# El uso del Smartphone en el desarrollo de Competencias Digitales en la Asignatura Taller de Fotografía II, de la Universidad Veracruzana

*The use of the Smartphone in the development of Digital Competences in the Subject Photography Workshop II, of the Veracruzana University*

*O uso do Smartphone no desenvolvimento de Competências Digitais no Workshop de Fotografia de Assunto II, da Universidad Veracruzana*

**Javier Casco López**
Facultad de Ciencias y Técnicas de la Comunicación, Universidad Veracruzana, México
javiercasco6724@gmail.com
https://orcid.org/0000-0003-2735-9112

## Resumen

En la época actual, las Instituciones de Educación Superior (IES) se ven en la imperiosa necesidad de transfigurar sus políticas educativas y sus modelos de enseñanza – aprendizaje. Ello habla de las innovadoras formas de pensamiento que permean en el siglo XXI, en donde se transita hacia el conocimiento de la realidad y la adquisición de competencias. La investigación toma como marco de referencia los estudios realizados dentro del ámbito educativo y se contextualiza mediante la actividad diaria. El propósito de este estudio de carácter exploratorio, es describir *El uso del Smartphone en el desarrollo de Competencias Digitales en la Asignatura Taller de Fotografía II.* Los sujetos investigados durante el período lectivo Febrero – Julio de 2016 son estudiantes de la Facultad de Ciencias y Técnicas de la Comunicación, de la Universidad Veracruzana, en donde los resultados obtenidos dan cuenta de la observación y participación de 30 alumnos, a través de la validación de los datos científicos obtenidos del paradigma cualitativo y de la información proporcionada por la técnica de la Investigación –acción. Las evidencias y los datos proporcionados en la captura

de información refieren el desarrollo de sus competencias digitales, principalmente en el uso y apropiación de dispositivos electrónicos como es el caso del Smartphone.

**Palabras clave:** Competencias digitales, Investigación – Acción, Fotografía

## Abstract

In the current era, Higher Education Institutions (IES) are in the urgent need to transfigure their educational policies and their teaching - learning models. It talks about the innovative ways of thinking that permeate the 21st century, where you move towards the knowledge of reality and the acquisition of competencies. The research takes studies in the educational context as a frame of reference and it is contextualized through daily activity. The purpose of this research is to describe the concepts that define the textual corpus through the validation of the scientific data obtained from the qualitative paradigm and the information provided by the action research technique. Its objective is to analyze the development of digital competencies in the training of students of the subject of Photography Workshop II. The subjects investigated are students of the Faculty of Communication Sciences and Techniques, of the Universidad Veracruzana (University of Veracruz), where the results obtained account for the observation and participation of 30 students, who during the term time February - July 2016, were part of of the study, the evidences and the data provided in the collection of information recount the development of their digital competencies, mainly in the use and appropriation of the photographic camera as an instrument of work and of the underutilization of electronic devices such as the case of tablets and Smartphone. The subjects investigated are students of the Faculty of Communication Sciences and Techniques, belonging to the Universidad Veracruzana (University of Veracruz), where the results obtained account for the observation and participation of 30 students, who during the term time February - July 2016, were part of the study. The evidences and the data provided in the collection of information recount the development of their digital competencies, mainly in the use and appropriation of the photographic camera as an instrument of work and of the underutilization of electronic devices such as the case of tablets and Smartphone.

**Keywords:** Digital Competences, Action Research, Photography.

**Resumo**

Na atual era, as Instituições de Ensino Superior (IES) estão na necessidade urgente de transfigurar suas políticas educacionais e seus modelos de ensino - aprendizagem. Isso fala das formas inovadoras de pensar que permeiam o século XXI, onde nos movemos em direção ao conhecimento da realidade e à aquisição de competências. A pesquisa toma como referencial os estudos realizados no campo educacional e contextualizada por meio da atividade cotidiana. O objetivo deste estudo exploratório é descrever o uso do Smartphone no desenvolvimento de Competências Digitais no Workshop de Fotografia de Assunto II. Os sujeitos investigados durante o período escolar de fevereiro a julho de 2016 são alunos da Faculdade de Ciências da Comunicação e Técnicas, da Universidade Veracruzana, onde os resultados obtidos contabilizam a observação e participação de 30 alunos, através da validação dos dados científicos obtidos a partir do paradigma qualitativo e das informações fornecidas pela técnica de pesquisa - ação. As evidências e os dados fornecidos na captação de informações referem-se ao desenvolvimento de suas competências digitais, principalmente no uso e apropriação de dispositivos eletrônicos como o Smartphone.

