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Informal learning strategies for transmedia skills in adolescents in Uruguay

Estrategias de aprendizaje informal de habilidades transmedia en adolescentes de Uruguay

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The article presents the main findings in relation to the objective of identifying the informal learning strategies and skills that adolescents develop through transmedia practices pertaining to the Uruguayan case within the *Transliteracy* research. The methodology used consisted in the combination of a questionnaire; workshops on video games and four workshops on participatory culture; interviews; and an online ethnography. The results are linked to imitation, problem solving, evaluation, playing and learning by doing.
Keywords: Transmedia skills, learning strategies, adolescents, Uruguay.

Se presentan los principales hallazgos de la investigación Transliteracy *para Uruguay en relación al objetivo de identificar estrategias de aprendizaje informal de habilidades que los adolescentes desarrollan a través de prácticas transmedia. La metodología consistió en la combinación de cuestionarios, talleres sobre videojuegos y cultura participativa; entrevistas y netgrafía. Los resultados se vinculan a la imitación, resolución de problemas, evaluación, jugar y aprender haciendo.*
Palabras clave: Habilidades Transmedia, Estrategias de aprendizaje, Adolescentes, Uruguay.

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Introduction

Within the framework of the Horizon 2020 European Union projects, the Faculty of Information and Communication (FIC) of the University of the Republic (Universidad de la República) took part in the research project *Transmedia Literacy. Exploiting transmedia skills and informal learning strategies to improve formal education* (hereinafter: Transliteracy). Its general objective is to understand and analyze how adolescents from eight different countries[4] put into use and share their transmedia skills, and to identify the informal learning strategies they develop in their transmedia practices.

Transmedia literacy is understood as a set of skills, practices, values, sensitivities and learning and exchange strategies developed and applied in the context of a new collaborative culture (Scolari, 2016). Also, the project seeks to complement its findings with the generation of didactic tools that favor formal education in the integration of said knowledge and methodologies.

The research identified several axes in which transmedia skills could be visualized in action, namely: videogames, social networks and creation practices and content exchange within the framework of that participatory culture. Based on these axes, the proposal for fieldwork that was carried out in four public high schools in Montevideo is presented here.

The present article gathers, on the one hand, a first approximation of descriptive character on the main findings[5] related to the informal learning strategies developed by adolescents in their transmedia practices; and on the other, some preliminary reflections about their value as an input for teaching practices and teaching strategies in the classroom (Winocur, Morales, Barreneche & Gutiérrez, 2017a; Winocur, Ceretta, Cabrera, Rodríguez & Morales, 2017b). Those strategies are related to teaching, imitation, problem solving, evaluation,

4 The countries are: Spain, Portugal, Italy, Great Britain, Finland, Australia, Colombia and Uruguay.

5 Obtained through fieldwork and focused on the results of interviews and workshops.

"learning by doing" and playing. These findings share the concern in the specialized literature about "digital dissonance" (Black, Castro & Lin, 2015, Buckingham, 2007, Clark, Logan, Luckin, Mee & Oliver, 2009), that is, the existing gap between the teaching-learning proposal offered by schools, and the skills acquired by young people in digital environments and how to promote their complementarity.

Methodology

The research *Transliteracy* had a methodological design that privileged an ethnographic approach that has proven to be a reliable and well-established methodology for education studies (LeCompte & Preissle, 1993; Street, 2014; Wolcott, 1997), youth and new digital media (Horst, Herr-Stephenson & Robinson, 2010; Kraidy & Murphy, 2004; Leander, 2008, Lange & Ito, 2010; Valdivia Barrios, Herrera & Guerrero, 2015; Winocur, 2016).

In this case, we resorted to approaches that include industrial ethnography, specifically fast ethnography (Handwerker, 2001, Jordan, 2012), and participatory design methods (Crabtree, 1998, Halse & Boffi, 2014). These methods are generally characterized by: research activities that take place in a shorter time frame; the multidisciplinary nature of the teams; the use of mixed methods of data collection, and an emphasis on the findings that lead to applied interventions (Pink & Morgan, 2013). Especially inspiring was the notion of "short-term ethnography", which involves intensive excursions into people's lives.

