de Asuntos Generales del Consejo Superior del 21 de octubre de 2010 que rige para todos los profesores de planta de la Universidad de La Sabana

Nombres y Apellidos completos del entrevistado:	XX
Fecha de la entrevista:	xx/yy/oo

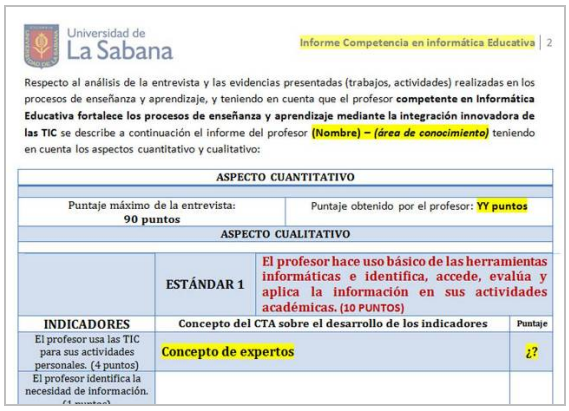
PARÁMETROS PARA LA REALIZACION DE LA ENTREVISTA

Para efectos de interpretación y análisis de los resultados obtenidos en la entrevista por parte del docente de la Universidad de La Sabana se debe tener en cuenta:

Tabla 1. Ficha técnica de la entrevista

Puntaje máximo	90 puntos
Tiempo de la entrevista y evidencias	60 a 120 minutos aproximadamente.

Figure 2. Individual assessment report. Official version in Spanish



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Respecto al análisis de la entrevista y las evidencias presentadas (trabajos, actividades) realizadas en los procesos de enseñanza y aprendizaje, y teniendo en cuenta que el profesor **competente en Informática Educativa fortalece los procesos de enseñanza y aprendizaje mediante la integración innovadora de las TIC** se describe a continuación el informe del profesor **(Nombre) – *(área de conocimiento)*** teniendo en cuenta los aspectos cuantitativo y cualitativo:

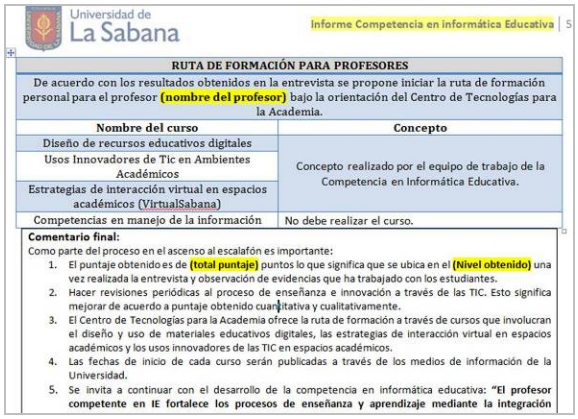
ASPECTO CUANTITATIVO		
Puntaje máximo de la entrevista: **90 puntos**	Puntaje obtenido por el profesor: **YY puntos**	
ASPECTO CUALITATIVO		
	ESTÁNDAR 1	**El profesor hace uso básico de las herramientas informáticas e identifica, accede, evalúa y aplica la información en sus actividades académicas. (10 PUNTOS)**
INDICADORES	**Concepto del CTA sobre el desarrollo de los indicadores**	**Puntaje**
El profesor usa las TIC para sus actividades personales. (4 puntos)	**Concepto de expertos**	¿?
El profesor identifica la necesidad de información. (4 puntos)		

Figure 3. Individual model for qualitative and quantitative results. Official version in Spanish

4.4 Teacher training path

Besides the qualitative and quantitative results of the personal interview – initial diagnosis-, the report sent to every teacher includes suggestions for training in order to incorporate ICTs, known as *the teacher training path for the development of CIE.*

This path is consolidated through an offer of courses geared to the development of the standards and indicators proposed in order to develop the ICT Competence for Education, as shown in figure 4.



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RUTA DE FORMACIÓN PARA PROFESORES

De acuerdo con los resultados obtenidos en la entrevista se propone iniciar la ruta de formación personal para el profesor **(nombre del profesor)** bajo la orientación del Centro de Tecnologías para la Academia.

Nombre del curso	Concepto
Diseño de recursos educativos digitales	Concepto realizado por el equipo de trabajo de la Competencia en Informática Educativa.
Usos Innovadores de Tic en Ambientes Académicos	
Estrategias de interacción virtual en espacios académicos (VirtualSabana)	
Competencias en manejo de la información	No debe realizar el curso.

Comentario final:
Como parte del proceso en el ascenso al escalafón es importante:

1. El puntaje obtenido es de **(total puntaje)** puntos lo que significa que se ubica en el **(Nivel obtenido)** una vez realizada la entrevista y observación de evidencias que ha trabajado con los estudiantes.
2. Hacer revisiones periódicas al proceso de enseñanza e innovación a través de las TIC. Esto significa mejorar de acuerdo a puntaje obtenido cuantitativa y cualitativamente.
3. El Centro de Tecnologías para la Academia ofrece la ruta de formación a través de cursos que involucran el diseño y uso de materiales educativos digitales, las estrategias de interacción virtual en espacios académicos y los usos innovadores de las TIC en espacios académicos.
4. Las fechas de inicio de cada curso serán publicadas a través de los medios de información de la Universidad.
5. Se invita a continuar con el desarrollo de la competencia en informática educativa: **"El profesor competente en IE fortalece los procesos de enseñanza y aprendizaje mediante la integración**

Figure 4. Model for individual training path. Official version in Spanish

4.5 Personalized accompaniment

Starting off from the assessment and the suggested personalized training path, the Center of Technologies for the Academy provides permanent and personalized guidance to teacher training in order to advance in the development of the ICT Competence for Education.

In consequence, some of the features of the accompanying process are:

- Providing personalized guidance on the needs of every teacher according to the educational intentions.
- Providing training courses that integrate ICTs into teaching and learning processes.
- Designing different communication paths to support the activities of teachers in their academic life.
- Offering courses according to the interests and needs of small groups of teachers.
- Providing permanent follow-up on CIE progress.

5 Conclusion

The proposal to assess the ICT Competence for Education at Universidad de La Sabana is both a tool and a model to enhance teacher training regarding the integration of ICTs into teaching and learning processes.

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On the other hand, the ICT Competence for Education explicitly contributes to the generation of educational innovation processes mediated by ICTs.

The development of CIE fulfills a relevant role in the process of access to and promotion in teachers' ranking.

Other implications to the proposal presented show that, beyond the instrumentalization of ICTs in formal education settings, the proposal for an ICT Competence for Education is consolidated as an innovative process that approaches ICTs from a critical and pedagogical perspective.

In this way, starting from an understanding of CIE, ICTs become powerful instruments to improve teaching practice and promote learning.

Finally, the institutional proposal to integrate ICTs into the curriculum made it possible to generate an institutional culture around the incorporation of ICTs and personalized accompaniment in order to make progress and develop CIE amongst teachers.

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