

# Internet Addiction: Processes for the Creation of Educational Prevention Project – New Approach Based on Digital Competence

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## ABSTRACT

Different educational programs aim to reduce or control internet addiction. These are based on a traditional methodology that can be recognized as an exposition or master class (participatory or not). In this type of educational program, the student acquires a passive role since they are focused on informing the students of the dangers associated with the development of internet addiction, but not on the treatment or changes in behavior. If one reviews these educational programs, one can see how they have little effect on students. For this reason, a new educational program approach has been created that fights or limits internet addiction through a methodological proposal that also focuses on increasing digital competence while limiting or controlling the evolution of internet addiction. In this article, the design is presented.

## KEYWORDS

Collaborative Work, Digital Competence, Educational Projects, Guidelines, Internet Addiction, Internet Use, New Approach, Prevention Projects

## INTRODUCTION

One of the main concerns of both teachers, researchers and families is the Internet and how students access it. Access time is also a major concern because several studies hypothesize that exposure time facilitates the addiction process (Tsitsika and col, 2014). This concern has been exacerbated by the Covid-19 pandemic, which has resulted in strict containment measures, including school closures. This has greatly influenced students' habits in terms of Internet access and time, since changing the study scenario from school to home has meant that they have been less supervised in this task. Teleworking has created an individualized home environment where parents have not been able to supervise their children's Internet access time and use. Likewise, the figure of the teacher has moved

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to an online context (Ruiz, 2020) where there are limitations to exercise this supervision in the same way as it was planned in the presence.

The main factors of Internet addiction are, on the one hand, the time of exposure to an Internet access device and on the other hand, the fact that the addicted subject suffers from psychological pathologies before the development of this addiction.

## **BACKGROUND**

There is a wide discussion about whether Internet addiction is a real pathology, but more and more institutions are concerned about its evolution. The educational community and the media such as the Newspaper of León echo news such as those of “Proyecto Hombre” from Spain that “fears that the marked abuse of new technologies will turn into addictions” (LNC, 2019). This institution is dedicated to recovering people from different addictions related or not with drugs, providing support to 2,150 adolescents in 2018. This is a figure that grows every year, especially among adolescents because the brain in this stage of maturity has a different evolution in its different areas. This is the case of the limbic system and the prefrontal cortex, whose maturation in this stage results in more marked impulsive processes, which increases the risk in the adolescent’s behavior (Tereshchenko and Kasparov, 2019).

According to Griffiths (2000), Internet addiction is a non-chemical type of addiction also called behavioral, which involves human-machine interaction. In this sense, Internet addiction is an addiction without substance, which means that it is a behavioral addiction that depends on the attitude of the addicted individual. It is not yet considered a pathology by the Diagnostic and Statistical Manual of Mental Disorders or DSM-5 (American Psychiatric Association, 2014), although the latest advances in this sense indicate that it will soon be accepted. Recently, online gambling addiction has been registered as a pathology by the DSM-V, which shares several risks with Internet addiction (Critselis and col, 2013). In addition to this approach, there are others of a biopsychosocial nature, authors such as Tereshchenko and Kasparov (2019) consider that this addiction combines both psychosocial factors or problems and intergenerational psychopathological risk factors. These psychosocial problems involve troubles with peers and/or adults. Here the family has an important role in the coexistence with subjects whose characteristics are compatible with those of an addicted subject since the positive or negative relations with the family influence the progression of the addiction.

The consequences of Internet addiction related to the development of pathologies or disorders are really shocking: depression, anxiety disorders, attention, deficit hyperactivity disorder, anxiety, obsessive, compulsive disorder, social phobia and aggressive behavior.

The study by Carlo and col. (2013) revealed that the disorders that have a more direct relationship with Internet addiction are ADHD and depression disorders. As has been shown, when this disorder appears in adolescence, a time when the subject is in a period of academic training, a reduction of the usual hobbies may occur due to lack of interest (Echeburúa and Requesens, 2012; Pérez del Río and Martín, 2007). This generates boredom and a greater approach to the Internet. Loneliness increases due to the loss of interest in friends or partners to the detriment of Internet access, reduced academic performance, increased obsession with constant consultation of virtual media (email, social networks...) and the development of anger, irritability and bad behavior when not getting access to the Internet when they want it and the time they want it.

All these consequences derived from the development of Internet addiction are serious disorders for the educational community. For this reason, different initiatives have been implemented to prevent Internet addiction and such behaviors associated with it.

