El proceso de transferencia en el uso de las TIC en las escuelas normales del estado de Zacatecas

The process of transfer in the use of ICT in the normal schools of the state of Zacatecas

O processo de transferência no uso de TIC em escolas normais no estado de Zacatecas

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Resumen

La presente investigación tiene el propósito de examinar las conceptualizaciones didácticas, disciplinares y tecnológicas de los docentes normalistas para descubrir qué es lo que determina al docente para incluir e incorporar las Tecnologías de la Información y la Comunicación (TIC) en el proceso educativo y cuál es el proceso de transferencia que llevan a cabo. Para esto se realizará un diseño fenomenológico, el cual pretende explorar, describir, entender y comprender las experiencias de los docentes normalistas al incluir e incorporar las TIC en su práctica docente. En concreto, el fenómeno de interés es dar respuesta al cuestionamiento de cuál es el proceso de transferencia que llevan a cabo los docentes normalistas. Todo ello contextualizado en las escuelas normales del estado de Zacatecas y aplicado en los docentes que atienden las asignaturas de Trabajo Docente e Innovación y Las TIC en la Educación, principalmente a causa de que son asignaturas que tienen incidencia directa en la competencia profesional, es decir, usan las TIC como herramientas de enseñanza y aprendizaje.

Entre los resultados alcanzados se aprecia que al analizar la descripción de cada docente se puede establecer que la determinación de las TIC parte de tres dimensiones: la tecnológica, la disciplinar y lo didáctico. En el aspecto tecnológico, los docentes contemplan la accesibilidad, la conectividad, las competencias digitales, la alfabetización digital y la infraestructura. En el rubro disciplinar se identifica que cualquier contenido puede ser desarrollado con ayuda de las TIC, pero existen indicios sobre la identificación de la naturaleza del contenido (declarativo, procedimental y actitudinal). Y en el aspecto didáctico se contemplan las características de los alumnos, las TIC como un medio o instrumento de aprendizaje y la estrategia a utilizar.

En cuanto a la implementación de las TIC, se observa que la información recabada coincide con lo expuesto por Barrantes, Casas y Luengo (2011), los cuales identifican, a su vez, tres tipos de dificultades: de infraestructura y materiales, de formación y de organización y currículo. El proceso de transferencia, por su parte, se percibe desde dos tipos identificados por Flores (2004): el de transferencia cognitiva, la cual se generaliza en el plano abstracto de forma teoría a teoría y visualizada, siendo una aplicación cercana, segura de los aprendizajes y planeada. Y otros instructores se encuentran más cercanos a las transferencias en-la-acción y a la transformación de la práctica, la cual es de forma teoría a práctica, es decir, la aplicación del aprendizaje en la práctica docente con la actuación real del sujeto en la vida cotidiana.

Palabras clave: competencia digital, formador de docentes, proceso de transferencia, TIC.

Abstract

The present investigation has the purpose of examining the didactic, disciplinary and technological conceptualizations of the normalist teachers to analyze what determines the teacher to include and incorporate the Information and Communication Technologies (ICT) in the educational process and what is the process of transfer they carry out. On this occasion, a phenomenological design will be carried out, which aims to explore, describe, understand and understand the experiences of normal teachers by including and incorporating ICT in their teaching practice, and thus discover the elements that determine it. The phenomenon of interest is: What is the transfer process carried out by normal teachers? The context is the

Normal Schools of the State of Zacatecas and the teachers that attend the Teaching Work and Innovation and ICT in Education subjects, because they are subjects that have a direct impact on professional competence: use ICT as teaching tools and learning.

Among the results is that by analyzing the description of each teacher can be established that the determination of ICT part or are grouped into three dimensions, the technological, disciplinary and didactic. In the technological aspect, teachers consider: accessibility, connectivity, digital skills, digital literacy and infrastructure. In the disciplinary field it is identified that any content can be developed with the help of ICT, but there are indications about the identification of the nature of the content (declarative, procedural and attitudinal). In the didactic aspect they are considered: the characteristics of the students, the ICT as a means or instrument of learning and the strategy to use. Regarding the implementation of ICT, it can be seen that the information gathered coincides with what was stated by Barrantes, Casas and Luengo (2011), which identify three types of difficulties, infrastructure and materials, training, organization and curriculum. The transfer process is perceived in two types identified by Flores (2004), that of cognitive transfer, which is generalized in the abstract plane from theory to theory, and visualized, being a close, safe application of learning and planned. Others are closer to the transfers in-action and the transformation of the practice, which is from theory to practice, ie the application of learning in teaching practice, with the real performance of the subject in everyday life.

Key words: digital competence, teacher trainer, transfer process, ICT.

