Universidad de **Nariño**

ICT AND SOCIAL INNOVATION AS MOTIVATIONAL RESOURCES: PILOT EXPERIENCE IN RURAL SOUTHERN COLOMBIAN STUDENTS

LAS TIC E INNOVACIÓN SOCIAL COMO RECURSOS MOTIVADORES: EXPERIENCIA PILOTO EN ESTUDIANTES RURALES SURCOLOMBIANOS

Miryam Nancy Ojeda Hidalgo**
Edgar Orlando Ayala Cobo **
Geovanny Alexander Abaunza***
María Dolores Avalos Obregon***

*Research article as a product of research methodologies of the doctoral program in education at the University of Baja California, and collaborations with the master's program in Digital Technologies Applied to Education at the University Manuela Beltrán and GICIL Research Group University of Nariño.

* Ph.D Student in Education., University of Baja California, México, mojedahidal@uniminuto.edu.co, ORCID: 0000-0003-3027-8137.
** Master Student in Digital Technologies Applied to Education, Universidad Manuela Beltran, Colombia, edgarayala.oc@academia.umb.edu.co, ORCID: 0000-0002-7518-5930.
***Ph.D Student in Education in the Knowledge Society, University of Salamanca; Spain, Associate researcher at the GICIL Group - University of Nariño, gabaunza@usal.es, ORCID: 0000-0003-2373-9222.
**** Ph.D. Student Language Studies, specialized in CLIL and Professor of the pedagogy of national and foreign languages at the National University of Chimborazo, Ecuador; mavalos@unach.edu.ec.
ORCID: 0000-0002-8342-7469.

ABSTRAC

The present research considers 70 high school students in rural contexts of southwestern Colombia. The objective was to implement a pilot experience of social innovation mediated with ICT resources through the participatory video methodology as a motivational strategy in language, computer science, and arts subjects, in order to check if the academic performance of these subjects can be favored with technological intervention in their traditional class for 3 months. The research used a quasi-experimental design with non-

equivalent experimental (EG) and control groups (CG). The results from the descriptive analysis of means, frequencies, and dispersion statistics showed that the experimental group intervened with the experience of social innovation (participatory video) mediated with ICT showed increases in their academic performance in the three subjects. There was a significant increase in the subject of arts, obtaining better performance, followed by computer science and language. In conclusion, the results confirmed the research hypothesis, showing that the integration of the communicational strategy (Participative Video) of social innovation mediated with ICT resources in conjunction with the activities of the curricular program, can increase academic performance in secondary education students in a rural context.

Keywords:

Social Innovation, ICT, Rural School, Motivation, Participative Video

RESUMEN

La presente investigación incluyó a 70 estudiantes de secundaria en contextos rurales del sur occidente colombiano. Con la implementación de una experiencia piloto de innovación social mediada con recursos TIC a través de la metodología del video participativo como estrategia motivacional en asignaturas de lenguaje, informática y artes, se buscó comprobar si los rendimientos académicos de dichas asignaturas pueden ser favorecidas con la intervención tecnológica en su clase tradicional por 3 meses. La investigación utilizó un diseño cuasiexperimental con grupos experimental (GE) y de control (GC) no equivalentes. Los resultados a partir de análisis descriptivos de medias, frecuencias y estadísticos de dispersión evidenciaron que el Grupo Experimental intervenido con la innovación social (Video participativo) mediada con TIC evidenció incrementos en sus rendimientos académicos en las tres asignaturas, mostrando un incremento significativo en la asignatura de artes, seguido por informática y lenguaje. En conclusión, los resultados apuntan hacia una confirmación de la hipótesis de investigación, mostrando que la integración con la estrategia comunicacional (Video Participativo) de innovación social mediadas con recursos TIC en conjugación con las actividades del programa curricular pueden incrementar los rendimientos académicos en los estudiantes de educación media en contexto rural.

Palabras claves:

Innovación Social, TIC, Escuela Rural, Motivación, Video participativo.

RÉSUMÉ

La présente recherche a porté sur 70 élèves de l'enseignement secondaire dans des contextes ruraux du sud-ouest de la Colombie. Cette étude s'est développée avec la mise en œuvre d'une expérience pilote d'innovation sociale médiatisée par des ressources TIC à travers la méthodologie de la vidéo participative comme stratégie de motivation dans les matières de langues, d'informatique et des arts. L'objectif était de vérifier si la performance académique de ces matières peut être améliorée par l'utilisation de la technologie dans leur classe traditionnelle pendant une période de 3 mois. La recherche a utilisé un plan quasi-expérimental avec des groupes expérimentaux (GE) et de contrôle (GC) non équivalents. Les résultats de l'analyse descriptive des moyennes, des fréquences et des statistiques de dispersion ont montré que le groupe expérimental ayant bénéficié d'une innovation sociale (vidéo participative) favorisée par l'utilisation des TIC a amélioré ses résultats scolaires dans les trois matières mentionnées au paravent avec une augmentation significative dans la matière des arts, suivie de l'informatique et des langues. En conclusion, les résultats nous indiquent une confirmation de l'hypothèse de recherche, montrant que l'intégration de la stratégie de communication (vidéo participative) de l'innovation sociale médiatisée par les ressources TIC et en conjonction avec les activités du plan curriculaire peut augmenter la performance académique des élèves du secondaire dans un contexte rural.