Data collection

The fieldwork in the four schools consisted of the application of: a) 67 questionnaires to know the perceptions and uses of ICT in adolescents; b) four workshops on videogames and four workshops on participatory culture which explored adolescent transmedia practices; c) 48 in-depth interviews with adolescents who proved to be active in the transmedia field; and d) online ethnography[6] on a Facebook page that several of the

[6] It is a research technique that takes elements of the ethnographic approach and applies them to the study of communities and cultures created and developed in the virtual world.

teens claimed to follow. The analysis presented in this article is linked to the findings obtained from the workshops and in-depth interviews.

The selection of the four schools was based on the following criteria: 1) That they were located in the city of Montevideo;[7] 2) that the four schools were public;[8] 3) that 2 secondary schools were of basic cycle (12-15 year-olds), and 2 belonged to the second cycle (16-18 year-olds);[9] 4) that 2 high schools were located in unfavorable socioeconomic contexts and 2 in favorable socioeconomic contexts.[10]

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7 40% of the enrollment of students in secondary education is located in Montevideo (capital of the country).

8 In Uruguay the majority of students attend public high schools. Public enrollment is more than five times higher than private enrollment. In 2015, 147 163 students enrolled in basic secondary education, 120 749 of them attended public schools, while only 26 416 attended private schools. In 2015, 116 793 students enrolled in upper secondary education, 99 617 of them attended public schools, while only 17 176 attended private schools (Ministry of Education and Culture, 2015).

9 In Uruguay, the system of secondary education is organized in two cycles: Basic Cycle and Second Cycle. The first corresponds to the first three years of secondary education (1st, 2nd and 3rd) that respond to the ages of 12 to 15 approximately. The Second Cycle brings together the last three years of secondary education (4th, 5th and 6th). Each cycle takes place in separate buildings called "Liceos". This forced the selection of two basic cycle secondary schools and two-second cycle schools to meet the quota established in the design of the project.

10 The sociocultural differences are given by the environment where the high school is located and sometimes by the origin of those who attend. "Progressively, territorial segregation was generating segregation in the educational system. Given that public schools in Uruguay recruit their students among the inhabitants of the area in which they are located, to the extent that the territories were losing social heterogeneity, the same occurred with schools. ... The expression socio-cultural segregation of the educational system will be used to refer to the distribution of the population between the educational centers in a differential way, following and reproducing the socio-cultural inequalities" (National Institute of Educational Evaluation [INEEd], 2014, p.84).

In order to select the groups of students within each of the four schools, the collaboration of the teachers was requested.

Data processing

Insofar as the research design is qualitative, the theory emerged from the information collected, as argued by the Grounded Theory (Glasser & Strauss, 1967). However, the adoption, from the beginning, of a totally inductive research approach seemed counterproductive given the transnational nature of the study and the size of the sample and the work teams. For this reason, it was necessary to have a first set of descriptive categories that would allow a common base from which to develop each map of transmedia skills and informal learning strategies.

Informal learning

The *Transliteracy* research project widely develops the state of the art in relation to informal learning strategies (Scolari, 2017). The concept of informal learning can be traced in Dewey's pedagogical work (1938), which highlights the value of experience as an element that favors learning, although reflection, continuity and interaction are also required. The same concept was taken then by Knowles (1950) especially for adult education -*andragogy*- in which he focuses his research. Classification of formal, non-formal and informal education is strengthened by its appropriation by UNESCO. The publication *The World Crisis of Education* (Coombs, 1968), highlights the need to develop different educational paths from the formal-school and recognizes, in addition to those educational areas that are planned and systematized, other elements:

> Which in any broad view of learning, are educative in nature, often profoundly so. They include things that are often taken as much for granted as the air we breathe —books, newspapers, and magazines; movies, radio, and television broadcasts; and above all the learning that goes on daily in every home. For the present, however, we must confine our view to those activities which are consciously organized for the express purpose of achieving certain prescribed educational and training objectives (p. 9, own translation).

