Responsible for the Project:
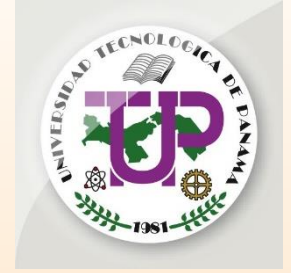
RESEARCH GROUP IN EDUCATIONAL TECHNOLOGY – GITEIC

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Agenda

Motivation

Basic Concepts

Objective of the Research

Methodology

Results

Conclusion

Motivation

Every country in the world is experiencing an increase in both the number and proportion of older people in the population. In 2030, one in six people in the world will be 60 years old or older. By that time, the population group aged 60 and older will have risen from 1 billion in 2020 to 1.4 billion.

Implementing computational thinking strategies will allow older adults to develop critical thinking skills, problem solving, teamwork and creativity. The digital literacy process is carried out with greater reliability, which allows the elderly to develop in this dynamic and disruptive world, offering them the opportunity to enter the silver economy.

Concepts

Elderly

The concept of "older adult" refers to a stage of a person's life in which they have reached a certain advanced age, usually from the age of 60 or 65, depending on the region and specific criteria.

Digital Literacy

It is the ability to use technology effectively to access, evaluate, create and communicate information.

Computational Thinking

Computational thinking, according to Wing, "involves solving problems, designing systems, and understanding human behavior, drawing on the fundamental concepts of computer science.

COMPUTATIONAL THINKING

DECOMPOSITION
It is the ability to break down complex problems into smaller parts to simplify their solution.

PATTERN RECOGNITION
It consists of detecting patterns in similar problems to reuse them and integrate them into the solution of another problem.

ABSTRACTION
It is the recognition of the most relevant information and eliminating unnecessary details.

ALGORITHM
It is the ability to automate solutions through a series of defined and structured steps

TEAMWORK
It is team collaboration through the exchange of ideas to find solutions.

CREATIVITY
It is the ability to think differently to create new things from your own ideas.

CRITICAL THINKING
It is the ability to organize data logically, then analyze it and predict results.

PROBLEM RESOLUTION
Ability to analyze a problem, define objectives, identify solutions and choose the best option to achieve the desired result.

Critical Thinking

Processes, strategies, and mental representations that people use to solve problems, make decisions, and learn new concepts.

General Objective

Evaluate the potential of computational thinking as a key strategy for the digital inclusion of older people.

Research Question

How are computational thinking and especially critical thinking strategies that foster the digital inclusion of older people?

Methodology

Requirements for the development of the experience.

The study population consisted of 53 people over 55 years of age, who belong to the Corregimiento de Betania.

Age3 Alpha and Omega Association of Villa Cáceres.

Association - Santa Marta Parish (Altos del Chase).

Let's Renew Our Lives Association of La Locería.

The research has a descriptive scope with a mixed approach

To collect the information, two instruments were developed:

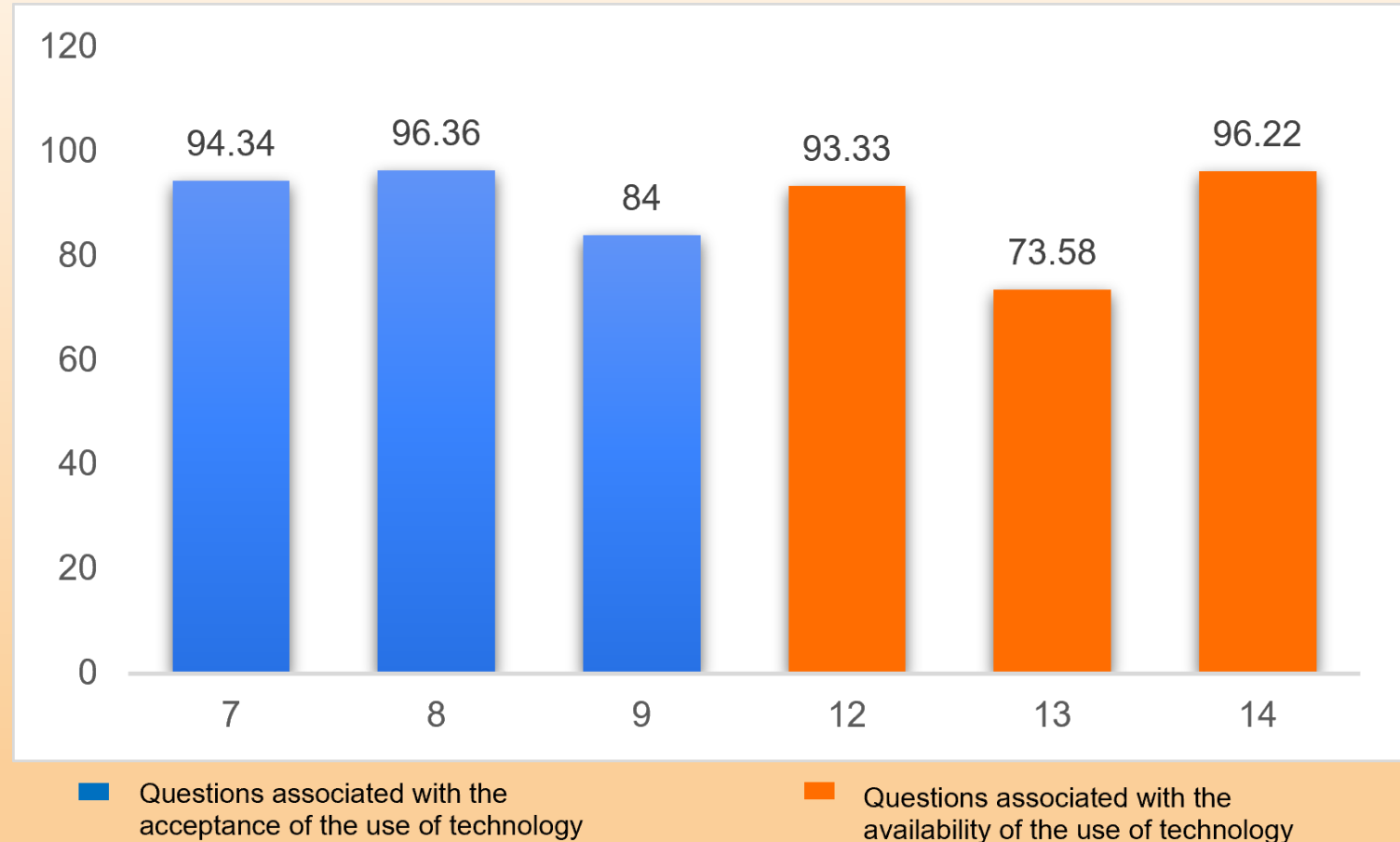**Instrument 1:** Characterization and Attitudes in the use of technology.

