

Digital Competences In The Social Media Program For Older Adults In Vulnerable Contexts

Jhon Holguin-Alvarez, Giovanna Manrique-Alvarez, Juan Apaza-Quispe, Rosa Romero-Hermoza

Abstract: In this study we analyze the effects of the program of incursion in Social Networks in Digital Competences as part of an experimental investigation with 40 adults (rank: 81 - 92 years of age) from vulnerable contexts of a Latin state. 50 educational activities based on the use of Facebook, WhatsApp, Twitter and Gmail were applied as essential elements of virtual communication. These allowed obtaining statistical significance in digital competencies of the experimental group, especially in more than 60% of participating subjects, both in the ability to manage technological resources as well as in the interrelation through the internet (social networks). The study recognizes its contribution in the opportunity to generate digital inclusion in the elderly in states of digital abandonment.

Keywords: elderly; digital competences; vulnerable contexts; digital exclusion; social networks.

1 INTRODUCTION

Innovation and technological products increase over time exponentially. Both generate employability and leisure activities according to the type of consumer in the world. Each person belongs to some generation (Baby Boomers; Generation X; Millennials; Generation Z; Generation Alpha), in which the digital technological consumption is increased according to the needs that arise in the social and personal sphere [1]. However, 35% of the population close to adulthood access the internet [2], in vulnerable Latin contexts 18.1% of adults over 60 years of age access a digital tool [3], which would belong to generation Baby Boomers. In this case, we examined the problem of the elderly in vulnerable contexts of a Latin neighborhood, which was abandoned; and whose problems their digital competences were addressed. It is known that the elderly have difficulties in accessing digital tools for two reasons: a) Sequential disuse of digital capabilities at the stage of adulthood; b) digital illiteracy. Many of these causes cause consequences such as: cognitive inoperativity, forgetfulness, and digital exclusion [4], [5]. These problems have influenced the population in the old age stage, due to the evolution with which technologies require greater connection in the world, this is usual, since the inhabitant must develop many communication and learning skills based on connectivity in the globalized world in networks and virtual nodes. The theory of connectivism refers to the fact that knowledge has already become part of virtual sources (social networks, virtual games, communicative networks; among others) [6], [7], unlike before, on which the acquisition was based in hardware, in the development of different sources of information.

Now, learning is mediated by different sources that generate learning nodes and networks that transport what has been learned [7] but to a greater extent because of the quality with which information is taken to the consumer [6], its purpose is to take advantage of transport quality of the social meanings in certain moments of his daily life by different means of virtual learning (mass learning, distance learning, viral learning). In general, young people apply this digital fluency to a greater extent, unlike adults who seek to obtain knowledge or information in virtual media, prioritize the accuracy of the information instead of focusing on transport channels. Digital competences are knowledge and skills to use technologies in more active individuals in digital contexts [5], [8]. Its usefulness benefits the imbalance and cognitive balance with greater sustainability evidenced in the new learning provoked and acquired in the interaction with digital networks [8], other benefits are the reduction of cognitive and neuronal deterioration due to brain aging; and agility in cognitive functions [9], [10]. On the other hand, the lack of their attention would cause digital exclusion, decrease in social participation, and in the economic income of the context in which these inhabitants develop [10], [11]. Developing without skills for virtual competition, influences the development of neutral learning, without a clear sense about the media information sold on the networks, or even on television [11]; turning the human being into a being with practical weaknesses in different digital communities. In these terms, the study allows expanding the possibility of increasing media communication capabilities, opportunities for value growth; as well as the development of attitudes for the sustainable use of technology networks [4], [8]. These capabilities allow the increase of these aspects because they are based on different basic cognitive abilities such as logic, analysis, fluency, which generate scaffolding to obtain superior skills in other contexts such as work under pressure, proactivity and active communication. Suggestions from some research have reported that resistance to the use of cell phones, social networks and other technologies repress and slow down the link between basic skills and superior skills [5], [8]; and as said before, they could influence the deterioration of learning in stages in which even neural networks degenerate [6], to a greater extent due to a lack of attention of some potential support to be introduced even in 4g technologies or 5g [12]. The main problem of the study was addressed through the application of experimental pedagogy based on the use of knowledge, management and utility of social networks or virtual media to repower digital competences in adults [13], [14], [15] and verify the

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opportunities that would give them to get involved in a job with digital technology in their daily activities [12]. The objective of the study was: To verify the effects of imparting activities of a program based on Social Networks in the digital competences of the elderly.