Resumo

Esta pesquisa tem como objetivo analisar as concepções educacionais, disciplinares e tecnológicos de professores de escolas normais para descobrir o que determina o professor de incluir e incorporar tecnologias de informação e comunicação (TIC) no processo educativo e que o processo de transferência que realizam. Para isso, será realizado um desenho fenomenológico, que visa explorar, descrever, compreender e compreender as experiências de professores normais, incluindo e incorporando as TIC na sua prática docente. Em particular, o fenômeno de interesse é responder ao questionamento de qual é o processo

de transferência realizado pelos professores normalistas. Todos contextualizada nas escolas normais no estado de Zacatecas e aplicado a professores que frequentam os temas de trabalho de ensino e inovação e as TIC na Educação, principalmente porque eles são assuntos que têm um impacto directo sobre a competência profissional, ou seja, , use as TIC como ferramentas de ensino e aprendizagem.

Entre os resultados alcançados, percebe-se que, ao analisar a descrição de cada professor, pode-se estabelecer que a determinação das TICs se baseia em três dimensões: tecnológica, disciplinar e didática. No aspecto tecnológico, os professores consideram acessibilidade, conectividade, habilidades digitais, alfabetização digital e infraestrutura. No campo disciplinar, identifica-se que qualquer conteúdo pode ser desenvolvido com a ajuda das TICs, mas há indícios sobre a identificação da natureza do conteúdo (declarativo, processual e atitudinal). E no aspecto didático, as características dos alunos são contempladas, o TIC como meio ou instrumento de aprendizado e a estratégia a ser utilizada.

Com relação à implementação das TIC, percebe-se que as informações coletadas coincidem com o exposto por Barrantes, Casas e Luengo (2011), que identificam, por sua vez, três tipos de dificuldades: infraestrutura e materiais, capacitação e treinamento. de organização e currículo. O processo de transferência, por outro lado, é percebido a partir de dois tipos identificados por Flores (2004): a transferência cognitiva, que é generalizada no plano abstrato de teoria para teoria e visualizada, sendo uma aplicação próxima e segura da teoria. aprendizagens e planeadas. E outros instrutores estão mais próximos das transferências em ação e da transformação da prática, que é da teoria à prática, ou seja, a aplicação da aprendizagem na prática docente com o real desempenho do sujeito na prática. vida quotidiana.

Introduction

The teaching practice and its training bring into play the complexity of the teaching and learning process. In this sense, the teaching practice is defined by Callejas, Gómez, Gutiérrez and Pardo (2013) as an act and a way of doing, an everyday action that gives continuity and regularity to the actions, which are generators of habits, which they are prefigured and influenced by cultural, moral, pedagogical, political, interpersonal, institutional, ideological and social reasons.

At the same time, the teaching practice is reflected by the life history of each teacher, which has been built in the pedagogical and disciplinary fields within their own sociocultural contexts.

The style of the teacher is a complex network between the disciplinary and didactic knowledge that gives identity to his acting in the classroom, where decisions are made about strategies, techniques, activities, tools, materials, resources, evaluation processes, as well as the didactic interaction that occurs between the content, the teacher and the student.

Regarding the premises of what the teacher should know, are the ideas of Shulman (2005), who argues that teaching is influenced by understanding and reasoning, transformation and reflection, which starts from the categories of the knowledge base, dividing into knowledge of the content, general didactic knowledge, knowledge of the curriculum, didactic knowledge of the content, knowledge of the students and their characteristics, knowledge of the educational contexts, knowledge of the objectives, purposes and educational values and its philosophical and historical foundations.

For the present document, the concept of didactic knowledge of content (CDC) is taken up, which is defined by Shulman (2005) as the one that identifies the bodies of distinctive knowledge for teaching and that represents the mixture between subject matter and didactics by which comes to an understanding of how certain issues and problems are organized, represented and adapted to the diverse interests and abilities of the students and finally exposed for their teaching.

The success of the teaching starts from understanding the didactic and disciplinary knowledge of the content, because the curriculum is transformed into a series of strategies, techniques and didactic activities, where teachers apply what they know; in such a way that

the teaching practice needs a constant process of reflection on what it knows, what it does and how it does it in order to transform the disciplinary knowledge in accessible and comprehensible forms and structures for the students.

On this occasion, the theoretical approach that allows for a position is the one proposed by Moya (2013). This indicates that the use of information and communication technologies (ICT) and learning and knowledge technologies (TAC) depends on the use of a methodology. To this end, the Technology, Pedagogy And Content Knowledge (TPACK) model is proposed, which deals with the implementation of digital educational content in classrooms. Deepening in it, this model establishes that the way to develop a good handling of the TIC and the TAC, in educative surroundings, is from the knowledge of the own teacher, what implies that the process of professional formation, besides including knowledge on technology, that allow to select and manage the tools and resources of the Web 2.0 to be able to develop the contents that you want to carry out in the classrooms, besides this, it must include knowledge on didactic methodologies suitable for teaching, all with the firm purpose of training the new teacher capable of facing changes as vertiginous as those that occur today.