**Palavras-chave:** Competências Digitais, Investigação - Ação, Fotografia.

## Introduction

At present, academic competences have a prominent role in the educational field. University students of the 21st century demand skills and competencies that allow them to adapt to a social environment of constant change. When thinking about the training of students that respond to the needs that the labor market demands, this situation goes hand in hand with the notion of competency-based education (in terms of knowledge, skills and abilities) and the various conceptualizations that on the words have been written.

For Tobón (2008), the competency approach can be carried out from any of the existing pedagogical models, or also from an integration of them, in the same way, before implementing the competence approach in a given educational institution, there must be a participatory construction of the pedagogical model within the framework of the institutional educational project. In this sense, the term competence comes from performance processes with suitability in certain contexts, integrating different knowledge (knowing how to be, knowing how to do, knowing how to know and coexisting), to carry out activities and / or solve problems with a sense of challenge, motivation , flexibility, creativity, understanding and entrepreneurship, within a perspective of metacognitive processing, continuous improvement and ethical commitment.

On the other hand, Charria, Sarsosa, Uribe and López (2009) and Charria and Sarsosa (2010) propose a distinction of generic competences in academic, professional and work competences. Academics have to do with basic learning that is received from the first years of age, in turn are integrated by subcompetences with different knowledge and skills developed in the school context, professionals, refer to generic competences product of the articulation of methodological, social and participatory skills acquired in professional training and according to these authors, are set in motion in the exercise of work activity, finally, job skills are understood as those attributes or characteristics that each person develops with work experience to so that the individual can perform successfully in his work.

The Universidad Veracruzana aware of this situation introduces the Integral and Flexible Educational Model (1999, p.21), which:

> Faced with changes in lifestyles and culture in today's world, educational institutions and universities in particular have an important role to play as trainers of professionals, with the possibility of generating and applying knowledge that meets their needs. environment and that favor social development with equity (...) In these circumstances it is urgent that future professionals develop through new forms of learning based on integrated education; that is, students are trained with an inter and

transdisciplinary vision that allows them to address the problems of their discipline.

There are several views and positions on the concept of competence, although it refers to a set of knowledge, skills and abilities for the resolution of problems or situations involving a professional activity, it must be considered that it obeys training models that "have been insufficient for respond to work needs and the problems that life brings "(Zabala and Arnau, 2008, p.31). At the same time, it is present in the different educational levels to the degree of being considered as an important pedagogical proposal for the change of school institutions in the knowledge society (García-Cabrero, Loredo, Luna y Rueda, 2008; Luengo, Luzón y Torres, 2008).

To carry out the research, it was important to know what digital competences are possessed by students and what they developed during the Photography Workshop II, these are defined by Gisbert, Espuny Vidal and González (2011) as the body of knowledge , skills and attitudes based on the elementary use of computer hardware, its operating systems, software as a work tool, off-line and on-line communication, as well as the use of ICT that has to do with processes of location, access, obtaining, selection and use of information. The observation in the development and application of the same obeys above all to the approach that the New Educational Model requires to achieve that inter and transdisciplinary vision within the Universidad Veracruzana.

**Digital competences in the educational context**

Studies on the implicit or explicit values of the use of technologies and the development by users of their competences are more common every day. In the field of education and essentially in the university this is clear when it is perceived that "the use of ICT in education is focusing almost exclusively on teaching, encouraging significant learning through technological tools (...) that facilitate the exchange of information "(Domínguez, Álvarez and López, 2011).

It is appropriate to point out that the new learning that prevails in the educational field, has led to the transformation of higher education and to consider the role that technologies have in the development of skills and knowledge, necessary not only in training, but also in the use of the instrumental capacities of the students. As pointed out (Sunkel, 2012, p. 29).

> The development of competencies in the XXI century refers to higher order skills considered essential to develop in the future (...) The development of competencies for the XXI century is facilitated with pedagogies of constructivist orientation: those that enhance a work focused on learning of students, based on projects and problems, with individual and group work that stimulate autonomy and collaboration.