Thus, formal education is understood as one that is highly institutionalized, graduated and structured, of which the educational system takes care, from pre-school to post-graduation. Non-formal education refers to organized, systematic educational activities, with specific educational objectives, but carried out outside the formal educational system. Coombs and Ahmed (1974) develop one of the definitions of informal education that has become classic, understanding it as "the lifelong process by which every person acquires and accumulates knowledge, skills, attitudes and insights from daily experiences and exposure to the environment" (p. 8, own translation).[11]

Marsick and Watkins (1990, 2001) point out that informal learning can be "incidental", when it occurs as a by-product of another activity, including formal learning, but is not planned by a teacher; in this sense it is "generally intentional but not highly structured" (2001, p. 35). In turn, Marsick and Volpe (1999) argue that informal learning is characterized by being predominantly experimental and not institutional, and can be found in many different situations: it is integrated with daily routines; it is not highly conscious; it is fortuitous and influenced by chance; It is an inductive process of reflection and action and is linked to the learning of others.

On the other hand, there is the definition by Livingstone (2001) that is mainly oriented towards self-directed learning, where the student himself defines the process.

In the Uruguayan case, the production of Vaz Ferreira (1963) stands out; he introduces the concepts of *staggering and penetrability* in education. Staggering typically belongs to formal learning, in which a teacher prepares with intentionality and cares a teaching plan that does not exceed the capacity of the student at each stage of their development. In penetrability, however, the learners can be contacted with material that is partially unintelligible to them, this can happen informally, and results in a greater intellectual and motivational stimulus.

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[11] In Uruguay, the current General Education Law (Senado y la Cámara de Representantes, 2008) defines and establishes the responsibility of the State for the development of both formal and non-formal education.

Nowadays, in addition to traditional spaces such as libraries, museums and parks, informal learning finds its place in social networks, websites, online communities and other means of digital interaction; and research on informal learning was expanded to digital collaborative environments and analyzed how adolescents use social networks to learn (Sefton-Green, 2006, 2013).

Learning strategies are specific actions used by the learner to make learning easier, faster, more enjoyable and more transferable to new situations (Oxford, 1990). Wenden and Rubin define them as "any set of operations, steps, plans, routines used by the student to facilitate the collection, storage, retrieval and use of information" (1987, p. 19). In the model of Cseh, Watkins and Marsick (1999), learning strategies are subsequent to interpretation, which includes the interpretation of experience and the examination of past and alternative solutions, and prior to the action (new solution).

According to Black, Castro and Lin (2015):

> Formal learning environments continue to be important, while informal learning environments acquire more and more meaning as they play a key role in the modern education of our young people ... Young people in our digital age are self-taught, forming communities of culture as they immerse themselves in social networks outside our classrooms. (p.2, own translation).

Based on the state of the art of informal learning strategies, the *Transliteracy* project developed a taxonomy composed of six modalities: learning by doing, problem solving, imitation, play, evaluation and teaching (Scolari, 2017). The modalities are summarized below:

TABLE 1
TAXONOMIES OF LEARNING STRATEGIES.

Modalities	Description
Learning by doing	It refers to the strategy by which the learners put into practice a series of activities related to the skills they want to acquire. These activities usually include trial and error processes through which they successfully acquire those skills.

Modalities	Description
Problem resolution	It refers to the strategy by which learners facing a problem or issue are motivated to acquire the necessary skills to solve it.
Imitation / Simulation	It refers to the strategy that enables learners to acquire skills from sharing moments of practice with others who have already acquired the skills they wish to learn.
Play	It refers to the strategy by which the learner acquires skills by playing.
Evaluation	It refers to the strategy by which the learners acquire or perfect a skill from self-assessment, peer assessment of their abilities or by evaluating others' abilities.
Teaching	It refers to the strategy by which the learners acquire a skill from the transmission of knowledge to others and this inspires them to improve and refine a skill or acquire a new one to improve the transfer process towards others.