MOTS CLÉS :

Innovation sociale, TIC, école rurale, motivation, vidéo.

INTRODUCTION

More than 90% of the Colombian country is considered rural and a third of this percentage lives in environments with precarious and vulnerable educational conditions (Ramírez & De Aguas, 2017). In addition, in the last forty years, these rural peasant families have been one of the most violated actors with high poverty schemes and articulators of decontextualized and failed reforms, which only fall back on subsistence processes (Carrero & González, 2016; Gaviria-Mesa et al., 2018)**.** Added to this, the promises in educational policies have been inconsistent and distorted with this sector, and educational coverage is not equitable in urban and rural areas (Duarte et al., 2012).

Nevertheless, the Colombian government has begun to raise awareness of improvement processes, showing concern for solving this problem in the rural educational

context with digital strategies, such as the National ICT Plan 2008-2019 where all Colombians are informed and communicate making efficient and productive use of ICTs (Information and Communication Technologies) "to improve social inclusion and increase competitiveness" (Ministry of Information and Communication Technologies [MINTIC], 2008); the "Plan Vive Digital" 2014-2018, which seeks to "consolidate the Colombian country as a leader in the development of applications with social utility to promote the progress of the poorest Colombians and thus consolidating a country in peace, more equitable and more educated" (MINTIC, 2014); and the ICT Plan 2018 - 2022 "El Futuro Digital es de Todos", which considers "ICT environments for digital development, digital social inclusion, citizens and households empowered in the digital environment and sectoral and territorial digital transformation" (MINTIC, 2018). Thus, the strategic use of ICT, proposed by the Colombian State, tends to develop educational solutions to the problems of Colombians, through the strategic use of the digital revolution and technology. These premises are aligned with the observations of several authors as mentioned by Vázquez-Cupeiro, & López-Penedo (2016, p. 257) who say that "new technologies are presented as support tools in the implementation of educational methodologies, contributing to the innovation of teaching practices by opening the door to a world full of possibilities that, without them, would not be possible". Lugo et al. (2014, p. 11) state that "the integration of technologies in education is necessary to promote the democratization of knowledge and ensure greater social justice and quality education" and shows that "ICT can be an opportunity for the review and transformation of educational practices more connected with the contemporary and with the world of students" (p. 12).

Although such statements about ICT may be valid, it is frustrating to note that although rural educational institutions are being favored with internet connectivity and ICT infrastructure, a certain percentage of teachers have deficiencies in ICT skills. This reveals a picture of digital stagnation, which disarticulates the advantages of such technological inputs and becomes possible barriers in their teaching-learning processes and in the motivation of knowledge apprehension in the student body (Pozuelo, 2014). This is why ICT strategies articulated in educational policies should have a sense towards the transformation and reformulation of teaching-learning processes and their cognitive pillars in their training proposals, and not only aim at a paradigm of endowment and strengthening of technological infrastructure (Lugo et al., 2014, p. 13). Considering these impacts, it is important to visualize

what possibilities have permeated ICT in the rural education sector, in order to have scientific references and tend towards a plausible meaningful use of its integration in the traditional classroom.

Possibilities of ICTs in rural education

Due to the characteristics they possess, ICTs have generated a significant impact on education since they allow greater interaction, breadth of information, and transmission of audiovisual material, capture the student's attention, promote motivation, and facilitate communication and teamwork (Hernández, 2017). Additionally, the application of technology in disadvantaged rural sectors have allowed the development of skills for students so that they can obtain a greater number of possibilities to develop personally and professionally (Aris & Orcos, 2016). Also, through the use of ICTs as part of the teaching methodology, it has allowed the student to have mastery over them, which is necessary due to the demands for professional and personal growth. In addition, it allows disinhibition, development of creativity and greater participation (Ratheeswari, 2018). For Soler (2016), the incorporation of ICTs in rural educational processes offer educational alternatives such as being support tools and/or complements to the traditional class and enriching the processes of interaction and innovations.

In international contexts, the advantages provided by ICT, together with the direct experiences that rural schools make possible, constitute a privileged environment for learning, which under the social responsibility and leadership of an educator trained in ICT will transform socio-cultural realities (Soto & Molina, 2018). Similarly, López-Meneses et al. (2014), explain the consolidation of innovative practices with ICT in rural schools. In these studies, it was found that the use of these practices, based on the achievement of optimal learning outcomes, increased student motivation and the opportunities to enhance digital skills (Del Moral et al., 2014a).

In summary, we can appreciate the potential opportunities for local development that is offered by ICT in schools located in rural environments by interconnecting schools that are geographically separated to join efforts and disseminate the activities and experiences they carry out through their own learning communities (Del Moral & Villalustre, 2011). Despite the limitations of the context, the scarcity of human and technological resources, and the

investment of time and personal effort involved in the integration of ICTs, they also represent great opportunities for improvement (Del Moral et al., 2014b). Although the promising panorama is evident with the implementation of ICT resources as enabling tools for the apprehension of knowledge in rural education, new questions arise as to how they can be used to motivate students and teachers.