## MAIN FOCUS OF THE ARTICLE

### Guidelines for the Design of Educational Programs for the Healthy Use of the Internet

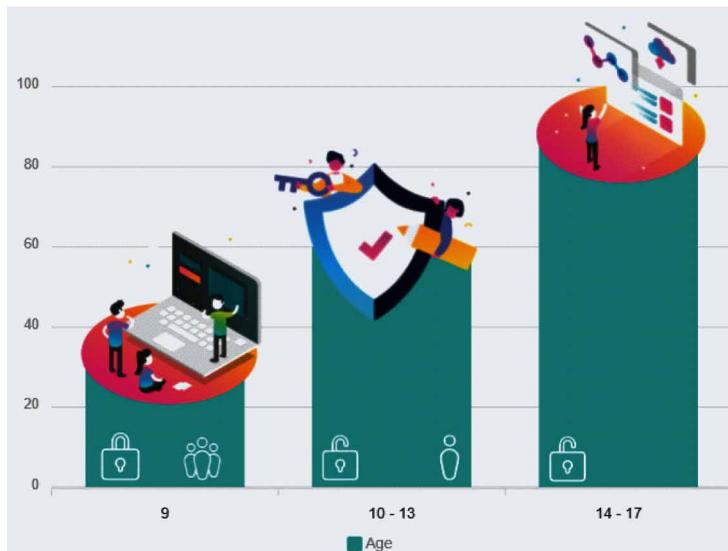
In education, the approach to Internet addiction is very different compare to how it is investigated in clinical research studies (López and Sánchez, 2020). According to Carbonell, Castellana and Oberst (2010), in education, the prevention of Internet addiction involves the creation of educational programs focused on its prevention. These are carried out by entities external to the schools or standard educational centers and different educational strategies are used for their program such as talks, prevention programs through tutoring, workshops... all of them outside the official state educational curriculum.

In the educational and research community related to Internet addiction, there is a demand for this type of action to be part of the educational curriculum. This has been made known by the UNESCO MIL Curriculum, “The empowerment of minors in the face of the aforementioned risks should be included as one of the basic lines of any educational curriculum (...) as it is included in the MIL Curriculum, but also as a transversal educational line present in the day-to-day life of any school” (Tejedor and Pulido, 2012, p. 70).

There are different phases for the creation of an educational program. According to Prats, Torres, Oberst and Carbonell (2018), these are divided into three stages: the first stage is up to 9 years of duration and the educational focus should be on teaching how to surf the Internet, always setting standards and defining virtual spaces for consultation, taking care that the contents are appropriate for the age. The 2nd stage of training should be aimed at people between 10 and 13 years old, who should be accompanied and supervised without limiting a certain autonomy that should be encouraged and informing them of the risks of the Internet. And in the case of the 3rd stage, this should be focused on the ages between 14 and 17, providing more autonomy, less supervision, and encouraging critical spirit, creativity and making them aware of the criminal responsibility they acquire from the age of 14.

The new approach that the authors of the article have designed is based on the 2nd stage proposed by Prats and col. (2018), as a training stage in which students between 10 and 13 years old must

Figure 1. Stages in the creation of an educational program. Source: Prepared by the authors based on the studies of Prats, Torres, Oberst and Carbonell (2018).



have some supervision by their teachers or monitors of activities with Internet and its use, but never conditioning the development of their autonomy.

## Different Approaches to Educational Projects

There are many educational programs whose objective is to reduce or control Internet addiction that bases their focus on awareness (Labrador and Villangos, 2010; Sánchez-Carbonell, Graner and Quintero, 2010) of the importance of avoiding the development of an addiction and/or abusive use of the Internet. In this type of objective, the direct use of technologies during the time of the workshop is limited or non-existent, because that time of exposure is associated with a greater probability of stimulating the addiction. They aim to propose alternative activities to the Internet (Echeburúa, 2012; Sánchez-Carbonell, Graner y Quintero, 2010) as an example of this approach is the Project *Desenred4te*, of the Government of the Canary Islands (2019).

Within this informative approach, there is a variant that in addition to informing, make some practical workshop focused on computer use. This is the case of the Workshop on a responsible use of ICT of the City Council of Murcia. Besides, there is another aspect of this approach in which self-directed programs are created, in which the subject performs them without supervision. This is the case of *Preven-TIC*, from the Valencian Community.