Source: Own elaboration based on Scolari (2017).

According to the proposed taxonomy, the next section will present the main results in a first descriptive approach. It should be noted that the use of this taxonomy is for theoretical purposes, since, in the field work, the categories can be seen in interaction, amalgamated or intimately linked with each other, so, for the purposes of observation and presentation of results, in some cases, they are merged. Also, in some cases, the modalities of technological use described or experienced by adolescents in the fieldwork led us to give relevance to some other elements connected with informal learning strategies, such as their cooperative nature, which emerges from the collective dimension of being online. The challenge is to be able to relate the results with proposals for the integration of transmedia skills in formal education.

In this sense, it is important to take Sefton-Green's warning (2006) about the knowledge we have about traditional learning and how it does not directly apply to how adolescents and children learn informally with information and communication technologies (ICT). Hence the relevance of studies that explore informal learning practices related to technology (Sefton-Green, 2013; Williamson, 2013). This is how it is

challenging to analyze the feasibility of overcoming what Buckingham (2007), Clark et al (2009) and Black, Castro and Lin (2015) among other authors, have called "digital dissonance" which means overcoming the gap between the ways in which young people use media outside of school, in everyday life, and the ways in which they are used within them.

Main findings

The findings in relation to the informal learning strategies that adolescents develop to learn about video games, participatory culture and social networks,[12] on the one hand, refer specifically to the strategies themselves (those that were most useful to them), and, on the other, to a process of naturalization in relation to these learning processes in their daily lives.

The research had as one of its main products the construction of transmedia skills and informal learning strategies maps.[13]

For illustrative purposes, and in a summarized manner, a mental map of informal transmedia skills and learning strategies is presented with the main analytical categories found in the fieldwork in Uruguay (Winocur et al, 2017b).[14]

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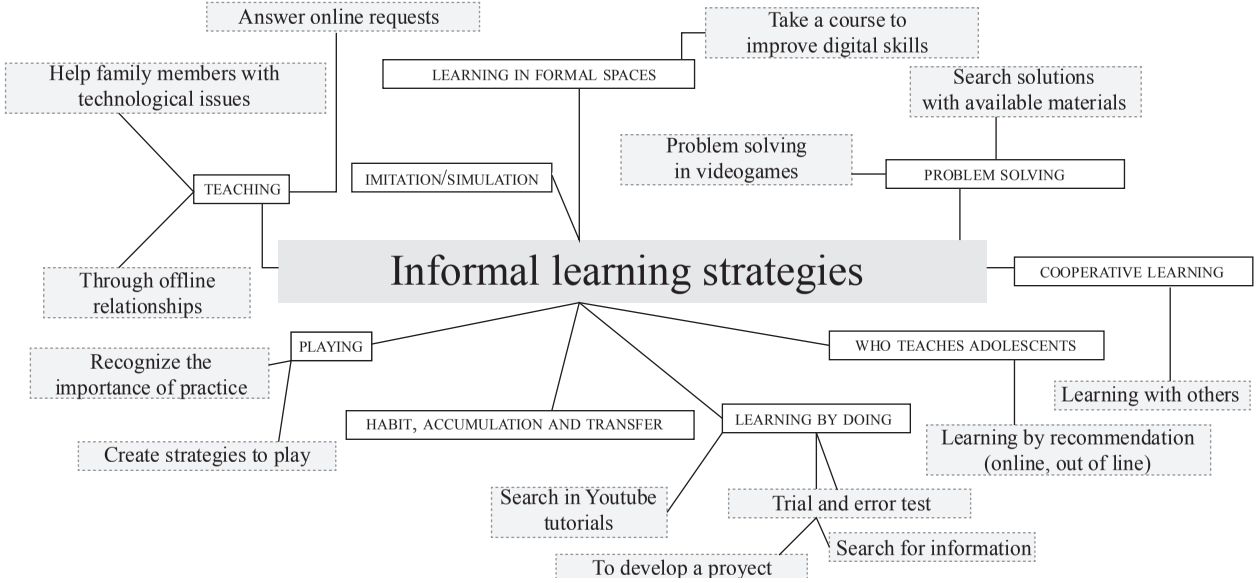
12 It should be noted that the results refer mostly to the practices related to video games since the most active adolescents in the project defined themselves as "gamers". The interrelation of social networks, video games and participatory culture in the daily lives of adolescents requires a particular analysis that is not the objective of this article.