2 RESEARCH METHOD

2.1 Type of research and subjects

The study was quantitative approach [16] [17], experimental cut [16]; and, of the hypothetical deductive type. The study groups were established in two subgroups: a) Experimental (application of the program of activities in Social Networks): X; b) Control (activity inhibition group: no application of activities): Y. The population was 65 adults who regularly attended The House of the Elderly, located in a central district of the city of Lima, in Peru. This adult house was located in one of the nine vulnerable contexts that exist in Lima, it was thus characterized because the subjects' homes were located in Human Settlements or Housing Associations, which were located around the experimentation center. The characterization of these zones was carried out by means of three components (table 1).

Table 1.

Characterization of vulnerable contexts and residences in which participants lived

N.º	Context	Characteristics
1	Human settlement	-Very low socioeconomic level. -Lack of essential elements of subsistence (electric fluid). - Juvenile crime: robberies and armed robberies. -Single-parent families (single mothers).
2	Housing Association	-Low socioeconomic status. -Crime: armed robbery. - Single-parent families (separated parents and single mothers).

Research source: Housing records.

The sample from vulnerable areas was made up of 40 adults (M (rank) = 81 – 92 years; S.D. = 1,32) chosen in a probabilistic way; which were assigned by random quotas of 20 subjects for each sub group: X = 20 subjects; Y = 20 subjects. All decided to participate in the study by informed consent.

2.2 Instruments and procedure

The instrument used to gather information on digital competences was the Questionnaire on Digital Competencies of University Students and for Non-Students (adapted version) [8]; which consisted of 31 items, with four scales dedicated to the evaluation of the effectiveness in digital competence: a) completely, b) sometimes, c) almost always, d) mastery. This instrument was adapted to verify the increase of two dimensions: 1) Competences for the use of technological tools (CUHT) and 2) Interpersonal Competences (CI). The digital skills were categorized by levels: Instrumental; Process; Advanced. The questionnaire was evaluated in terms of its content, through the judgment of five experts regarding aspects of semantic clarity, thematic consistency and linguistic coherence. A pilot plan was also applied with 30 subjects of the same characteristics attending other nursing homes in Lima; the indices obtained regarding their reliability were

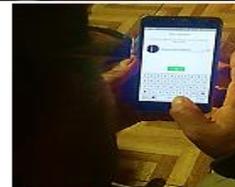
acceptable for the study ($\alpha = 8,41$). In turn, an open response form was used to record the opinions of some participants regarding the usefulness they felt in their digital competences after participating in the experimental program. The program of incursion in Social Networks was applied by collaborators of a private university of Lima, through a research plan of student seedlings on cognitive regeneration and digital skills in communities at risk of social exclusion, in which, one of the themes of research addressed was the foray into Social Networks. This experimental pedagogical program was developed during 50 learning activities, lasting 30 minutes per session. The experimentation was manipulated in four stages for each activity: 1) Dynamic familiarization (figure 1); 2) Thematic introduction (figure 1); 3) Network Registries (figure 1); and 4) Digital interactivity (figure 1).



Phase 1: Dynamic familiarization



Phase 2: Thematic introduction



Phase 3: Network Registration



Phase 4: Digital interactivity



Traduction: "I am in a town of TAMA-

Fig. 1. Phases of the social media program.

In the project of incursion in Social Networks (figure 1), the participants interacted with the executors of the project

through the activities of dynamic familiarization (phase 1), in those activities personal knowledge games were applied interpersonal relationships, motivational dynamics, conversation games. In the thematic introduction activities (phase 2), internet browsing criteria were explained, accompanied by brief incursions into social networks, websites, electronic correspondence, among others. In the network registration phase (phase 3), participants registered in Social Networks such as Facebook, Twitter, Instagram; WhatsApp. As for digital Interactivity (phase 4), the subjects communicated with their family and friends, as well as interviewed them in video mode called.