The use of ICT has made it possible to revalue teaching within the educational context, mainly in educational experiences where the management of technical equipment requires precision for the achievement of media products, such as taking a photograph from a certain angle, manipulation of the same through software, the use of a video camera through a rail, as well as the management of the master control for radio and television. The term competence indicates, not so much what one possesses, but rather the way in which one acts in certain situations. They are implicit in the contextual element, referred to when applying this knowledge.

The digital competence in the educational field, points to a myriad of definitions among which are skills focused on the technology itself and those that refer to its application from a pedagogical point of view (Hernández, 2008). Although, the development of professional competences in the training of university students is significant, mainly in institutions where the change of the curricular model is present in each of its activities, it is also necessary to consider that digital competences should permeate each of the educational experiences

Digital competences can substantially transform the teaching - learning processes. In this sense, it is very important to emphasize that ICTs help to optimize the quality of the teaching - learning process at the university level, the integration of them makes us suppose the

effective use of new methodologies and didactic resources that on the one hand help teachers to perform their teaching work, and, on the other hand, give the possibility to the student to generate innovative content for their learning by developing their varied skills.

In addition to this, it is important to highlight the role played by the educational institution, the infrastructure it has, the technological support and services, as well as the constant training not only in the management of technology, but also in the symbolic construction that implies its use.

This assertion indicates the technological convergence that currently occurs in all areas of social life. The individual has become a prosumer, since it not only consumes information, but also generates it, in this sense, ICTs occupy an important place within the educational context, specifically within the university environment, where the management of platforms, Devices and computer programs are in use in the various scientific disciplines. According to the UNESCO report (2008), digital competences in the university environment allow the student to have information and digital literacy, ability to solve problems, security in their devices, environment and data, ability to create digital content and communication and collaboration (development of digital content).

That is why it is essential to provide a definition that approximates the concept, hence a digital competence in the field of education is at the same time a new flexible learning environment, which has the peculiarity of adapting to the needs of users , be they teachers or students, and that allows between a series of advantages, a highly interactive collaborative work, new learning environments, as well as innovative experiences. Not only is the acquisition of knowledge, but also the development of skills and abilities that will allow the student a comprehensive, comprehensive and integrative, this dynamic will lead the student to the appropriation of the use of technologies and therefore the improvement of their skills, that is to say:

(…) those practices through which the subjects, having made an elucidation about the economic, social and ideological determinations imposed by the technological objects that surround them, express in the competent use of those objects, their freedom to adapt them creatively to their own needs , in the framework of the construction of individual and collective autonomy projects (Morales, 2009, p. 118).

**The teaching of photography**

The teaching of photography is intimately linked to practice, which in turn contains a series of skills and abilities that are acquired with the constant exercise in the use of the camera and the discipline that involves technical knowledge, however, it is necessary of the teacher in charge to explain theoretically the theoretical, heuristic and axiological knowledge that you should know and put into practice when capturing an image.

Photography represents the world and its environment, taking pictures is a truth, it became an infallible testimony to believe and accept, which is part of an element of social validity in the photographic discourse. To speak of photography in entering the realms of reality, disrupted by the duality of beauty and death, to combine the tangible and the intangible in the ephemeral elegance of the decisive moment in the act of taking a photo. As Suárez (2008, p.15) points out "photography is at the center of the process of modernity, in the new relationship that man establishes with time, space, technology, memory, death and life. The vision of the other and of oneself, the destruction and reconstruction of the near environment ".

Why is the development of digital competences important in the Photography Workshop? As a teacher who has been imparting the educational experience Photography, over 18 years, has gone through this transformation of the creation of the photographic image and the difference of equipment and concepts, it was necessary to start investigating how much

disposition had change teaching habits and habits, which at first was difficult and had to be learned on the fly.

This century offers an attractive paradigm in the teaching of photography, the digital era leads to a circulation, storage, production and display of images, potentially through social networks, it should be noted that the basic knowledge and complex to learn photography is find through tutorials or the manufacturers of cameras and cell phones, information and practicality is in a playful and effective system.

Within the university sphere, photography is not only taught, its pedagogical use is recreated, where the image acts as a communicative strategy inside and outside the laboratories, it helps students to understand and value their training and the competences they must develop, either through its digital SLR camera (DSLR, digital single lens reflex), only at this moment replaced by smartphones and other electronic devices, Bernal says, "these new generation phones not only present cameras with a novel quality ; These Smartphones offer a multitude of applications for capturing photos and videos, easy to use and with filters that "appear" to be professionals "(2014, p.29).