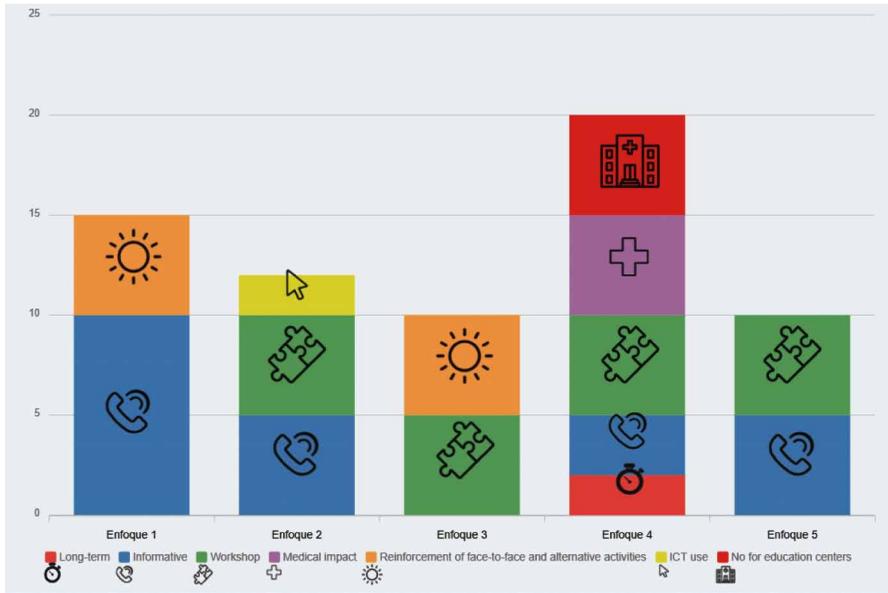
Programs that have this type of objective are usually built through an informative approach, which is the most common (Babín, 2009; Echeburúa and De Corral, 2010; Hough, 2011; Sánchez-Carbonell, Graner and Quintero, 2010). Other educational projects of this type also seek to strengthen social and communication skills in order to reinforce presence in the face of virtual communication codes (Echeburúa, 2012; Echeburúa and De Corral, 2010). An example of a project with this approach is the educational program of the IES centre in *Cassa de la Selva*, Genora, by Sánchez-Carbonell and Quintero (2010).

But it is not the only one, there are others who seek to master a higher task, identifying possible subjects at risk of Internet addiction and controlling the progress of that addiction through the educational program designed to reduce or control this addiction. The development of educational programs, of transformation of the behaviour of an addicted subject, is the most expensive since they require a program maintained in the time, whose objective is not so much the prevention but the generation of a change of habits and/or behaviours in the addicted subject. In addition, there is an evolution of this type of educational programs in which they do not focus on the potential addicted subjects, but directly on those who have already developed Internet addiction. This type of educational program requires the specialized intervention of health personnel linked to mental health, a requirement that sometimes is difficult to obtain by different educational entities. These programs already work on improving resilience and coping with stress, focused on reducing and dealing with withdrawal syndrome (Fernandez-Montalvo and Lopez-Goñi, 2010). This is the case of the program for the prevention of misuse and addiction to new technologies in schools of the *Triora Monte Alminara* Center (Soto, Miguel and Perez, 2018) which had a psychiatrist, doctor, psychologist and nurse.

On the other hand, the other programs based on the disclosure are of simpler cut and can be implemented directly in the traditional educational context, since sometimes with a single punctual intervention in the time is enough to fulfil this labour of informing.

In the case of the educational program depicted in this article, the objective is not to treat potential cases of Internet addiction, but to educate through prevention in misuse and abuse of the Internet, thus reducing or controlling the potential development of Internet addiction. It is a challenge to create an educational program whose objective is to contain Internet addiction due to the wide variety of approaches that are handled. By reviewing the literature, it has been possible to develop a new approach based on the recommendations of the relevant authors in this field of study. The approach created is close to that used in the creation of the *Aditec\_I* Project by M. Chóliz, Marco and C. Chóliz (2016) and *Clickeando* (2018) from the Valencian Community, in which they expect

Figure 2. Visual summary of the different types of educational project approaches. Source: own elaboration based on the data researched for this article.



to inform, raise awareness and train skills. This new approach intends to go even further without reaching a behavioural change.

If we look at figure 2 we can appreciate certain limiting factors such as the dissemination processes that have no or little use of ICT, and the promotion of alternative activities taking the focus of knowledge away from the Internet. Besides, how achieve behavioral changes and overcoming the abstention syndrome are attached to the need for medical care outside the educational center. Each approach is aimed at a different objective and can be worked on in different contexts, some being applicable to educational centers and others not.