Motivation in education

Motivation is that which moves or has efficacy or virtue to move; in this sense, it is the engine of human behavior. Interest in an activity is "awakened" by a need, which is a mechanism that incites the person to action and can be of physiological or psychological origin (Carrillo et al., 2009). For Gallardo & Camacho (2008), motivation connects, fundamentally, with cognitive and affective-motivational aspects, influences the cognitive processes, and awakens and maintains learning. Usán & Salavera (2018) express that students more intrinsically motivated towards stimulating experiences, knowledge, and achievement were related to higher rates in attention, clarity, and emotional regulation in the same way as with academic performance. In addition, interest and persistence are elements of the will that maintain motivation and affect the concentration and disposition in the student's task (Gaeta & Cavazos, 2015).

In short, students who are not motivated do not learn (Soriano, 2001). When there is motivation, learning results increase (Tirado et al., 2013). Motivation is conditioned by the way of life, family relationships, new technologies, prevailing values, interpersonal relationships of students and teachers (Núñez, 2009). Following this, such processes of educational transformation proposed in educational policies have evidenced that they are closely related to motivation, being this the most fundamental basic aspect of the human mind in the success and failure of any learning situation (Dörnyei, 2008, p. 18); Ramos (2014, p. 4) points out that "The high level of demotivation by much of the student body greatly influences the atmosphere generated in the classroom, and often generates a negative climate of coexistence".

In addition to these considerations and with the aim of transforming the traditional model of the teaching-learning process in the current rural school, Colombia adopted, through its governmental entities since 2009 and with updating processes in 2021, Social Innovation

as a fundamental pillar of progress towards a knowledge society in articulation with Science, Technology, and Innovation (STI) in order to seek a transformation of the country's development model (National Planning Department [DNP], 2021). In addition, Social Innovation (SI) in traditional education evidences a positive impact of its implementation, as visualized by the Inter-American Development Bank (IDB, 2015), in its publication "Panorama actual de la innovación social en Colombia". It also concludes that "Social Innovation is a tool to enhance social strategies that seek to overcome the most urgent problems, especially extreme poverty; but this time with a call to information and communication technologies" (Melo & Villa, 2015, p. 6). Thus, social innovation as a tool for educational transformation has been used as an effective strategy to improve the social environment of communities.

Social innovation as a strategy for educational transformation

According to the Economic Commission for Latin America and the Caribbean (CEPAL, 2004), social innovation are new forms of management, administration, execution, new instruments or tools, new combinations of factors oriented to improve the social and life conditions in general of the population of the region. For Astorga (2004, p. 1) "innovation is like the creative and original spark of a person, group or promoting entity, which is manifested in a novel and transforming fact that unleashes progress and allows to better use the existing resources"; "it is a change in the social practice carried out by an organized community, a local government project or a non-governmental organization with the purpose of improving the impact in the social attention or in the productive dynamics of the project or social practice" (p. 2). In the same vein, Rodríguez & Alvarado (2008) propose social innovation as a tool for strengthening self-management processes, which builds social fabric and at the same time solves various problems in the communities.

Therefore, it can be perceived that Social Innovation is presented as an opportunity to address the increasingly complex social challenges with a transversal approach, where innovative solutions are based on more than just technology (Bernal, 2016). It can also contribute to the construction of an increasingly dense social fabric within the educational community, as it allows to strengthen the bonds of people to feel an integral and important part and, at the same time, political subjects responsible for the joint destinies (Acosta, 2018).

Considering the above by way of initial conclusion on the impact that converges social innovation articulated with tools and strategies mediated by ICT, they can be favoring processes in the teaching-learning process of the school and possibly in the motivation of rural students as considered in the studies carried out by Vásquez-Cuperio & López-Penedo (2016).

Participatory video, a tool for innovation and formative contribution in the community

For White (2003, p. 64) the *participatory video* is a powerful tool to relate the individual to the community, to make them aware of their needs and those of their group, and to generate critical awareness, therefore, it has a great potential to bring about personal, social, political, and cultural changes. In a more technical way, the participatory video seeks to achieve the involvement of a group of people or a community in the design and creation of an audiovisual input. In it, they can shape the issues according to their own vision of priorities and control how they will be represented (Black et al., 2018). For Plush (2015), the participatory video allows the collective to take action to solve their problems and/or communicate their needs and ideas to decision makers or other groups and communities. In other words, the participatory video offers the opportunity for citizens to tell their own stories and to share experiences, values and behaviors that seek a more sustainable development (Baú, 2014).

In its application in education, Montero & Moreno (2014) dimension the participatory video as lines of reflection around the alternative use of media, audiovisual literacy, the management of communication tools by citizens and, in general, the role that images play in processes of social change. In the academic context, Montero & Moreno (2020) state that the participatory video is an interdisciplinary field that has brought to the academy many experiences of practical dimension and has generated knowledge and reflection more from action than from theoretical debate.