Faced with this situation of access to written and visual knowledge on the Internet, the teaching of photography as an educational experience poses a need for the educator to effectively transmit the theoretical and technical knowledge in the evolution of photography and adapt the content so that a sector of Young people give meaning to what they do in their personal and social process of relating and interacting. As pointed out Barrón (2009, p. 78):

> For the fulfillment of this task, the teacher is required to master languages, the management of computer science (knowledge), the development of interactive, communicational or socio-relational competences (knowing how to be) and the management of human relationships (including the need for personnel management, group coordination and teamwork), as well as a series of requirements called operational (know-how), linked to the application of knowledge to specific situations.

In turn, in this complex world it is necessary to define key projects with specific objectives to achieve quality products, based on voluntary teacher-student participation, a combination of intellectual experience and, on the other hand, their technological skills as well as network management , its production, diffusion, auditory and visual organization, is a school work of multifunctionality of adaptation in a world of constant change. As well as:

> know the didactics and the resources used in class (...) for future educators since, as there are schools that have sufficient technological resources, there are others where the deficiencies can be an impediment to the integral formation of the students. (Casasola, López y Waldo, 2012, p. 107).

The proposal that was made to young people to work with their Smartphone, take pictures with what they use daily, give their place to technology, which is used in a playful way without the desire to produce large photos, hence the delegitimization of anyone can take a photo. Learning to live with the everyday, is part of what is offered to promote the gradual knowledge of photo material and create a common project of criticality, quality and image display through the medium they use: the social network.

## Method

For the research teacher, this field work involved the involvement of exercising an active look, a memory to carry out informal interviews, write notes and support from co-workers who collaborated with the project. Below is a series of research questions that gave rise to the project:

What technological competences should the student develop in relation to Photography?
What kind of competences are priorities to develop in the student, in this matter?
How to apply these competences in a real work situation?
What utility do these competences represent in professional and social development?
Is it necessary for the student to possess additional skills or competencies?

As a teacher, how should I innovate the teaching - learning process?

What kind of information and communication technologies should my students handle?

For what purpose?

Designing a methodological strategy leads to the analysis of the pertinence of which is the correct path that helps to know a certain reality, for this reason, and after making a thorough review on the subject, it was concluded that the study was qualitative and of an exploratory nature.

The general objective of the Educational Experience has to do directly with the graduation profile:

Acquire theoretical-methodological knowledge defined to intervene in various professional and academic practices enrolled in the field of communication.

Be able to analyze social, political, economic and cultural phenomena and,

Assume the digital ability to develop professionally in the media.

For this reason, the universe of this study was a total of 30 students of different semesters, students of the educational experience Workshop Photography II, (ranging from the second to the eighth semester), with an age range between 18 and 24 years, six of them recursaron the experience and 24 they attended it for the first time. The representative sample of the students observed and to whom the interview was given was of 10 students, three of them enrolled in a second opportunity and seven attended the educational experience for the first time. It should be noted that to assign the number of students was taken into account the degree of use they have with ICT, the willingness to experience and the development of their skills, during the practices.

The research was oriented to the understanding and interpretation of human phenomena, within a sociocultural and historical universe, permeated by axiological knowledge, which is constantly located in the search for meaning and meaning of the experiences that individuals or collectively have individuals.

The model presented below was made from the intervention experience of the action research technique within the educational field, as an option to improve the teaching praxis, from the reflexive, cooperative and transforming action of their pedagogical daily actions, and that in the words of Colmenares and Piñero (2008, p.100) affirm that:

> The research action in its historical journey has developed two major trends or trends: a distinctly sociological trend, whose starting point were the work of Kurt Lewin (1946/1996) and continued by the Chicago anthropologist Sol Tax (1958) and the sociologist Colombian Fals Borda (1970), the latter gives it a marked ideological and political connotation; the other side is more educational, and is inspired by the ideas of Paulo Freire (1974) in Brazil, L. Stenhouse (1988) and Jhon Elliott (1981, 1990) a disciple of Stenhouse in England, as well as Carr and Stephen Kemmis ( 1988) of the University of Deakin in Australia.