4 RESULTS AND DISCUSSION

Although the samples were chosen statistically and by statistical probability, the data were tested for normality. This analysis was performed by the Kolmogorov-Smirnov and Shapiro-Wilk tests to corroborate both results, from which indices were obtained that corroborated that the data came from a normal distribution ($p > .005$). The results regarding the digital competences variable before the application of the program (pretest measurement), reported equitable measures between the control group ($M(y) = 31,5$; $S.D.(y) = 0,42$) and experimental group ($M(x) = 46,3$; $S.D.(x) = 1,03$). In this analysis, the comparison of group averages did not report statistical significance ($t(34) = -1,264$; $sig. = 2,56$; $p > .001$).

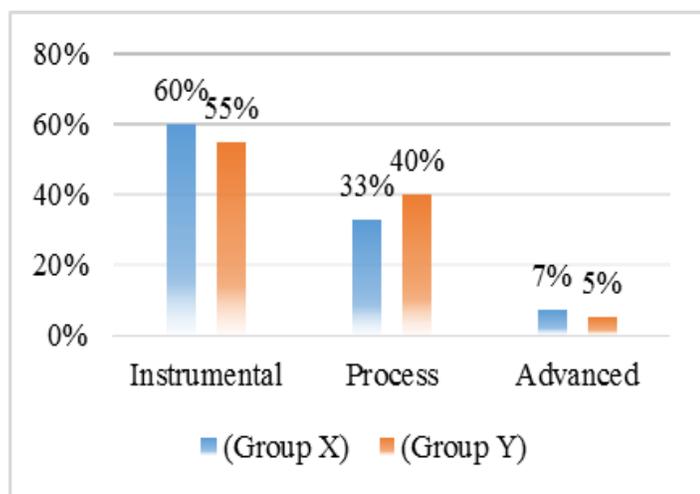


Fig. 2. Digital competences in pretest measurement.

In relation to the digital competences in posttest measurement (after the application of the program of incursion in Social Networks), average scores were obtained that differed from each other. The measures of the experimental group ($M(x) = 119,1$; $S.D.(x) = 0,24$) and the control group ($M(y) = 45,1$; $S.D.(y) = 1,06$). Regarding the statistical analysis, the differences were corroborated with a degree of success of 99% ($t(39) = -2,146$; $sig. = ,000$; $p < .001$).

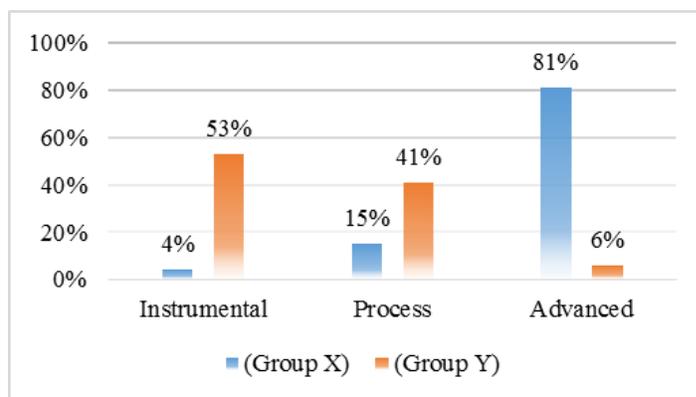


Fig. 3. Digital competences in posttest measurement.