13 Each of them is made up of different categories of analysis that emerged from the fieldwork and that derive from the six modalities of informal learning strategies identified in the framework of the entire *Transliteracy* project.

14 The fieldwork of each country required that the general taxonomy of the project be redefined by the particularities of each case.

FIGURA 1

MAPA DE ESTRATEGIAS DE APRENDIZAJE INFORMAL



Fuente: Elaboración propia

In all the stages of the fieldwork it was found that adolescents have great difficulty explaining or describing the informal learning processes they go through, or the strategies they put into play to learn to use the different applications, programs or tools they mention, or to become more expert in their use. In general, it was necessary to ask many times and in different ways, and in some cases the interviewees could not verbalize the mechanisms by which they managed to learn, but they returned to general descriptions of what the game, the tool or application they were talking about implies. In some cases, it emerges from the interviews that access to a manual, or the mere fact of understanding which keys are used for each function, does not imply having learned to use the tool.

Informal learning and awareness about it, in order to describe or conceptualize it, are not processes that necessarily occur together. Being able to put into words something that the subjects perceive about themselves and their cognitive activity when facing situations that force them to solve problems or develop new strategies, implies a process of reflection and learning in itself. This makes the depth of activity of the subject who learns more complex, and, in the case of the dialogue with adolescents, makes it more difficult for them to contribute insights into the modes of learning that they display when they interact with the digital world.

Although to a large extent adolescents in their daily lives naturalize informal learning strategies for transmedia skills, it was possible to identify the centrality of some of them in their digital practices. The main findings for each analysis dimension considered in the map in a descriptive manner are summarized below (Winocur et al, 2017b).

Learning by doing and playing

Adolescents mention "learning by doing", which means to try, practice, make mistakes and try again, as the main strategy of informal learning.

The trial and error strategy is the one that best describes the processes of informal learning of adolescents, who said that practicing is the only way to overcome obstacles and overcome the difficulties encountered in the processes.

> [INTERVIEWER][15] How do you become familiar with the controls? - [ADOLESCENT] ... what I do is, for example, press any key and memorize. RT, for example: shoot, LT: aim ... First I press any, the one that comes out, and I see, if I shoot, if I aim, if I bend down or surcharge. It depends on how you become familiar. - [INT] And the games have ... like instructions, something like that? - [A] No. It would be ... if you want to be faster you go to the list of controls. - [INT] So they do have some. [A] Yes. - [INT] Oh, but you do not like them. - [A] I do not like it, because it pretty much reveals everything to you. And I like to familiarize myself with the controllers at the same time I'm playing the story (Adolescent high school basic cycle).

In particular, in the field of video games practice is concretized by "playing". The gamers develop different strategies to improve their gaming experiences. Some are less controlled ("I touch everything" said some teenagers), and have to do with a curiosity to try different possibilities that the tool provides. Others are a bit more systematic and are related to the search for combinations of actions already known.

One of the aspects that stood out most, was the number of times they had to play at a certain moment of a videogame in order to solve a problem and move on. It is observed that the high motivation for the task itself (the pleasure of playing and the interest that the game arouses) greatly mitigates the frustration of finding themselves successively in the face of an obstacle that they don't know how or they cannot yet get past. Among the gamers the repetition over and over again of a sequence of a game reinforces the motivation to eventually solve the problem.