Historically and in the mid-1940s, the American psychologist Lewin (1946) carried out his studies from a social and scientific perspective, which integrated experimentation with social action, in a model defined as research-action. Since that date, there have been countless studies conducted on this cyclic exploration process, currently recognized as a methodological option to improve educational practice.

For the purposes of the study and with the purpose that the chosen technique will contribute in some way to improve the educational program of the Photography Workshop II experience, in terms of its planning, programmatic content, competences that the student must acquire, as well as the teaching practice, the technique of action research was chosen "considered as a generic term that refers to a wide range of strategies carried out to improve the educational and social system (Latorre, p.23).

The action research as a methodological option contributed to the improvement of the technological competences of the Photography Workshop II students, since they were

considered as subjects of intervention and propitiate participatory processes through tools, skills and abilities, knowledge and values that benefited the teaching of the photograph.

**Phases of Action Research (Latorre Model)**

The following phases are described as part of the Research-Action model, point out the central aspect that involves making a series of organizational and personal changes in the way of imparting an educational experience, it involves a process of change and improvement within not only a subject, but the academy and the same educational institution, requires continuity and permanence, it is a practical inquiry conducted by teachers collaboratively, in order to improve their educational practice through cycles and reflection. (Latorre, 2008).

**Phases 1. Problematization.** Be part of a reality, with the intention of improving a situation. It is the action with which the investigation begins and is characterized by making explicit and precise What is going to be investigated and why and for what? Be part of a problem or a situation that must be analyzed and intervened for improvement. For the purposes of the research, it refers to identifying the situation in which the students of the Photography Workshop II are, since it is difficult for them to develop their digital skills, since most of them do not have a camera and they are prevented from performing their daily practices within this subject. So many times they use their phones or electronic tablets to fulfill the educational experience.

**Phase 2. Diagnosis.** Situational analysis of what you want to improve. Once you have identified the problem, you have to question whether you have enough information on the subject. Since in spite of not having the technological infrastructure to carry out their practices, the teacher as an observer is given the task of assessing the performance of the students in terms of knowledge, disposition, creativity and dexterity to carry out a diagnosis within the group, and with This will allow the academic to have a previous study of the group in which they wish to intervene.

**Phase 3. Design of a Change Proposal.** Propose in terms of action, in this phase and after conducting the situational analysis by the teacher, proceeds to the design of an action plan, this must be adapted according to the characteristics of the group, the members of the group, the context and of the conditions of the institution. That is, an action plan is designed, and imagine possible interventions along the lines of causing an improvement on the detected problem. As a technique capable of contributing to a good design of the action plan, it is necessary to point out the way in which it is discussed through questions among those who make up the team. Prepare possible actions to be undertaken aimed at improvement. Implement action strategies to improve. In this phase it is also necessary to prepare the "field", that is, to decide how the research will be presented to the participants (students), if support resources (videos, tape recorders) will be necessary if permits, materials, etc. are to be negotiated; In short, it would be making all the necessary preparations to undertake the action plan. (Latorre, 2008)

**Phase 4. Application of Proposal.** In this phase the subjects of the research are explained what is expected of the class and their participation, so that the academic observes the process of involvement, see their performance and their ability, in this phase the teacher can make notes and even generate graphic or audiovisual information of what is happening and that allows him to later reflect on his teaching practice and the response of each of his students, analyze whether despite not having sufficient technological infrastructure (reflex digital cameras), they can develop their digital skills through analogue cameras or state-of-the-art technological devices such as tablets and smartphones.

**Phase 5. Evaluation.** Analyze the information generated during the intervention process and evaluate the reality observed through performance, interviews, work reports or logs, photographs or video recordings, which give way to the interpretation of the data obtained.

**Development of instruments to gather information**

Although it is true, action research works with qualitative data, descriptions, appreciations that express qualities, what matters is what the observed object provides, the techniques are: observation, deep analysis, their instruments are often unstructured , nevertheless, they are progressively building valuable information for the research teacher.

For the treatment of the instruments and the collection of information, it was always essential to be an observer, to be attentive to the learning changes that each student experienced, to see what skills they developed, for this, it was necessary to determine the type of observation to be made. , in this case, it was structured, participant, individually and located not only in the classroom, but also outside it.