In the international context, from the implementation cases and experiences conducted by Boni & Farith (2016) in Spanish institutions it was concluded that the participatory video could be useful to co-create practical and experiential knowledge among participants, as well as to foster skills and abilities that take part in a participatory process. For Martínez & Carrión (2019) the application of participatory videos to educational processes develops

models of construction of meaning in the framework of educational-communicative action because it combines communicative practices with the empowerment of communities in social and educational contexts.

In that order of ideas, this research shows the impact of the integration of a communicational strategy with the participatory video articulated in processes of social innovation mediated with ICT tools as possible motivational resources in the traditional teaching-learning process in a rural secondary school of Nariño. They were applied in the subjects of language, arts, and computer science, where low academic performances had been evidenced. The motivation of the construction of this investigation is to be able to visualize new experimental educational experiences that have not been evaluated and socialized to the educational community of the Colombian southwest.

1. HYPOTHESIS

The starting hypothesis states that "students who have worked with the communicational strategy articulated in processes of social innovation mediated with ICT tools (participatory video: audiovisual resources and mobile devices) will possibly present higher degrees of academic performance compared to students subjected to the traditional teaching-learning process without the aforementioned experimental communicational technological strategy."

3. RESEARCH DESIGN

3.1. Design. The research follows a quantitative approach and a quasi-experimental design with two study groups: experimental group (EG) and non-equivalent control group (CG); a pre-test (before the implementation of the strategy) and a post-test (after the implementation of the strategy) measures were applied in order to demonstrate the effectiveness of the implementation of the communicational strategy (participatory video) of social innovation mediated by ICT on the academic performance of the experimental group (Campbell & Stanley, 1995).

3.2. Variables

3.2.1. Dependent: Academic performance in the subjects of language, arts, and

computer science.

The curriculum of the subjects is covered in the Pedagogical Guidelines for Arts Education in Basic and Middle School (MEN, 2010, p. 87), basic standards of language skills (MEN, 2020, p. 36); And general guidelines for education in technology (2018, p. 20).

3.2.3. Independent: Communicational strategy (participatory video) articulated in community social innovation processes mediated with ICT tools with the experimental group (EG); and control group (CG) articulates traditional teaching-learning process activities, without the ICT communicational strategy.

This methodological proposal of community social innovation of communicational type harmonizes with the participatory video as a tool for empathy, which displays and exposes through audiovisual media, mobile devices, and digital resources, the social challenges that children and young people in rural schools evidence in order to generate spaces of coexistence, motivation and learning in their social and educational environment. The experimental methodology has been led by the **Governorate** of Nariño through the Center for Social Innovation of the Department of Nariño (CISNA), Colombia, and has evidenced through its pilots, favorable experiences and lessons learned towards the capacity building to address the post-conflict in the classroom since the last three years (CISNA, 2019).

3.3. Population and sample

The research participants were 70 students in the seventh grade of secondary education, of which 34 students were distributed for the CG and 36 students for the EG. All of them belonged to an educational institution in the Department of Cauca in southwestern Colombia.

3.4. Fieldwork Methodology

We adopted the participatory video methodology developed by Millán & Frediani (2014) and Boni et al. (2015; 2018) which considers several phases of implementation: (i) Diagnosis (to detect what the key elements are that interest the group regarding the topic of the school subject; to visualize how they would like the future to be, identifying positive future scenarios and possible strategies to achieve

them), (ii) Planning (to decide collectively on what they want to make the video about, to build the narrative they want to tell and why they want to do it; at this stage it is also important to assign the different roles that will take part in the recording: director, cameraman, actors, and editor; and locations of the recording and equipment are planned as well), (iii) Production (to start recording and the film is continuously projected among the participants and the collective; it must be ensured that the students involved have control in making decisions about the content and use of audiovisual input), (iv) Edition (to select and cut the material, harmonize the music, copy over the images; previous projections are made in the group and the messages transmitted and the possible changes to incorporate are reflected upon), and (v) Public Screening (the group of students decides with which audience it will be shared, taking into account the purpose of the video on the topic of the school subject chosen to make the video), the teachers must guarantee that their students participate in all the phases. For this, it is fundamental from the beginning to transmit confidence and security to guarantee that all the interests and concerns of the whole group will be heard and considered in the process of obtaining the audiovisual input.

The implementation of the communicational strategy (participatory video), experimental ICT, and the traditional methodology in the rural school were articulated with the curriculum of the language, arts, and computer science subjects, where their training consists of two hours of theory and one hour of weekly workshops. The teachers of language, arts, and computer science were the trainers of both study groups (EG and CG). It was suggested to integrate the experimental communicational strategy in the hour designated for the workshop space of the students' activities, and to maintain the other two theoretical hours with traditional methodology for the GE. The intervention of the experimental methodology was applied during three months in 2021.

3.4. Data analysis

Data analysis was supported with the help of SPSS Statistics 2.0 software. Variable distributions, frequencies, and means were obtained with descriptive statistics.

4. RESULTS

The results of the descriptive analysis (Chart 1, 2 and 3) show changes between the pre-test and post-test measures for each of the study groups (CG and EG), showing a greater knowledge and academic performance in the Experimental Group - EG, with the integration of the communicational strategy (participative video) of social innovation mediated with ICT resources, compared to the traditional methodology without the support of digital tools in the Control Group - CG, as initially proposed in the hypothesis section of the research.