> [INT] This thing of getting stuck, you told me an episode connected to that. It happened to you at other times, when was the last time you got stuck in something like that? - [A] No ... the issue is that ... I swear, I was stuck and there was no way around it. - [E] Three days in a row you were trying. - [A] Yes, I would go to school, I went, I would get out at 4 o'clock in the afternoon, go back home, have snacks, and then I would start playing until around 8pm. My mum would then tell me to stop and go to sleep. That is, eat,

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15 [INT] refers to the *Interviewer*. [A] refers to the *Adolescent*.

> have a bath, sleep. Four hours, all three days, playing that same part. It was a part that really what you had to do was take a little jump, say, it was like coming and jumping over here. It was a short part and four hours for that, that is, I must have done it, I do not know, a million and a half times. And I could not ... (Adolescent, second-cycle high school) .

In some cases it is about repeating the same sequence of actions until you can do it at speed, or at the correct time; in others, different ways of solving the problem are creatively tried until the correct one is found. This practice is valued positively because it is linked to personal merit and persistence. While other practices, as will be seen below, can be negatively valued.

The practice of "learning by doing", or by trial and error, in many cases is carried out in the search for information. Those who have more intensive uses of video games use this strategy, or content production when they require more information to deepen their knowledge aimed at achieving their objectives.

> [A] Yes. What I'm doing now is resorting a lot to Facebook, what do the *League of Legends* players do? which I do not know, it encourages me to play some champions that I do not use. For example, I look at a channel used by almost every player, and I see how to deal with that champion, because there are champions who are too difficult to use ... if you do not have good skill. (Adolescent, high school basic cycle).

In relation to the search for information, on the one hand there were those who pointed out that they do it frequently and that finding sources from which to obtain answers facilitates the task.

> [Speaking of a videogame] [A] ... later I download it and I see tutorials, how to play. - [INT] Where do you usually look for tutorials? - [A] On YouTube. - [INT] How do you search? Show me some [Adolescent takes the computer, goes to the Internet browser ... finds YouTube, enters search words "how to play Counter-Strike"]. [INT] Do you always search like this, "how to play", and the name ...? - [A] Of the game. - [INT] And there you have some favorite channels or something? - [A] Yes, no, I have some channels, yes,

> that some play, for example ... - [INT] Some play what? - [A] The Rubius, Vegeta ..., vista. - [INT] If you find those videos, do you prefer to see those? - [A] Yes, if not, I'll put another one. - [E] And what are those videos like? - [A] You ... show step by step everything you have to do, and you play it (Adolescent, high school basic cycle).

On the other hand, for those who identify themselves as gamers, the use of tutorials is questioned when it involves solving problems that should be solved by practice and learning by doing. They understand that you can see *gameplays* or look for tutorials to learn more about videogames, but not to obtain tricks that solve obstacles; the latter in many cases is seen negatively, as a way of "cheating".

Problem solving and cooperative learning

Although it is not included in the taxonomy of informal learning strategies, in the fieldwork it was observed that, in addition to the practice of trial and error at the individual level, there are also collective and cooperative strategies to favor the solution of difficulties in the videogames and in content production practices.

Through different platforms, the gamers have an important interaction and cooperate mutually to solve the queries of some of their members. That is, there are varied and simultaneous search and exchange practices through different media and sources. WhatsApp groups, online forums, Facebook pages or the existing chats in video games are some of the tools used to solve problems and learn.

> [INT] And have you ever, for example, written on a blog, asking how to do something? - [A] ... Sometimes I say ... In Yahoo answers I go and say "hey, how is it done? how was the crafting recipe for such a thing?" and they tell me "so much wood, so much timber, so much stuff". Yes, (Adolescent, basic school high school).

For example, a gamer who is stuck in a part of the game can find comments from other gamers who have passed that stage of the game on websites or specialized forums, but at the same time may want to see a gameplay of that game in which that part appears, or be the one to ask

the question in a WhatsApp group of their friends or other gamers to get advice. Probably, then they will reply saying whether the help provided worked or not.