Likewise, the concept of didactic transposition proposed by Chevallard (1998) is put into play, who defines it as the step from wise knowledge to the knowledge taught, which allows the articulation of epistemological analysis with didactic analysis, and becomes the guide for the proper use of epistemology for didactics.

In this idea of transferring what the teacher knows to convert it into practice, the concept of transference arises, and from this, in turn, arise the ideas of Flores (2004), who considers training as a process that generates changes and transformations internal in people through the transfer, which defines as the relationships made by teachers in the space and time of the training, whose consequence is the production of generalizations that show competences, as well as skills and conceptions of teachers reactualized in the practice itself through the actions. Likewise, Flores (2006) describes six types of transfers generated during and after training at three levels, subjective-individual, objective-individual and public-objective, namely, cognitive, retrospective, verbal, induced, visualized and enforced transfers. the action. This classification, in turn, is based on two criteria: the temporal and its resolution of the tension between theory and practice.

On some occasions it is observed that the teacher manifests the didactic and disciplinary knowledge, but that they are not revealed in practice, which, according to Feixas et al. (2013), can be given by any of the factors that affect the transfer, such as the environment or infrastructure, the student's own factors, or professional training, which should establish a relationship between experience- know and theory-practice.

In the case of teachers who incorporate the use of ICTs, the relationship between the curricular, didactic, disciplinary and technological dimensions is highlighted, which gives meaning to teaching actions.

At present, it can be observed that there is an increase in the technological infrastructure, which does not necessarily imply a change in the way of teaching; Sometimes a decontextualized application of ICT can be seen and greater value is given to its use, which relegates to the didactic and organizational dimension. This is due to the fact that technological tools have become an instrument that supports the practice without modifying it, that is, it is used as a substitute.

Before this scenario arises the need to conduct a research process that aims to examine the educational, disciplinary and technological conceptualizations of teachers normalistas to analyze what determines the teacher to include and incorporate ICT in the educational process and what is the process of transfer they carry out.

Materials and methods

Educational research, according to McMillan, Schumacher and Baides (2005), is relevant because of the continuing attempt by educators to understand educational processes and professional decision-making. It is known that nowadays one can not investigate only one aspect because different kinds of knowledge are needed, and there are many types of research that, in the educational field, are oriented to the development of this knowledge related to teaching practice . The investigation of educational processes acquires its relevance in the purpose of improvement.

In this research, a phenomenological design will be carried out, which aims to explore, describe, understand and understand the experiences of normal teachers by including and incorporating ICT in their teaching practice, and thus discover the elements that determine it. For its development, the stages proposed by Hernández, Fernández and Baptista (2010) are contemplated. It should be noted that the phenomenon of interest is to discover what is the process of transfer carried out by teachers normalistas. And that the context is the normal schools of the state of Zacatecas, specifically the teachers that attend the Teaching Work and Innovation and ICT in Education subjects, because they are subjects that have a direct impact on professional competence and the use of ICT as teaching and learning tools.

The immersion to the field was carried out from March 1 to May 31, 2017 with the purpose of collecting the data through semi-structured interviews. During the same period, the transcription and review of the information generated by the instrument was carried out.

The sample in qualitative research for phenomenological design, according to Hernández et al. (2010), is at least 10 cases; here they will be 11 for which they have the operational capacity, also allow answering research questions because their academic and teaching characteristics (teachers who incorporate ICT to their teaching practice) present first-hand information for research. It is determined that the sample for the research is valuable because of the experience, richness, depth and quality of the information that can be provided by the teachers who attend the aforementioned courses.

The data collection was done in the natural and daily environments of the participants, that is, in each normal school, through a semi-structured interview consisting of 13 questions, as shown in Table 1.

Tabla 1. Cuestionario sobre el proceso de transferencia en el uso de las TIC de las escuelas de nivel superior

Fecha:	Grado académico:
Lugar	Edad:
Hora:	Sexo:
Nombre (opcional):	Rol que desempeña:

Introducción
El presente cuestionario tiene como propósito establecer el proceso de transferencia en el uso de las TIC que sigue el docente de educación superior, con la finalidad de generar estrategias para fortalecer el desempeño profesional. La información recabada será empleada para la mejora de las instituciones.

Características del cuestionario
    Sus respuestas serán anónimas y absolutamente confidenciales. La entrevista será procesada por personas externas a la institución.

Preguntas

1) ¿Qué tipo de estrategias de aprendizaje basadas en el uso de las tecnologías de la información y la comunicación (TIC) son las que toma en cuenta al impartir clases?

2) ¿Cómo se aplican los conocimientos o saberes tecnológicos al momento de la enseñanza?

3) ¿Qué toma en cuenta para el empleo o no de las TIC en la enseñanza y en el aprendizaje?