Chart 1. Post-Test Performance Computer Class

Traditional class w/o ICT		MONTH 1	MONTH 2	MONTH 3
7A - CG, N=34	Mean	1,783	1,821	1,895
	Stand. dev.	0,716	0,697	0,803
ICT Supported class		MONTH 1	MONTH 2	MONTH 3
7B - EG, N=36	Mean	2,893	2,937	2,945
	Stand. dev.	0,789	0,701	0,768
Total N=70	Mean	2,271	2,313	2,362
	Stand. dev.	0,752	0,699	0,785

Chart 2. Post-Test Performance Language Class

Traditional class w/o ICT		MONTH 1	MONTH 2	MONTH 3
7A - CG, N=34	Mean	1,888	1,901	1,897
	Stand. dev.	0,678	0,903	0,891
ICT Supported class		MONTH 1	MONTH 2	MONTH 3
7B - EG, N=36	Mean	2,872	2,879	2,905
	Stand. dev.	0,601	0,781	0,789
Total N=70	Mean	2,329	2,339	2,348
	Stand. dev.	0,638	0,840	0,838

Chart 3. Post-Test Performances Class Arts

Traditional class w/o ICT		MONTH 1	MONTH 2	MONTH 3
7A - CG, N=34	Mean	2,337	2,210	2,145
	Stand. dev.	0,706	0.856	0,671
ICT Supported class		MONTH 1	MONTH 2	MONTH 3
7B - EG, N=36	Mean	3,146	3,781	3,121
	Stand. dev.	0,756	0,734	0,735
Total N=70	Mean	2,711	2,891	2,587
	Stand. dev.	0,731	0,734	0,702

Once the ICT communicational intervention had been carried out, as explained on the independent variable (academic performance of the subjects), and after verifying the normal

distribution of the data, differences in the values of the means in the study groups in the final phase (post-test) are evident, suggesting that the methodology of social innovation mediated with ICT resources had a positive influence on the dependent variable academic grades of the GE. On the other hand, the standard deviation values suggest homogeneity in the values of the variable in both study groups. In other words, Graph 1 shows the confirmation of the researchers' hypothesis.

It is evident that the subject of arts obtained better performances, followed by computer science and language.

ACADEMIC PERFORMANCE DIFFERENCES

◆ **Control Group** ■ **Experimental Group**
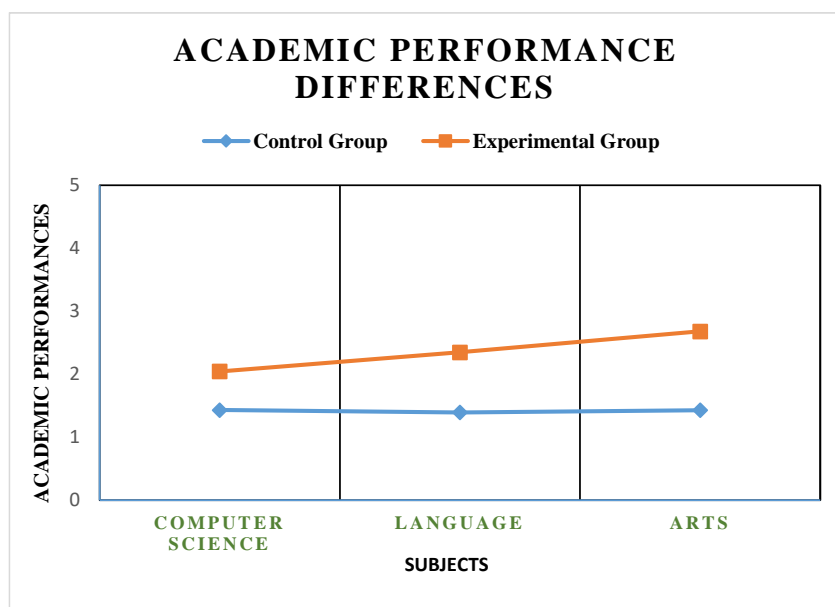
Graph 1. Differences in academic performance between the Experimental Group and the Control Group.

5. CONCLUSIONS AND FINAL CONSIDERATIONS

The results of the pre-test and post-test measures are positive and point towards validation of the research hypothesis, showing that the integration with the communicational strategy (Participatory Video) of social innovation mediated with ICT resources in conjugation with the activities of the curricular program, can increase academic performance in the learning of language, computer science and arts in secondary education students in rural context; similar results are expressed in Martínez, & Carrión, (2019), Plush (2015) and

Baú (2014). However, it was perceived that the participatory video experience was motivating, because it did not focus on the incorporation of technologies in the classroom, but on its didactic use as a means to enable learning, similar conclusions expressed by Del Moral et al. (2014a).