It was very important to have means of verification, such as photographic practice, where the camera was a mechanical device of invaluable help for the recording of visual evidence, the written account of lived experiences was a means that enriched the photographic practice and obtaining of informative wealth. The same thing was to take notes of the developed classes to recognize the mistakes of both the teacher for not explaining well an activity, and the student not knowing their equipment well or not following an order. The techniques and means of verification that were the core of the investigation are described below:

## Results

Observation:

Regarding the observation, this had as purpose to diagnose the digital ability of the students of Photography Workshop II. The technique within the investigation - action acquired a different meaning, since it allowed to explore and determine the route and the actions to follow. The realization of this technique was carried out during the development of the classes, at the time in which the study was conducted, and was observed inside and outside the classroom.

The actions observed in the students are the following:

a) Interaction with digital technologies, this activity within the observation process, allowed to diagnose the use of the camera and electronic devices. What he showed as evidence that students do not know their photographic equipment, and that it was necessary to teach them to use the camera as well as tablets and smartphones through their action mechanisms.

b) Digital literacy, stressed that it is always necessary to establish the extent to which students seek information related to their team. It was notorious to observe that few students are given the task of researching through the network, the type or model of electronic device they have and the camera or lens they possess, as well as the scope they can achieve with its use.

c) Protection, management and care of your devices. Although they are guided on the management of their equipment, students are not careful about them, so it is necessary to constantly recommend them about cleaning, the use of their devices, not exposing them to sudden changes in temperature, between other indications.

d) Resolution of technical problems, without any doubt, it will always be necessary to explain how they can improve their photographic shots and give them practical recommendations for capturing their images.

For the process of this information, the field journal was considered as an important verification document in the collection of experiences and practices carried out during the class, since it allowed to systematize the research routines to improve them, enrich them and transform them, through the analysis and the interpretation of the information gathered served as a support to link the theory with the practice, through this instrument was achieved:

1) Value an innovative experience in the use of a camera, smartphone or mobile device, since, although every day they capture photos, they do not do them with the proper methodology and processes, they do not know the possibilities that the integrated cameras to smart devices own.

2) Encourage the student to develop educational proposals that respond to the immediate reality through their creativity.

3) Promote flexible, creative and participatory curricular transformations, according to the needs of the subjects and their community, seeking a quality education and meaningful learning, in which the student sees on a daily basis the development of their own competences and evaluate with it his performances achieved.

4) Implement processes, methods and photographic techniques through the didactic use of Smartphones.

5) Create permanent conditions so that the innovative experience in the use of devices (tablets and smartphones) becomes an alternative practice, along with the use and management of a professional SLR camera.

Regarding the interview as an inquiry technique, it allowed obtaining diverse representations. These were made to 10 students, through an interview guide as an instrument of inquiry, which, among other things, allowed us to detail the students' discussion elements. The space in which they were made was inside the cubicle assigned for that purpose during the months of May and July 2016.

a) The purpose of the interview was to inquire about the skills or competences of the students, both generic and those digital skills that must be developed in relation to practical subjects such as Photography.

b) Usefulness that these digital competences provide for the subject of Photography Workshop and in general for their professional training.

c) Teaching-learning processes based on innovation and skills development.

**Figure 1.** Resultados. Representación de las competencias digitales sobre el uso de dispositivos (Smartphone) por parte del alumno con relación a la fotografía

Uso y dominio del Smartphone, como opción de herramienta fotográfica

Uso de filtros y aplicaciones para la captura, manipulación y diseño de la imagen

Uso de herramientas digitales para a difusión de sus imágenes fotográficas

Fuente: Elaboración propia

With regard to the use that students give to the devices with which they work daily in their school activities are the smartphones or smartphones, these equipment products of the imperative technology have been added as tools that enable the development of technological skills in the students.

*"In my case being connected and using my equipment has allowed me to develop my school activities in a traditional way, I take notes, I consult, I research, I look for images, I share information, I use Apps to design an image, I can edit and present my tasks a more effective way" (Entrevistado 1, 22 años).*

This affirmation by the student implies the didactic use to facilitate the teaching - learning process that must be fulfilled in each one of the educational experiences, especially in those that imply a practice, as is the case of the Photography Workshop, as well He himself speaks of a technological literacy that both teachers and students must share.