4) ¿Qué es lo que más se le dificulta al llevar la teoría a la práctica en la planificación y desarrollo de sus sesiones?

5) ¿Cuáles son los recursos tecnológicos que toma en cuenta para efectuar la gestión de la información de la clase y efectuar su propia formación profesional?

6) ¿Qué son para usted las TIC?

7) ¿Cómo considera su nivel de conocimiento tecnológico?

8) ¿Por qué es necesario que el docente se actualice constantemente en el uso de nuevas tendencias educativas?

9) ¿Qué conocimientos, habilidades y actitudes debe poseer el docente en la actualidad?

10) ¿Qué aspectos toma en cuenta del contenido para que las TIC se adecuen a su clase?

11) ¿Considera que todos los contenidos pueden adaptarse mediante los recursos tecnológicos? ¿De qué forma?

12) ¿De qué forma le ayuda el uso de la tecnología cuando desconoce algún aspecto del contenido?

13) ¿Qué tipo de estrategias implementa mediante el uso de la tecnología para la enseñanza de contenidos?

Información relevante que considere importante señalar:

GRACIAS, sus respuestas serán anónimas y absolutamente confidenciales.

Fuente: Elaboración propia

The process of interpretation of the interviews is given through four types of reading: intuitive, thematic, contextual and relational, supported by the computer program ATLAS.ti 7, in which open coding is used through the actions of identifying and select the teacher's conceptualizations and the didactic application of ICT. After this step, they grouped together to generate the circumstances that determine the teacher to use ICT.

In the same way, the analysis of the behaviors and experiences is carried out in order to identify the units, and thus, through the identification of the conditions, the context and the situations in which it occurs, to generate knowledge about the disciplinary domain, didactic and technological in the teaching practice. At the same time, a description is drawn up that combines facts and insights about the transfer process carried out by teachers.

Results and Discussion

The results are the product of the four types of reading, and when processing the relational reading the following description and characterization of the phenomenon is obtained about the transfer process carried out by the normal teachers (see table 2).

Tabla 2. Características y descripción de los docentes normalistas

Identificación	Edad	Años de servicio	Asignatura que atiende	Descripción del docente
E1	47	24	Trabajo docente e innovación	Las TIC son los recursos para recibir y enviar información de forma rápida y que estos recursos tecnológicos son: el proyector, la PC y el *software*. Esto se ve cristalizado a través de usar las TIC para las exposiciones y explorar lo que saben los alumnos.
E2	50	30	Trabajo docente e innovación	Define a las TIC como herramientas que se convierten en vehículos de acceso a la información y generación de conocimientos. Considera que los recursos tecnológicos son la laptop, celular, plataformas, Google, revistas online. Lo trabaja por medio de dar la liga, que los alumnos indaguen, darles la problemática para que accedan, que la lean y suban el trabajo.
E3	40	17	TIC en la educación	Las TIC contemplan como recursos tecnológicos al equipo de cómputo y el servicio de internet. Hace uso de las redes sociales para el área de la comunicación y plataformas para el trabajo, de igual forma emplea la proyección de diapositivas, videos y todo lo que esté al alcance en cuestiones de conocimientos y de equipamiento.
E4	54	34	Trabajo Docente e Innovación	Las TIC son la radio, computadoras, celulares, todo recurso que proporciona información y nos facilita la comunicación o ayuda a comunicarnos. Utiliza la computadora para la búsqueda de información, diapositivas, diarios electrónicos, cuaderno digital para complementar el cuaderno.