Equally, it can be assumed that the traditional methodology can be more efficient if it is supported with participatory videos, ICT resources, and social innovation, since it fits the learning needs of teachers and students, with results similar to the research conducted by Boni & Farith (2016) in similar contexts. In addition, the conclusions of this experience harmonize with the trends of the new role of the teacher regarding ICTs, which forces them to modify education towards learning with creativity inspired by the needs of the context and to create learning experiences that motivate the implementation of what is learned in the real and promote the management of technological tools with responsibility (Molas & Rosselló, 2010). Likewise, the ICT tool is an optimal complement for teachers, students, and communities that are involved in the teaching-learning process used as a technological and innovation tool to strengthen practices in secondary education and learning in the rural sector (Vivas et al., 2017; Abaunza et al., 2019).

The limitations of the research are reflected in the sample studied, being a limiting factor in this research because it is a small and debatable generalization. Therefore, there is a need to deepen and increase experimental research in the application and implementation of ICT communicational methodologies with social innovation for the improvement of the teaching-learning processes in rural educational environments. Another factor to consider was the evident lack of technological infrastructure, equipment, and connectivity, but the synergy expressed by the different actors (students, teachers, and family members) associated with the process made possible the execution of the strategy. And finally, another limitation of great value converges in that teachers express having little time to devote to the strategy and its incorporation of ICT resources in their teaching-learning processes, in addition to having basic knowledge and low expertise in ICT skills; such behaviors are reflected in conclusions by González & De Pablos (2015), García et al. (2018) and Said-Hung (2017).

As a final conclusion, the implication of the finding of these results could serve the scientific and governmental community as evidence and background inputs to propose

changes and methodological improvements in the current educational paradigm of the rural regions of southwestern Colombia. This is because of the situations that permeate the implementation and planning of ICT educational policies already established and future ones that will be integrated into the educational institutions of secondary education, allowing alternative solutions to support and complement towards dynamism and apprehension of knowledge, innovation, and motivation in the teaching-learning process of the school subjects of language, computer science, and arts. In the same way, it is considered necessary to carry out new experimental studies on the application of these experiences of social innovation mediated by technologies such as the participatory video, being possible strategies for improvement and motivation in the learning processes in the rural education sector.

REFERENCES

Abaunza, G., Martinez-Abad, F., & Conde-Rodriguez, M. J. (2019). *Web applications in the EFL class in contexts rural school Colombian: Aplicaciones web en la clase de EFL en contextos de escuela rural colombiana*. In Proceedings of the Seventh International Conference on Technological Ecosystems for Enhancing Multiculturality, TEEM 2019, 1–6. https://DOI:10.1145/3362789.3362879

Acosta, V. W. (2018). Innovación social educativa: una metodología de innovación 3.0 para la educación. *Revista de la Universidad de la Salle*, (75), 39-53.

Aris, N., & Orcos, L. (2015). ICTs and School Education. *International Journal of Interactive Multimedia and Artificial Intelligence*, 3(4), 13–16. https://DOI:10.9781/ijimai.2015.342

Astorga, E. (2004). Innovación social. Concepto, criterios y variables. *documento preparado para el proyecto Experiencias en innovación social en América Latina y el Caribe, Santiago de Chile, inédito*.

Baú, V. (2014). Telling stories of war through the screen. Participatory video approaches and practice for peace in conflict-affected contexts. *Conflict and Communication Online*, 13(1).

Bernal, M. E. (2016). 2.1 La Innovación Social en América Latina y el Caribe. *Jorge Emilio Rey Ángel Gobernador de Cundinamarca Oscar Rodríguez Lozano Secretario de Ciencia, Tecnología e Innovación*, 95.

Black, G. F., Davies, A., Iskander, D. & Chambers, M. (2018). Reflections on the ethics of participatory visual methods to engage communities in global health research engage communities in global health research. *Global Bioethics*, 29(1).

Boni, A., & Farith Millán, G. (2016). Action-research using Participatory Video. A learning experience in San Lorenzo, Castellón, Spain. *Revista de Comunicación y Ciudadanía Digital - COMMONS 2015*, 5(1), 117-139. http://dx.doi.org/10.25267/COMMONS.2016.v5.i1.06

Boni, A., Leivas, M., & Millán, G. (2018). G, y L. López-Fogués (2015). *El video participativo: Co-investigando y visibilizando experiencias de Innovación Social Colectivo.* http://innovacion-soci.webs.upv.es/images/pdfs/Resumenes1/Informe-investigacion-3.-El-Video-Participativo_co-investigando.pdf

Campbell, D., & Stanley, J. (1995). Diseños experimentales y cuasiexperimentales en ciencias sociales. *Buenos Aires: Amorrortu*, 1–30.