*"When the teacher in charge of the experience suggested doing research on the use we give to ICT to develop our skills or abilities in the use of technology and specifically, on our cell phone, and all the possibilities we could find in it , I realized that I have not exploited my equipment to the maximum, let alone developed my skills "(Interviewee 5, 23 años).*

**Representation on the process of innovation in teaching - learning**

Although the use of portable devices does not substitute any means of learning, if it is necessary to point out that it comes to offer an additional resource to support the teaching-learning processes, in this case for the proper development of the educational experience. , it is necessary that students have the equipment and tools to use, among other things because it provides disjunctive use in situations where the student can not buy a camera because of its high cost, however, it is still attractive use of technological tools as instruments of educational mediation.

*"Although I know that a cell phone can never be a substitute for a camera, I must admit that during this semester I learned more than in the previous one, I see that I am not so silly capturing images, that, although I used to take photos almost daily with friends or family to upload it to Instagram", (Entrevistado 8, 20 años)*

As for the development of technological competences, it has served to expand the physical and mental capacities of students and of those who observe it, a product of the technological culture that surrounds us and that has gradually been permeating educational institutions, where see the relationship of digital needs, digital competencies and teacher practices.

*"I was surprised to see the capacity of my cell phone in terms of the options it offers. Take pictures is easier, it is better understood when you have a theoretical basis and the photos are not so common anymore, because you learn to use all the tools that have a cell phone for the intervention of the image, in addition to we are asked by the teacher, to print our images that in our opinion are the best to be able to see them in a tangible way. "(Interviewee 3, 18 años)*

Regarding the identification of digital skills in students, these are manifested to the extent that it uses digital tools for school use, a product in turn of its status as a digital native.

> *"I use the cell phone to send whatsapp, check the face and I had thought that the quality of photos taken by the cell phone was of lower quality, but when I realized the cost of the camera it was almost impossible to buy. The teacher encouraged us to take advantage of what we had at this time and in this case was the cell phone and this is how he showed us that, with the theoretical knowledge of photography, we could understand the camera of the cell phone and I realized that my photos they began to change in their composition, in their color and in their optics". (Entrevistado 7, 19 años)*

With the insertion of ICT, in the educational field of Higher Education advocates the insertion of digital skills to function in the current social context, this leads to the design of teaching strategies and new ways of learning, as well as new educational scenarios that allow both teachers and students to explore their skills in the use of technology, since an integral, flexible and transversal education is sought.

**Representation of additional skills or competences**

For the implementation of the action research, it was necessary to recognize the process of appropriation of tools and knowledge, and the construction of conceptions with which the student already had, as well as their communicative, technological and socio-affective abilities, their diversity of thinking, which allows you to get to know your environment or your social reality before joining the University, in addition to it some students come with knowledge at a technical level in design, in management of social networks or are highly interactive people.

> *"Since I was 10 years old I got my first computer, later it was a cell phone, that's how I started to love and search for information, to look for tutorials of what caught my attention, I shared and they shared information with me, I started to like retouching towards the photos, as well as towards the video editing, this brought as a*

*consequence that when deciding which career to study, I chose communication, however, my idea of the career changed because there are many theoretical elements that are important to learn and that one believes that knowing edit still or moving image we can do TV or video". (Entrevistado 7, 18 años)*

Regarding the interview as an inquiry technique, it was found that within the process of action research, students valued the digital competences they already possessed and that in practical educational experiences (workshop), they are able to master the use of technology, among other things to:

a) Creativity in capturing an image
b) Development of critical thinking for the planning of your photographic shots
c) Technological skills with the daily use of the camera and capture devices
d) Use of software and editing platforms
e) Share information and digital content
f) Storage of information, on all types of devices and through the internet (cloud)
g) Recovery of information and data
h) Creation of spaces in the network for the exhibition of their works (virtual galleries)
i) Knowledge of different languages, visual, audiovisual and hypermedial

## Discussion

The research carried out tries to give answers to the results obtained, according to the research questions that were initially raised. The technological competences that the student must develop around the exercise of photographic practice must be linked in the first instance to digital literacy, has both theoretical and practical implications, that is, acquire the necessary skills for the management of current equipment, the present technologies that arise in the field of photography and that will be necessary to know and manage within their work practice. Photography as such has gone from analog to digital and every day the equipment is more sophisticated.

During the study, it was found that there are limitations to the student's learning of photography, since not all of them have state-of-the-art equipment, this is usually complicated for them, because they lack the economic resources to buy a reflex camera of an affordable cost to your budget.