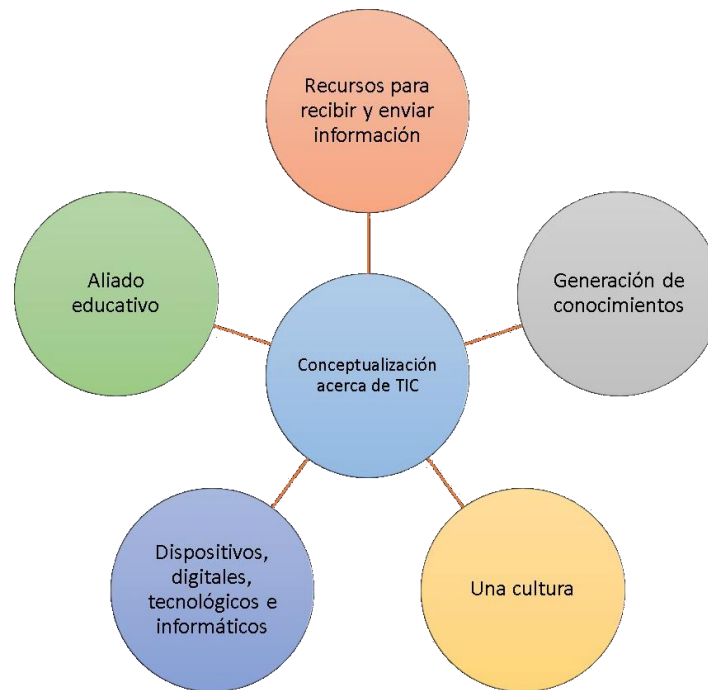| E5 | 43 | 19 | TIC en la educación | Las TIC son un aliado educativo que permite la motivación. Los recursos que contempla son las páginas web y las aplicaciones educativas. Su estrategia de trabajo es el individual con base en la nube, por medio de equipos utilizando documentos colaborativos en red y el uso de las redes sociales en un ambiente educativo. |
E6	57	35	Trabajo Docente e Innovación	Las TIC las define como una cultura para la escuela. Los recursos tecnológicos que él contempla son el celular y los buscadores como fuentes de información. Sus conocimientos se manifiestan a través del diseño de planificaciones, las cuales se organizan, nutren y complementan con la información de la red.
E7	45	23	Trabajo Docente e Innovación	Las TIC son todos los recursos tecnológicos e informáticos que se pueden encontrar en la red y que permiten dar acceso al conocimiento de manera instantánea. Ha estado trabajando algunos recursos digitales como los juegos didácticos, las historietas, las infografías, las presentaciones, las transmisiones en vivo, los contenidos añadidos a través de códigos QR, los videos, los reportajes, entre otros.
E8	33	7	Trabajo Docente e Innovación	Las TIC las define como la tecnología de comunicación y la información por medio de recursos tecnológicos. Los recursos tecnológicos que contempla son el proyector, materiales visuales y auditivos. Las estrategias que utiliza son la comparación de materiales y el compartir la información mediante la red escolar.
E9	43	10	TIC en la educación	Define a las TIC como todos los recursos tecnológicos y digitales que permiten la comunicación, los recursos tecnológicos son la computadora, el celular y el internet, así como las redes. Señala que la consulta y análisis de la información son desarrolladas a través de aplicaciones y material audiovisual

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				para la producción de nueva información en otro formato digital.
E10	42	18	TIC en la educación	Las TIC son los recursos comunicativos, tecnológicos y de información. Dentro de los recursos agrupa al internet, la búsqueda, el desarrollo de cursos y el intercambio de información. Identifica el uso de los recursos apropiados para el proceso formativo como son los lectores de texto y buscadores de informaciones; son elementos básicos para la conformación de una estrategia.
E11	37	15	Trabajo Docente e Innovación	Las TIC son todo tipo de herramienta que se utilice de tecnología y comunicación, los recursos tecnológicos los identifica como aquellos programas que facilitan el proceso educativo: ofimática para la elaboración de trabajos, grupos de Whatsapp, Dropbox, Geogebra, SPSS. El uso de las TIC parte de la idea. si se imparte una materia relacionada con geometría se usa las formas geométricas a través de Geogebra,

Fuente: Elaboración propia

In order to continue with the analysis and interpretation of the information, the schema and analytical report of the didactics and technology representations is taken up again through the approaches of Colivoro (2011), which points to the theory of social representations as a necessary way to access the meanings of teaching practices around ICT. These, in addition, suppose for the own actors from their subjectivity, although the representation constitutes a universalization of the subjects in a determined context. The conceptualization of ICT is presented as the first category of analysis (see figure 1).

a) Conceptualization about ICT.

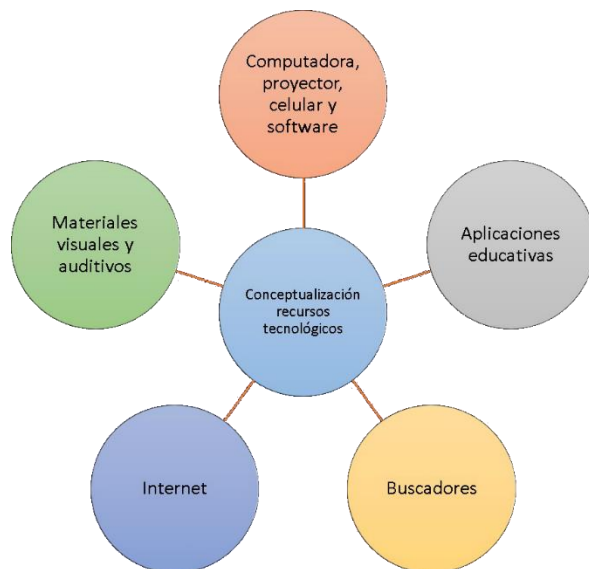**Figura 1.** Conceptualización acerca de las TIC

Fuente: Elaboración propia

When observing the outline about the conceptualizations that the normalist teachers of the TIC have, it is perceived that they are contemplated as a culture that must be appreciated, as an educational ally for the generation of knowledge. On the other hand, a sector of teachers perceives them as technological, digital and computer devices to receive and send information. As you can see, there is a diversity in the conceptual approaches to ICT, from the teacher who only perceives them as devices, as already mentioned, to who considers them as a new cultural form.

b) Conceptualization about technological resources.