> [A] At first they teach you, the game has a tutorial that teaches you the main things. And then you have to learn on your own. Or others explain to you, that they already play a lot, and they explain to you, and you ask ... Each server -because it has servers- then each server has its chat and all that (Adolescent, high school second cycle).

In this context, in addition to creativity and learning from experience, problem-solving strategies involve the combination of very diverse strategies and skills. On the one hand, skills such as reading are required: first for a quick reading (both *skimming* and *scanning*), and then detailed readings of the key information. On the other hand, strategies related to establishing hierarchies of information are put into play, for example, in the use of keywords and digital skills to carry out various or successive online searches in different formats. It also requires the understanding and decoding of audiovisual material, as well as social skills to be online.

Imitation-simulation and teaching

Another of the collective informal learning strategies that adolescents practice is "imitation". It could be appreciated that, just as they value practice, adolescents also understand that watching others they can learn the basics to start playing a videogame, produce content or use social networks.

Imitation occurs when teenagers take someone from their environment that motivates them to play, or introduce them to a new platform, application or social network, as a model. In some cases the possibility of exchange with the friend or relative who takes the role of model is included.

> [INT] And how do you learn? - [A] And I learned because of my father. - [INT] He showed you? - [A] He showed me and I tried to imitate him and I practically got it (Adolescent, high school basic cycle).

In other cases, they imitate players who publish their games in gameplay videos or expert users of certain tools or platforms that share their tutorial videos. With these, there is no possibility of direct exchange (mostly adolescents prefer to not post comments to the videos of youtubers that they follow), but there is the possibility of pausing, repeating, looking for other models, etc.

> [E] And you, for example, do you search specific questions in Google or YouTube ...? - [A] Generally what complicates me the most is sculpting. I hate sculpting, because it's complicated, millimeter-by-millimeter. And I put "how to sculpt Blender" and I get the version, I put the version. And it explains more or less. Generally they are not very exact with what they say. They usually say one part, not the other, and that's what I do not like about that. But maybe something helps me and more or less I get the idea of how to do it (Adolescent, basic school high school).

Both modalities involve informal learning strategies that have to do with listening and reproducing sequences or steps. In addition, imitation also tends to share ground with trial and error, in the sense that successive attempts may be needed.

It was also observed that adolescents place themselves in the position of being those who teach others, answering questions or presenting themselves as a model for people they know in the offline world (such as family and friends), or people they know in the online world. When a teenager shows another how to solve a problem, they simultaneously practice and reflect on their abilities. It can be observed that being able to teach another is relevant in terms of their identification as a "good gamer" in the community of reference.

Habit, accumulation and transfer

The adolescents state that once they have learned to play a type of game, or to use a certain tool, these skills are transferred intuitively to other experiences. Thus, the cumulative nature of the learning was visualized: "it's almost like you starting already knowing".

Games of the same type (for example: *shooter* games), social networks or tools designed for the same purpose (for example, photo

editing) usually share the same logic and offer the same types of characteristics (the same commands to move, advance, jump, comment, like, share content, apply filters, cut, rotate, among others) and it is common for platforms and applications to use similar icons or symbols for each of these functions.

The older adolescents pointed out that when they started in the world of video games they were more dependent on tutorials or other means of help, as well as the imitation of their peers, but then they became independent thanks to the knowledge and skills acquired.

That is to say, on the one hand, mechanisms for the transfer of knowledge or skills for the use of different digital media can be identified, and on the other, adolescents report knowledge that they acquire mainly in video games and that serve them to perform in other instances of learning, including in the field of formal education. In relation to formal and non-formal education, adolescents highlighted learning in the field of language or a foreign language (such as English), or elements of history or general culture. They also report that they use social networks as a way of learning about issues that are not linked to the computer, for example, those who are interested in that, look for cooking or musical instruments or makeup tutorials, among others.