This new approach presented here avoids the typical informative approach about the dangers of Internet addiction that aims to generate fear-based learning. It is considered to be a very limiting educational technique as it provides prejudiced perceptions from a negative perspective of what the Internet is or is not and how it can affect people. A simplistic view of the great complexity that this addiction is in reality. This type of educational initiatives, based on the fear of the Internet, have really important consequences since they limit the students both in knowledge and future management, generating citizens who are not competent in the use of the Internet, a technology that is essential for access to the current and future labour market. In fact, currently, Digital Competence is part of the 8 Key Competencies proposed by the European Union that every competent citizen must have (EUR-Lex, 2006). Therefore, the dissemination of risks on the Internet are taught in a transversal way, integrated within activities and exempt from a direct talk. This avoids instilling fears and does not use restrictive language that creates rejection.

### New Educational Approach

Having exposed the educational approach that will not be carried out, below is the new approach designed based on the methodology of collaborative work, going beyond prevention, aimed at developing digital competence using throughout the training ICT tools and the Internet. A methodology that puts the student at the centre of learning and development of media and information literacy.

With this approach, the aim is to educate by doing, allowing the student to experience while learning. Therefore, techniques of inquiry, guided discovery, reciprocal teaching, assignment of tasks, creativity, problem-solving, workgroups, etc. have been included.

The goal of this new approach is to achieve an increase in digital competence while controlling Internet addiction. To achieve the advancement and evolution of any competence (Martinez-Abad, Torrijos-Fincias and Rodriguez-Conde, 2016) it is important to integrate collaborative work (Cabezas and col., 2016), as well as the tools linked to that competence. To achieve responsible and competent citizens in the digital world it is essential to expose them to it. In this case, collaborative work is the backbone of the educational program through which the various activities are structured.

Communication between the student and the teacher/tutor is essential to achieve an atmosphere of security and collaboration, trust and maturity. Therefore, no language based on fear, prohibitive or counterproductive is used (Prats, Torres, Oberst and Carbonell, 2018; Carbonell, Castellana and Oberst, 2010; Wolak and col., 2008), but the development of critical capacity as one of the main objectives.

As has been seen, the development of Internet addiction has as a decisive factor the correct relationship between students and their families and/or environment (Oliver et al., 2009; Carbonell, Castellana and Oberst, 2010). Therefore, this approach is open to integrating the educational community into the training process to make them aware of the reality of this Internet addiction and thus understand the educational approach they should support once this specific training is over. Families are one of the three pillars of education and it is necessary that, as far as possible, they are aware of the training their children receive, can participate and continue it. Therefore, we propose specific activities to improve the relationship with ICT between parents and children. This is an approach that Solera, Gutiérrez and Prieto (2014) already worked on in their program for the prevention of technology addiction in young people.

Although the entire educational community is considered in this new approach, the centre of teaching-learning is the student, being the protagonists of the training and enhancing the relationship between them (Carbonell, Castellana and Oberst, 2010).

The characteristics of the technology in which we want to train, the Internet, require an important level of media and information literacy. The mass media, social networks and other channels carry information through multiple Internet profiles and their consumption is daily. In order to avoid other related problems, the aim is to attend to the development of media and information literacy by promoting peace and criticism against prejudices (Pérez-Tornero, 2009).

For this purpose, a wide range of activities has been created to use ICT in a responsible way, with a critical sense, obtaining reliable information from the net, carrying out effective searches, communicating, relating and entertaining oneself and, above all, building knowledge using Web 2.0 tools, generating good habits of behaviour towards the use of ICT. Specifically, we intend to work on three fundamental aspects through ICT:

- Effective search of information in networks.
- Collaborative work in networks.
- Security in the network.

According to Flechsig and Schiefelbein (2000), educational projects with a workshop model, such as ours, should contain the following phases: Initiation, preparation, explanation, interaction, presentation, evaluation.

In our model, we have used as a guideline the work order previously exposed:

1. **Initiation phase:** Delimitation of the theoretical, sampling and organizational framework. It was created in conjunction with the instructors, to integrate their experiences, over the years, in the delivery of this type of training into the project model.