The second category of analysis is the conceptualization that teachers of schools have about technological resources (See figure 2)

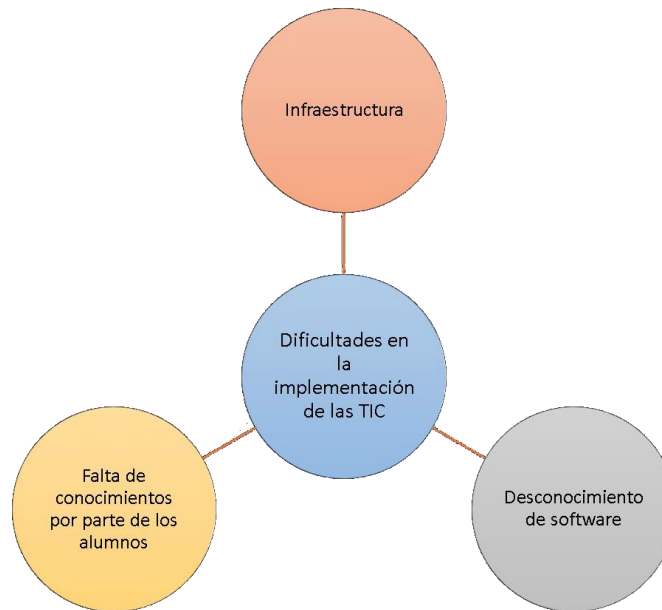**Figura 2**. Conceptualización acerca de los recursos tecnológicos

Fuente: Elaboración propia

Figure 2 establishes the ideas of normal teachers who have technological resources: search engines, educational applications, internet, visual and auditory materials. Another idea that prevails is that the technological resources are the computer, the projector and the cell phone. As noted, there is a diversity of opinion about resources and the division between devices and other types of software. Given this, the technological resource is defined as a means that uses technology (tangible or non-tangible) to fulfill its purpose.

c) Difficulties in the implementation of ICT.

As a result of the analysis, the difficulties that normal teachers have in the implementation of ICTs are categorized (see figure 3)

Figura 3. Dificultades en la implementación de las TIC
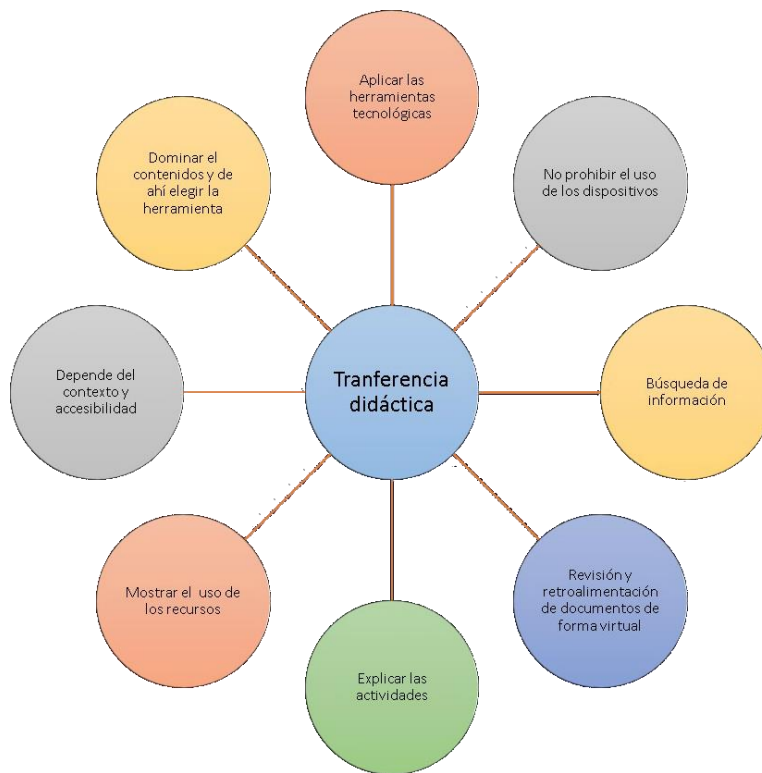

Fuente: Elaboración propia

Figure 3 analyzes the difficulties in the implementation of ICT. There are three main setbacks. On the one hand, the technological infrastructure that the schools have; second, ignorance about software, and finally, lack of knowledge on the part of students. As can be seen, the difficulties in the use of ICTs prevail in the infrastructure, as well as the knowledge about them, leaving aside the domain of content.

d) Factors that influence the didactic transfer process

By continuing with the analysis process, the category about the factors that influence the transfer process in the teachers of the normal schools in the use of the ICT (see figure 4) emerges.