Conclusions

Next, some of the main findings are summarized in a descriptive way, and a series of reflections that arise from the analysis of the informal learning strategies of transmedia skills of the adolescents in Uruguay detected in the research are presented.

Among the most frequently detected informal learning strategies are those related to what Dewey (1938) conceptualizes as the value of experience, these are: "learning by doing", "trial and error" and "imitation".

The "trial and error" strategy is fundamentally individual, self-taught and self-directed (Livingston, 2001). Two learning modalities are observed through trial and error: on the one hand, one of a more systematic nature that requires a minimum planning and organization of the tests that will be carried out; on the other hand, a more

spontaneous and unstructured modality in which the learner tries things out instinctively and unthinkingly, a priori, what can be related to the incidental learning proposed by Marsick and Watkins (1990).

With regard to "imitation", it requires a model (face-to-face or virtual) and it can be collective. Adolescents have developed "informal didactics", with a high visual component (what is said has value as long as it can be shown), to show their peers how to solve difficulties or teach a trick to pass a level. The informality of these "didactic" strategies also lies in the fact that adolescents not only show with the intention of teaching, but also in order to exhibit what they know. In this sense, the "show" is not only an informal pedagogical act but also a resource of distinction in a cultural universe, where possessing such skills has a high symbolic value.

The study allows sustaining that there is a collaborative culture that is well entrenched and legitimized in adolescent transmedia practices, particularly evident in the videogame communities, in which strategic skills are highlighted to socialize content and organize online activities. Likewise, cooperation could also be identified as one of the informal learning strategies that young people develop frequently, interacting with their peers based on common interests in games, music, movies or other activities. This observation confirms the point raised by Black, Castro and Lin (2015) about learning through cooperation and in communities of common interests in digital environments.

As stated in Winocur et al (2017a) the finding of the centrality and combination of informal strategies of trial and error learning and imitation is very interesting insofar as they are the forms and models of learning that society proposes: learning linked to repetition and copying, it corresponds fundamentally with the dynamics of the traditional school and simultaneously they are central in the possible "learnings" in the digital context.

In this sense, as stated by Winocur et al (2017a, 2017b), the centrality of repetition and copying can be related to the difficulty and estrangement of adolescents to recognize and describe informal learning strategies, to the extent that they account for the lack of reflection on their own learning. Although when describing the skills required

to manage each of the applications, programs or platforms they use, adolescents were more proficient and confident in the narration, when facing the question about how those skills are learned, many of them found it was puzzling -the answer seemed to be something obvious due to the degree of naturalization of these activities or knowledge.

Adolescents go through their digital experience without developing a self-reflective dimension on the learning they acquire in these scenarios, although it is undeniable that, in the process of exercising their skills, learning occurs.

In this way, we can ask ourselves about how to bring together the informal learning strategies of transmedia skills and the framework of formal education, as is the objective of the *Transliteracy* project. Is the universality of such dialogue possible?

The challenge of the school is to make a critical relationship with the digital universe possible, which is precisely what in the process of recontextualization of the transmedia must require and offer (Winocur et al 2017a). The domain and expansion of the transmedia is not considered a critical process in itself, without the mediation of its place in social relations and without the sense that this holds for the subjects involved in its appropriation. It is fundamental, then, to promote questioning about the implicit visions through the use and appropriation of the transmedia, and not only the uncritical reproduction of their learning logics (Winocur et al 2017a).

To the extent that skills do not occur in an abstract and generic world, but are exercised within the framework of the local, the possible "universality" of literacies, skills and characteristics and needs of different communities must be put into dialogue.

The educational challenge, then, lies in how to recontextualize without decontextualizing, that is, how to foster pedagogical spaces where students can recontextualize these skills in school, so that they are not totally disconnected from the cultural meanings and values they have in their original contexts (Winocur et al 2017a). The challenge, as for so many other crossroads of education, is to build a pedagogical space that negotiates between the different logics of teacher and adolescent sense production.

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