Carrero, M. L. A., & González, R. F. G. (2016). La educación rural en Colombia: experiencias y perspectivas. *Praxis pedagógica*, 16(19), 79–89. https://doi.org/10.26620/uniminuto.praxis.16.19.2016.79-89

Carrillo, M., Padilla, J., Rosero, T. & Villagómez, M. S. (2009). La motivación y el aprendizaje. *ALTERIDAD. Revista de Educación*, 4(2), 20–32. https://www.redalyc.org/pdf/4677/467746249004.pdf

Centro de Innovación Social de Nariño-CISNA. *(2019). La ventana.* Pasto: Gobernación de Nariño. Retrieved January 23, 2021, from http://innovacionsocial.xn--nario-rta.gov.co/index.php/proyectos/la-ventana

Comisión Económica para América Latina y el Caribe -CEPAL. (2004). *Acerca de innovación social*. Retrieved January 25, 2022, from https://www.cepal.org/es/temas/innovacion-social/acerca-innovacion-social

Del Moral, M. E., Martínez, L. V., & Piñeiro, M. D. R. N. (2014b). Oportunidades de las TIC para la innovación educativa en las escuelas rurales de Asturias. *Aula abierta*, 42(1), 61–67. https://doi.org/10.1016/S0210-2773(14)70010-1

Del Moral, M. E., Villalustre, L. (2011). Las comunidades de práctica en la web 2.0 para la colaboración entre escuelas rurales. *DIM: Didáctica, Innovación y Multimedia*, (20). https://raco.cat/index.php/DIM/article/view/243446

Del Moral, M. E., Villalustre, L., & Neira, M. D. R. (2014a). Variables asociadas a la cultura innovadora con TIC en escuelas rurales. *Profesorado. Revista de Currículum y Formación de Profesorado*, 18(3), 9–25. http://www.redalyc.org/pdf/567/56733846002.pdf

Departamento Nacional de Planeación (DNP). (2021). *Consejo Nacional De Política Económica Y Social 4069*, *Política Nacional De Ciencia, Tecnología E Innovación 2022 2031*. https://colaboracion.dnp.gov.co/CDT/Conpes/Econ%C3%B3micos/4069.pdf

Dörnyei, Z. (2008). *Estrategias de motivación en el aula de lenguas*, 108. Editorial UOC.

Duarte, J., Bos, M. S. & Moreno, J. M. (2012*). Calidad, igualdad y equidad en la educación colombiana*. Banco Interamericano de Desarrollo.

Gaeta, M. & Cavazos, J. (2015). *Implicación académica en matemáticas: percepción de metas docentes y procesos autorregulatorios en estudiantes de Bachillerato*. Revista Ibero-americana de Estudos em Educação, (4), 951–968. https://doi:10.1016/S0120-0534(15)30002-9

Gallardo, P. & J. M. Camacho (2008). *La motivación y el aprendizaje en educación*, Sevilla: Wanceulen Educación.

García, M. P. S., Solano Fernández, I. M., & Sánchez Vera, M. del M. (2018). Uso didáctico de las TIC en los colegios rurales agrupados de la Región de Murcia. *RiiTE Revista Interuniversitaria de Investigación en Tecnología Educativa*, (5), 102–115. https://doi.org/10.6018/riite/2018/343771

Gaviria-Mesa, J. I., Granda-Viveros, M. L., López-Medina, J. D., & Vargas-Cano, R. (2018). Desigualdad rural y conflicto interno armado en Colombia: un círculo vicioso. *Izquierdas*, (39), 209–228. https://doi.org/10.4067/S0718-50492018000200209

González P, A., & De Pablos, P. J. (2015). Factores que dificultan la integración de las TIC en las aulas. *Revista de Investigación Educativa*, 33(2), 401–417. https://doi.org/10.6018/rie.33.2.198161

Hernández, R. M. (2017). Impacto de las TIC en la educación: Retos y Perspectivas. Propósitos y Representaciones, 5 (1), 325-347. *Revista de psicología educativa USIL*.

https://dialnet.unirioja.es/servlet/articulo?codigo=5904762

López-Meneses, E., Vázquez-Cano, E., & Fernández-Márquez, E. (2014). Análisis de la percepción de los estudiantes sobre las áreas de intervención del futuro educador y trabajador social a través de una didáctica digital con mapas conceptuales multimedia. *RED, Revista de Educación a Distancia*, 41. http://www.um.es/ead/red/41

Lugo, M. T., López, N. & Toranzos, L. (2014). *Informe sobre tendencias sociales y educativas en América Latina. Políticas TIC en los sistemas educativos de América Latina*. UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000230080

Martínez, S. L., & Carrión, E. C. (2019). Participatory video and visual literacy: Challenges and opportunities for social and educational change. *Obra digital: revista de comunicación*, (17), 77-91. https://doi.org/10.25029/od.2019.242.17

Melo, L. V., & Villa, L. (2015). Panorama actual de la innovación social en Colombia. Editado por el Banco Interamericano de Desarrollo (BID). Retrieved from https://www.iadb.org/en

Millán, G., & Frediani, A. A. (2014). *Terms of reference of the summer school*. Universitat Jaume I.