Figura 4. Factores que incluyen en el proceso de transferencia didáctica

Fuente: Elaboración propia

The association that normal teachers do when transferring their knowledge to the application in the classrooms, that is, the transfer process, is carried out by not prohibiting the use of technological devices and the search for information, as well as mastering the content and Then choose the digital tools. Another idea is that knowledge can not be applied in the classroom because of the context and accessibility, another is that the application of the teacher's knowledge is done through explaining and showing the use of the tools-activities. In the same way, it manifests itself through virtual work in the form of a repository. It can be pointed out that the transfer process is carried out in an evolution from theory to theory when explaining the activities and theory-practice when showing the use of the tool, which is affected by the availability and accessibility, leaving aside the articulation of pedagogical technological content knowledge.

e) Application of ICT in education

The next category refers to the way in which the teacher teachers apply ICT within their training processes (see figure 5)

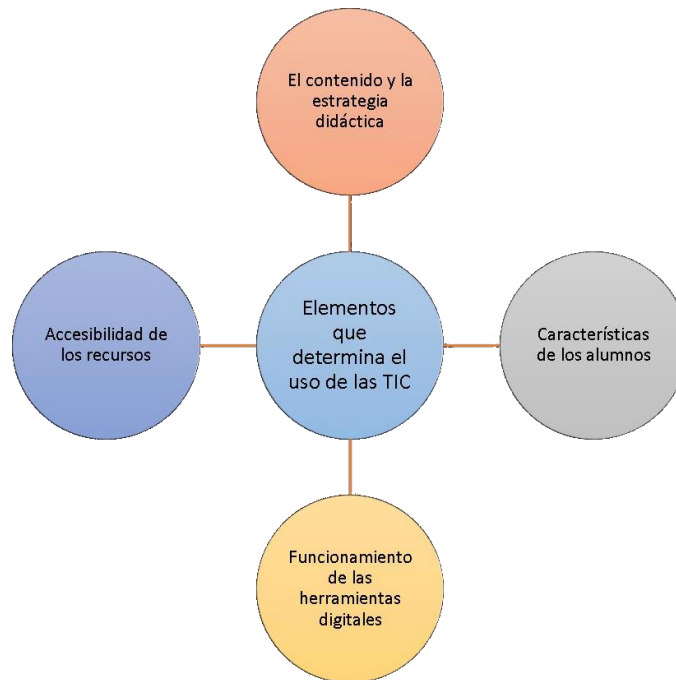**Figura 5**. Aplicación de las TIC en la educación

Fuente: Elaboración propia

Regarding the application of ICT, teachers present ideas about the different ways in which they use, among which point the search for information, the development of collaborative documents, the use of social networks and platforms, the comparison of materials and the use of presentations and videos, as well as the repository of works and strategies mediated by ICT.

f) Elements that determine the use of ICT.

Finally, the category about the elements that determine the use of ICT within normal schools emerged (see figure 6)

Figura 6. Elementos que determinan el uso de las TIC

Fuente: Elaboración propia

The factors that determine the use of ICT, point out the teachers of the normal schools, are the content and the didactic strategy, the characteristics of the students, the accessibility to the resources and the optimal functioning of the digital tools. When observing the above, it can be mentioned that knowledge of content and pedagogical knowledge are of vital importance, and that to a certain extent technological knowledge is omitted, since they only focus on the accessibility and availability of tools, but not in your digital skills for employment.

However, in the analysis process the relationship between what is thought and what is done is done in order to reflect on the way in which the didactic transposition is developed, as shown in Table 3.

Tabla 3. Cuadro comparativo entre conceptualización y aplicación

Conceptualización de las TIC en la educación	Aplicación de las TIC en el aula
Las TIC son los recursos para recibir y enviar información.	Exposiciones. Compartir información. Dialogar.
Las TIC son las herramientas que se convierten en vehículos de acceso a la información y generación de conocimientos.	Se aplica a través de investigar, divulgar y subir productos.
Las TIC son los recursos tecnológicos que incluyen el equipo de cómputo y el servicio de internet.	Utiliza las redes sociales para el área de la comunicación y plataformas para el trabajo, de igual forma emplea la proyección de diapositivas, videos.
Las TIC son un recurso que proporciona información y nos facilita la comunicación.	Búsqueda de información, presentación de diapositivas y captura de documentos.
Las TIC son un aliado educativo que permite la motivación de los alumnos.	El trabajo es el individual con base a la nube; o bien, por equipos, utilizando documentos colaborativos en red y el uso de las redes sociales en un ambiente educativo.
Las TIC se definen como una cultura: para la escuela, la familia, para convivir, hacer amistades y la formación autodidacta.	Selección y búsqueda de información.
Las TIC son definidas como todos los recursos tecnológicos e informáticos que se pueden encontrar en la red y que permiten acceder al conocimiento de manera instantánea.	Trabajo de juegos didácticos, historietas, infografías, presentaciones, transmisiones en vivo, contenidos añadidos a través de enlaces y códigos QR, videos y reportajes.
Las TIC son los recursos tecnológicos que contemplan el proyector, los materiales visuales y auditivos.	La comparación de materiales (aspectos visuales y auditivos), y compartir la información.
Las TIC se definen como todos los recursos tecnológicos y digitales que permiten la comunicación genuina para compartir la información en grupos con el mismo interés.	Señala que aplica la consulta y análisis de la información para la producción de nueva información en otro formato digital.
Define a las TIC como los recursos comunicativos, tecnológicos y de información que facilitan a los sujetos el desenvolvimiento de sus capacidades.	Búsqueda de información y presentaciones.
Define a las TIC como todo tipo de herramienta que se utilice de tecnología y comunicación.	Presentaciones, mantener comunicación, elaboración de documentos, procesamiento de información, selección y búsqueda de información.