2. **Preparation phase:** Information to the participants about the project and the tasks or learning goals. It is carried out previously, to the educational centres interested in this training.
3. **Explanation phase:** Presentation of the work plan to the subjects. This phase is always initial, on the first day of the educational program and is carried out in two ways: to the teacher and to the participating subjects. The explanation to the teacher is very detailed to involve him/her, from the very first moment, in the experience, they are about to live.
4. **Interaction phase:** An exposition of strategies, use of tools and formulation of solutions/proposals. In each of the sessions, in the beginning, the monitor makes a presentation of what is going to be done, how and with which elements, to focus attention and provide a halo of mystery that promotes interest and attention.
5. **Presentation phase:** The focus is on the individual who facilitates the personalization of cases and discusses solutions. This phase is carried out in each of the training sessions because into the groups, not being very big, among 15-20 students, it is possible to attend to each student or group of students and individualize this response.
6. **Evaluation phase:** Final discussion on results and possibilities of application. This phase has been carried out through the process of evaluating the scope of the project, taking as reference the pre-test and the post-test both in the development or containment of Internet addiction and the evolution of digital competence.

Furthermore, this approach is aimed at mobilising the competence of learning to learn, thus acquiring greater personal autonomy and promoting collaborative work between the three educational agents: teachers, colleagues and parents (Costaguta et al., 2019).

The integration of the teacher's profile in the classroom work during this educational program is considered fundamental so that this specific intervention continues in a transversal manner throughout the training in the schools and institutes of origin of this student body. This training is carried out in a Foundation that has trained monitors to carry it out who invite the teacher accompanying the group of students receiving training to be part of the teaching-learning process, thus taking advantage to train not only in the content (Babin, 2009; Echeburua and De Corral, 2010; Hough, 2011; Sanchez-Carbonell, Graner and Quintero, 2010) but in the methodology and ICT tools. In order to get teachers attention, at the beginning of each session, they will be given an evaluation document that should be read before starting so that they can identify, throughout the training session, those moments when they should be especially attentive in order to be able to answer the questions a teacher are asked later on. In this way, teacher will get their attention and be aware of the relevance of the training his students are receiving. The teachers of these students will have total freedom to get involved in this project, being able to participate as one more student, proposing the handling of any tool they consider useful for their students, helping in the creation of materials to work with them in relation to what is being studied at that moment in the classroom, etc. In this case, the teacher is not trained previously as suggested by Tejedor-Calvo and Pulido-Rodríguez (2012), but is a participant in the program, as one more, discovering the subject little by little to enhance the experience as opposed to memorizing the contents. The same happens with the families (Prats, Torres, Oberst and Carbonell, 2018), who are not trained directly but indirectly, which is believed to favour their participation in the program.

This approach is measured by the control of Internet addiction through the application of the CERi questionnaire (Beranuy, Chamarro, Graner and Carbonell, 2009) which determines the level of risk of initial Internet addiction, passing the questionnaire again at the end of the program.

According to the analysis of educational projects approaches by López and Sánchez (2020), this new approach is framed in Level 3 which corresponds to the integrated approach that works from information dissemination, awareness and skills training. There is one more level ahead, Level 4, but our approach does not cover it since this level is destined to educational programs that work not only in the prevention but also into the treatment of addicted subjects. This is not the chosen approach,

since we do not force to have psychological care personnel, and the objective is not to treat cases since we want to act directly on the natural educational context.

## METHODOLOGY

In order to carry out this research, a documentation process was followed to identify all the necessary study factors to achieve the creation of this new educational project model.

First, the scientific literature was accessed to identify existing educational programs on the healthy use of the Internet. Once the most important ones in Spain had been found, a study was made of how these projects addressed the risk factors of Internet addiction. In addition, their characteristics were studied to understand the disadvantages and advantages of each one. On the other hand, the different approaches through which they had been created were studied, identifying the authors responsible for them. With a view to the creation of the educational project itself, the different phases of creation of this type of project were studied, as well as the different existing scales for measuring Internet addiction.