Ministerio de Educación Nacional-MEN. (2010). *Orientaciones generales para la educación en tecnología*. https://www.mineducacion.gov.co/1621/articles-340033_archivo_pdf_Orientaciones_grales_educacion_tecnologia.pdf

Ministerio de Educación Nacional-MEN. (2010*). Orientaciones Pedagógicas para la Educación Artística en Básica y Media*. https://www.mineducacion.gov.co/1759/articles-241907_archivo_pdf_orientaciones_artes.pdf

Ministerio de Educación Nacional-MEN. (2020). *Estándares Básicos de Competencias Del Lenguaje*. https://www.mineducacion.gov.co/1780/articles-116042_archivo_pdf1.pdf

Ministerio de Tecnologías de la Información y la Comunicación-MinTIC. (2008). Plan Nacional de TIC 2008 – 2019. https://www.mintic.gov.co/portal/715/articles-125156_recurso_00.pdf

Ministerio de Tecnologías de la Información y la Comunicación-MinTIC. (2014). *El Plan Vive Digital 2014-2018*. Retrieved August 15, 2021, from https://mintic.gov.co/portal/vivedigital/612/w3-article-19654.html

Ministerio de Tecnologías de la Información y la Comunicación-MinTIC. (2018). *Plan TIC 2018 – 2022*. https://micrositios.mintic.gov.co/plan_tic_2018_2022/pdf/plan_tic_2018_2022_20191121.pdf

Molas, N. & Rosselló, M. (2010). Revolución en las aulas: llegan los profesores del siglo. La introducción de las TIC en las aulas y el nuevo rol docente. *Revista Didáctica, Innovación y Multimedia*, 19, 1–9. https://ddd.uab.cat/pub/dim/16993748n19/16993748n19a12.pdf

Montero, D. & Moreno, J. M. (2014). *El cambio social a través de las imágenes. Guía para entender y utilizar el vídeo participativo*. Los libros de la catarata.

Montero, D., & Moreno, J. M. (2020). Explorando el campo de conocimiento del video participativo. Un recorrido por las principales aportaciones teórico-prácticas. *Revista Internacional de Comunicación y Desarrollo*, 11, 92–108. https://doi.org/10.15304/ricd.3.11.6345

Núñez, J. C. (2009, September). Motivación, aprendizaje y rendimiento académico. In *Trabajo presentado en el X Congresso Internacional Galego-Português de Psicopedagogia. Braga, Portugal*, 41–67.

Plush, T. (2015). Participatory video and citizen voice – We've raised their voices: is anyone listening? *Global Times,* (22/23), 1-16.

https://ojs.mau.se/index.php/glocaltimes/article/view/247

Pozuelo, J. E. (2014). ¿Y si enseñamos de otra manera? Competencias digitales para el cambio metodológico. *Caracciolos*, 2(1). https://core.ac.uk/download/pdf/58910784.pdf

Ramírez, J. C., & De Aguas, J. (2017). Configuración territorial de las provincias de Colombia: ruralidad y redes. http://hdl.handle.net/11362/40852

Ramos, M. (2014). *Estudio sobre la motivación y su relación en el rendimiento académico* [Trabajo de Fin de Máster, Universidad de Almería]. http://repositorio.ual.es/bitstream/handle/10835/3064/Trabajo.pdf

Ratheeswari, K. (2018). Information Communication Technology in Education *Journal of Applied and Advanced research*, 3(1) 45–7. http://dx.doi.org/10.21839/jaar.2018.v3iS1.169

Rodríguez, A. & Alvarado, H. (2008). Claves de la innovación social en América Latina y el Caribe. Cepal. http://www.cepal.org/publicaciones/xml/2/34682/Claves_de_innovacion_social.pdf

Said-Hung, E., Valencia-Cobos, J., & Señan, G. B. (2017). Nivel de aprovechamiento docente de las TIC en Colombia. *Profesorado. Revista de Currículum y Formación de Profesorado*, 21(3), 219–238. https://www.redalyc.org/pdf/567/56752489011.pdf

Soler, J. (2016). Educación Rural en Colombia, formación de maestros en entornos rurales, su trayectoria y retos. *International Journal of Humanities and Social Science*, 6(*11), 296-305.* https://www.ijhssnet.com/journals/Vol_6_No_11_November_2016/33.pdf

Soriano, M. M. (2001). La motivación, pilar básico de todo tipo de esfuerzo. *Proyecto social: Revista de relaciones laborales*, (9), 163–184.

Soto, D., & Molina, L. (2018). La escuela rural en Colombia como escenario de implementación de TIC. *Saber, Ciencia y Libertad*, 13(1), 275–289. https://doi.org/10.18041/2382-3240/saber.2018v13n1.2086

Tirado, F., Santos, G., & Tejero, D. (2013). La motivación como estrategia educativa. Un estudio en la enseñanza de la botánica. *Perfiles educativos*, 35(139), 79–92. https://doi.org/10.1016/S0185-2698(13)71810-5

Usán, P., & Salavera, C. (2018). Motivación escolar, inteligencia emocional y rendimiento académico en estudiantes de educación secundaria obligatoria. *Actualidades en Psicología*, 32(125), 95–112. https://doi:10.15517/ap.v32i125.32123

Vásquez-Cuperio, S. & S. López-Penedo (2016), "Escuela, TIC e innovación educativa", en *Digital Education Review*, (30), 248–261. https://doi.org/10.1344/der.2016.30.248-261

Vivas, E. S., Chávez, M. M. P., & Zermeño, M. G. G. (2017). Educación rural y la adquisición de competencias laborales: una innovación mediante el uso de recursos digitales. *Educatio siglo XXI*, *35*(1 Mar-Jun), 33–54. https://doi.org/10.6018/j/286211

White, S. (2003). Participatory Video: Images that Transform and Empower. Sage.