Fuente: Elaboración propia

As it is observed there are six teachers whose conceptualizations are applied, that is, what is known or thought is used, for example: "ICT is a resource that provides information and facilitates communication", and the teacher applies them following way: "Information search, slide presentation and document capture". On the other hand, there are five teachers who have a different conceptualization to what is done in the classroom, as shown below: "Defines ICT as the communicative, technological and information resources that facilitate the development of subjects of its capabilities ", being its application" the search for information and the use of presentations ". This indicates that the transfer processes are different in each one of the teachers.

The discussion of the results indicates that, when analyzing the description of each teacher, it can be established that the determination of ICTs is divided or grouped into three dimensions: technological, disciplinary and didactic. In the technological aspect, teachers consider accessibility, connectivity, digital skills, digital literacy and infrastructure. In the disciplinary field, on the other hand, it is identified that any content can be developed with the help of ICT, but there are indications about the identification of the nature of the content (declarative, procedural and attitudinal). In the didactic aspect, finally, the characteristics of the students are contemplated, the TIC as a means or instrument of learning and the strategy to use.

In the category of conceptualization about ICT there is the teacher who only perceives them as digital devices, even those who consider them as an emerging culture. It should be added that Cobo (2011) agrees that they are technological devices (hardware and software) that allow editing, producing, storing, exchanging and transmitting data between different information systems that integrate computer, telecommunications and network media, and that make possible both the interpersonal and multidirectional communication and collaboration.

Regarding the category of the conceptualization of technological resources, it can be noted that there is great diversity around the concept. There are those who think of devices and others who think of different types of software. Given this, it can be said that the technological resource is defined as a means that uses technology (tangible or non-tangible) to fulfill its purpose, and which, according to Cacheiro (2011), has the purpose of

contributing to the process of inquiry of the students to cover the educational objectives of higher level. They are used as resources for information, learning and collaboration, although in the educational practice there are hybrid configurations.

Regarding the implementation of ICT, it can be seen that the information collected coincides with that presented by Barrantes, Casas and Luengo (2011), which identify three types of difficulties: infrastructure and materials, training and organization and curriculum.

The transfer process is perceived in two types identified by Flores (2004). The cognitive transfer, which is generalized in the abstract plane from theory to theory, and visualized, being a close application, sure of the learning and planned. While other teachers are closer to the transfers in-action and the transformation of the practice, which is from theory to practice, that is, the application of learning in the teaching practice, with the actual performance of the subject in daily life.

The application of the ICTs of normal teachers is given through basic uses of ICT exploration or immersion, that is, electronic technology is used for extension activities, deepening exercises, web searches or multimedia presentations, and generally they reinforce the development of basic cognitive competences related to the contents to be addressed or the tools based on technologies are present in all the activities. Databases, spreadsheets and graphics, multimedia, programs for publication and internet are used as complements to the selected teaching activities (Martín and Marchesi, 2006)

The determination of the use of ICT in education coincides with that proposed by Valverde, Garrido and Fernández (2010), who point out that in order to design a learning situation it is necessary to integrate the understanding of a four-component teacher: pedagogy, the curricular content, the characteristics of the student and the context of learning.

Conclusions

It can be concluded that teachers do not always apply everything they know, but also that there are teachers who are congruent between what they know and what they do. In this case, what determines the pedagogical decision-making in the incorporation of digital tools is based on the domains of the disciplinary (content), the didactic (strategy and characteristics of the students) and the technological (accessibility, availability and functioning). of the tools).

The conceptualizations of teachers in the technological dimension are diverse, some of which are located in the development of digital competence, or in the consolidation of digital literacy.

It should be recognized that the educational practices in which ICTs are incorporated in the normal context of the state of Zacatecas are mostly basic, characterized by the use of technologies as a resource to receive and communicate information. Similarly, they focus on an office use and rarely become a means of learning.

Finally, the difficulties in the incorporation of ICTs lie in the type of infrastructure that the schools have and the lack of digital competences on the part of teachers.

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