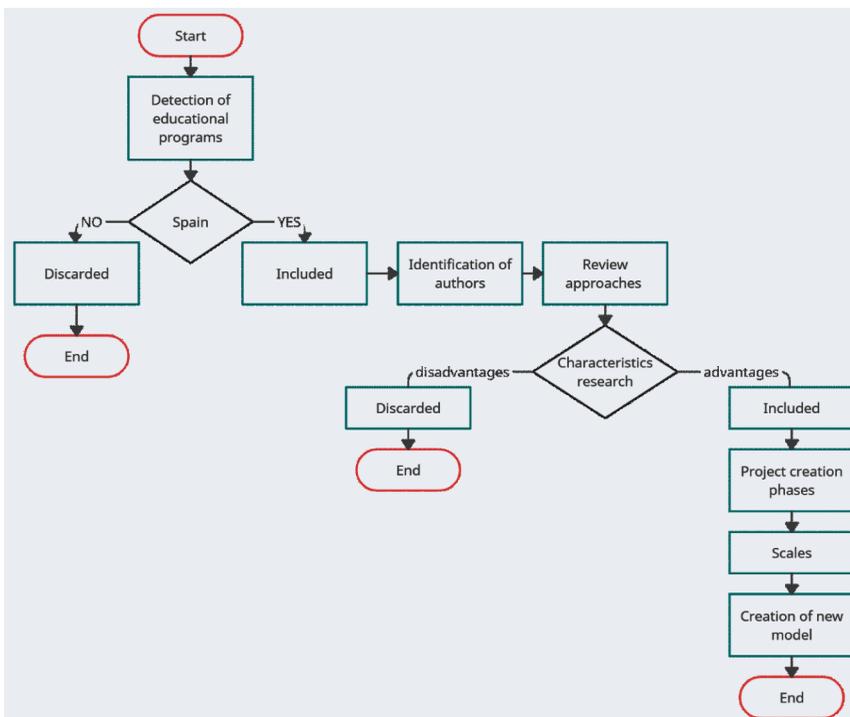
Finally, the strategies for addressing the risks of Internet addiction subtracted from the reference projects, as well as integrating the phases of project creation also studied. Besides, we included the measurement scale we decided as the most appropriate for this new model of educational program.

To explain how the work was done, the flow chart shown in Figure 3 is presented.

## CONCLUSION

The objective of the research is to carry out an important sweep of the main approaches to educational projects linked to the correct use of the Internet in order to understand their limitations and create a new model.

Figure 3. Diagram of the work process. Source: own elaboration.



The results obtained allow us to conclude that the new educational model includes all the advantages of the other approaches while limiting their disadvantages. Among all of them, a series of clear limitations were found: little use of ICTs, lack of knowledge and transversal competencies in Internet management and the failure to strengthen digital competence as a protective factor, the need for specialized medical personnel, and the progressive application over long periods of time.

To make up for these shortcomings, a new approach has been designed that can be applied in a short time, not dependent on medical staff, including a use of ICT beyond the merely computerized but focused on the Digital Society, in addition to a light and integrated dissemination in the practices that the subject enjoys being the center of his own learning. It is not only intended that the subjects understand the addiction to the Internet (informative approach), but it seeks to control it while increasing digital competence by focusing on the Learning to Learn Competence and Media and Information Literacy (work of transversal competences), essential to have greater autonomy by the subjects. All this through the Collaborative Work methodology (Hammid, Haddadi and Bouarab-Dahmani, 2017), key for the development of competencies, favoring greater autonomy of the subjects before the Internet from the beginning. This approach also takes into account the importance of integrating the family and teachers in the activity of prevention and skills development. All this from a playful approach, using a close and normalized positive language.

We propose the use of the ICT in a responsible way, with a critical sense, with proactivity to obtain reliable information from the net, to make effective searches, to communicate, to relate and to entertain without forgetting that the Internet is the access to the world information, through which we can build new knowledge using the tools of the Web 2.0, generating good habits of behaviour towards the use of the ICT.

However, a program of activities has been designed based on techniques of inquiry, guided discovery, reciprocal teaching, assignment of tasks, creativity, problem-solving, workgroups, etc.

To measure the effectiveness of this new approach, the CERI questionnaire has also been integrated to understand how the indicators of Internet addiction evolve.

Through this proposal it is considered that it will be possible to reach a new level of knowledge and skills development regarding the good use of ICT, without isolating this program, providing teachers with an experience that they will be able to continue into the formal education in a transversal way. The development of digital competence as well as others that enable students to be, in the future, competent digital citizens, is everyone's responsibility, including the formal educational curriculum (Wilson et al., 2011), saving the risk of falling into an Internet addiction through digital health guidelines.

The limitations of this study are longitudinal in nature since the project designs investigated have not been studied by their authors or others over time to see their long-term performance. The projects resulting from the designs have been implemented primarily through one-time interventions. The only exception was the *Desenréd4te* project (Government of the Canary Islands, 2019), which was tested for 4 years, with slightly positive or insignificant results.

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