However, within the areas of opportunity presented, is the skill with which students use gadgets of the latest generation, which can be accessible and comfortable for them.

Among the strengths presented by the object of study analyzed are:
Both teachers and students have the opportunity to develop a better teaching-learning process with the use of devices, in the same way to implement innovative strategies in the teaching of photography, to develop general skills in students, by using appropriately, responsible and effective a diversity of technological tools.

Likewise, it is necessary to point out that within the priority competences to be developed by the student in this subject or educational experience:

a) Obtain knowledge about multiple literacy, since you must learn the visual language of photography, and how this language can interact with other digital contents.

b) Application of its technological competence in the handling of electronic devices and most frequent techniques of processing photographic information.

c) Understand the social and cultural implications of photographic production and its dissemination in digital media.

d) To foster a critical and responsible attitude through generic cognitive competence, mainly in the production and use of its digital content.

It is important to indicate that it is necessary for the student to possess generic skills or competences (know-how, know-how, knowing how to know and know how to live together), mainly when the purpose of the educational experience is to provide tools for their incorporation into the workplace, that within a real work situation the digital competences allow that the knowledge learned during the class, can be applied in the best way, not only is

it to be skillful or capable in the development of their digital skills, but it will have to be aware of the ethical and labor implications involved in the exercise of their work.

As a teacher, it allows to be constantly updated and trained by teaching practical experience, it is a priority to acquire new knowledge and skills related to the use of electronic equipment or devices, but at the same time with innovation, creation, management, and transmission of one information. In other words, maintain a continuous learning.

It concerns the academics - researchers who adhere to this methodology, form theoretically and methodologically, adducing the guidelines proposed by Latorre, in order to diagnose the problems and conditions in which the actors or subjects investigated, in order to establish a commitment and contribute to the search for improvements within the daily life of an educational institution.

Within the competencies that led to a good performance in the context in which the practice was developed, it can be deduced that the integration and activation of knowledge, abilities, skills, attitudes and values in the students was very important, it was observed during the time in which the research was carried out, the application of the collection techniques and instruments:

General and transversal competences: Ability to apply knowledge and comprehension in a way that indicates a professional approach to their work or profession, and that possess the technological competences that are customarily demonstrated through the application of Smartphones or smart devices, in the capture and development of the photographic image within the field of study.

Specific competences: Capacity and ability to manage the processes of direction and realization of photographic media.

Ability to use the techniques and processes of photographic composition through the camera that has the mobile device. It should be noted that the course is designed to use a camera (DCLR), a cell phone or a tablet.

Capacity and skill for creativity and innovation through the exhibition of photographs within a virtual gallery (Social Network).

## Conclusions

The results of the research made it possible to show that digital competences favor the performance of students when carrying out activities within the Photography II workshop. In this sense, it is important to implement strategies by the teacher to strengthen the skills of their students for the realization of photographic projects that involve the development of digital skills.

The instrumentation of the use of the Smartphone for the Photography Workshop II classes is viable, as an alternative form of learning, since due to the high cost of photographic equipment it is sometimes impossible to acquire it, it is easier to have a telephone than a camera.

The Smartphone allows, among other things, the immediate visibility of the image, its editing and improvement, so it is important that students are taught to make their best photographs known by doing their own image editing and create a narrative that is of interest to them. a captive audience, hence it is important to teach them to create and use portfolios and virtual galleries for the exhibition of their work.

It is understood by the student of the degree in Communication Sciences that a smartphone or mobile device will never be a substitute for a professional camera, but as an immediate tool in the work of the communicator, in matters of teaching the smartphone It is presented as an alternative to approach the knowledge and performance of photography.

On the part of the teacher, it is necessary to understand the use of the Smartphone, since it is positioned and is becoming more and more rooted in the student, since it does not have a camera of at least 8000.00 pesos (the cheapest and useful in the market) mobiles can be used for educational purposes. Teaching with a smartphone is not to forget the theoretical and technical part of the camera, the principles are applicable, the job is to identify what is speeds, diaphragms, isos, types of lenses, all the above is brought by a cell phone. However, the foregoing is unknown to the user.

In curricular should take into account in the study programs the use of mobile devices and their possibilities for editing and creating an image. Every day smartphones are more competitive in the workplace, so it is seen among journalists and designers, to name a few, who develop their professional activity with this tool.

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