These results allowed us to discover that the subjects of the vulnerable context remained in states of attention or cognitive braking, even if they were familiar daily with digital influences, caused by the devices of other relatives or close friends (cell phone, tablet, PC), as well as so do the results of other studies [6], [7], [8]. Here we can affirm that, using digital devices, contributed to them in different communication and socialization areas, but their digital skills were worn out when they were neglected for other reasons at different times in their lives (own businesses, easy work or other leisure activities). The context in which they developed, and their remuneration for retirees, did not require them to develop the skills they needed to increase their sources of communication or learning. In this case, the activities based on the use of technology, and the recollection of sequential steps of the Social Networks incursion program, caused adults to gradually use the networks as a means of interaction. This is similar to other approaches and studies that revealed the prevalence of a better cognitive predisposition in the use of information through the communicative act. The link of the information used and the inclusion in the network as users were means of inclusion in the social network, this movement activated their participation and motivation towards the incursion into the program [5], [8]. Regarding the progress by groups, it was obtained that more than 70% of subjects of the experimental group ($G.(x)$) developed or strengthened their digital competences at an advanced level (figure 3). This progress in the experimental group compared to the progress in the control group, demonstrated the significance that the Social Networks program represented in the elderly, this was comparable to other studies, in which, people with ages with age range of 55 and 65 years were placed in digital inclusion programs that, in general, were demanding and were prepared for young people by obtaining computer skills; however, they increased their digital socialization skills and abilities [13]. We also agree with other experimental studies in which other participants (elderly) rejected the use of technology because of fear or fear because of its complexity [14]; Although, in some cases, their capabilities are rehabilitated through the constant use of this technology, or in other subjects who never used a mobile phone or computer, they are more avid and interested in being in a premature situation, which was really exciting. These evidences led us to a more particular study. The competences dimension to use technology tools (CUHT), compared in the experimental and control groups, provided us with evidence of group differences in the posttest measurement ($G.(x)$: $M = 15,1$, $S.D. = 1,10$; $G.(y)$: $M = 7,02$,

S.D.= 0,31). These were significant in the posttest measurement ($t(38) = -2105$; sig. = ,001; $p < .005$), although the picture was somewhat different in the comparison made in another dimension (interpersonal competences in media - CI). The data obtained on this dimension also presented differences of support for the experimental group (Social Networks program), since they were significantly different in this group (G. (x): $M = 14,51$; S.D. = 0,23; G. (y): $M = 5,5$; S.D.= 1.07; sig. = ,003; $p < .005$). This value showed a minimum distance from the previous dimension. The benefits were achieved in 65% of the total subjects in the experimental group, who were in advanced level, compared to 6% of elderly people who arrived at the instrumental level. Which indicated that individuals in the experimental group developed skills to manage or apply web pages on the Internet, which helped them communicate effectively on the web. However, for them it was more complex to access social networks daily after each session, at home many had no resources with which to practice or reinforce what they learned in the program, which could be the mitigation of the lack of greater social interrelation in your personal network accounts. Regarding the opinions of the participating public, some comments were found regarding the activities of the program, which served as support for some results regarding the dimension of social interrelation in networks:

“...If I had learned before I would have communicated so far so, it is very easy to enter and write, I can do it up to twice, add my password and it helps me to open my Facebook without hesitation...” (Mariana, 88 years).

“Sometimes I find it difficult to get in, but I do it in the morning when I wake up, I greet my friends in the mountains and they see it at night, I haven't seen them for a long time...” (Alberto, 90 years).

“This WhatsApp is amazing, everyone answers me, but sometimes I stay late to respond to the last friend” (Jovert, 91 years).

“...After entering to comment on Twitter I understood that it only serves for that or send messages, I prefer to communicate via Facebook...” (Rosa, 89 years).

“So much information came to me in my mail on Wednesday that I no longer knew what to do. The good thing is to have someone to help you, without that the mail would be closed until now, it is easy to create an account there...” (Grisela, 83 years).

5 CONCLUSIONS

The main conclusions allowed to adduce that the program of incursion in Social Networks managed to open learning modalities in the elderly, understanding it as a social being, a being that is interrelated with positive attitudes for continuous improvement and self-improvement. The program was effective in digital competences, through the initial didactic taught in the subjects (didactic familiarization), this allowed the opening to learning in people who rejected the use of technology, and who, came from vulnerable contexts. Regarding the Competences to use technology tools (CUHT) dimension, the students in the experimental program presented differences in their scores with respect to the control

group. The participants evolved by participating in the pedagogical phases proposed in the project: Thematic Introduction, Network Registries, Digital Interactivity. The purpose of each of these activities was to allow them to establish relationships between classmates, and share with their relatives or closest neighborhood friends about the classes they received on Social Networks. Regarding the Interpersonal Competences (CI) dimension, significant differences were obtained in the experimental group, these supported the scores that the assisting elders poured through the questionnaire. Although the statistical differences in this dimension were of less statistical weight than the others, the qualitative results allowed us to establish that part of the program rehabilitated communication between the intervening subjects, and fueled the desire to learn in digital media.

6 CONFLICT TO INTERESTS

The authors of the article declare no conflict of interest about this scientific production.

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