Demographic section.

Attitudes section.

**Instrument 2:** Evaluation of Critical Thinking skills.

Result(1): Instrument Characterization and Attitudes in the use of Technology

- An average of 92% acceptance of the use of technology, through an open attitude to its use, to solve problems with a high level of comfort.

- An average of 88% availability in the use of technology, through lifelong learning, training assistance and permanent updating.

Bar chart with values: 7 = 94.34, 8 = 96.36, 9 = 84, 12 = 93.33, 13 = 73.58, 14 = 96.22

Legend:
- Questions associated with the acceptance of the use of technology
- Questions associated with the availability of the use of technology

Result(2): Instrument Characterization and Attitudes in the use of Technology

The question associated with the benefits of using technology, the Communication option obtains 63%, indicating that older people experience an improvement in the ability to communicate with family and friends using digital technology.
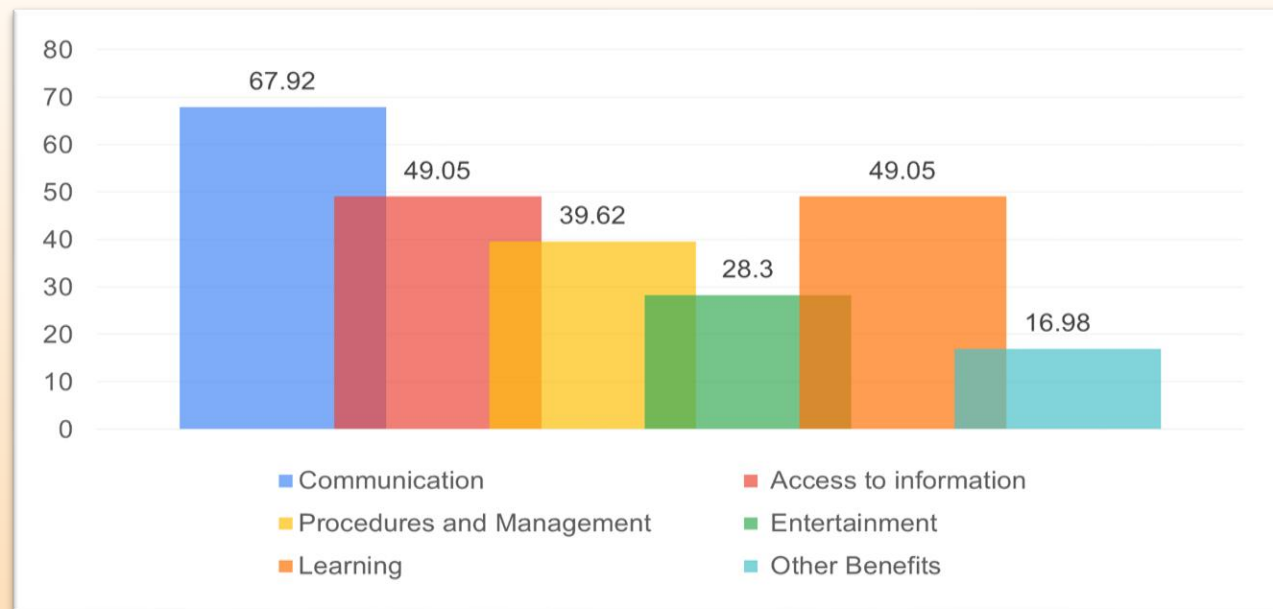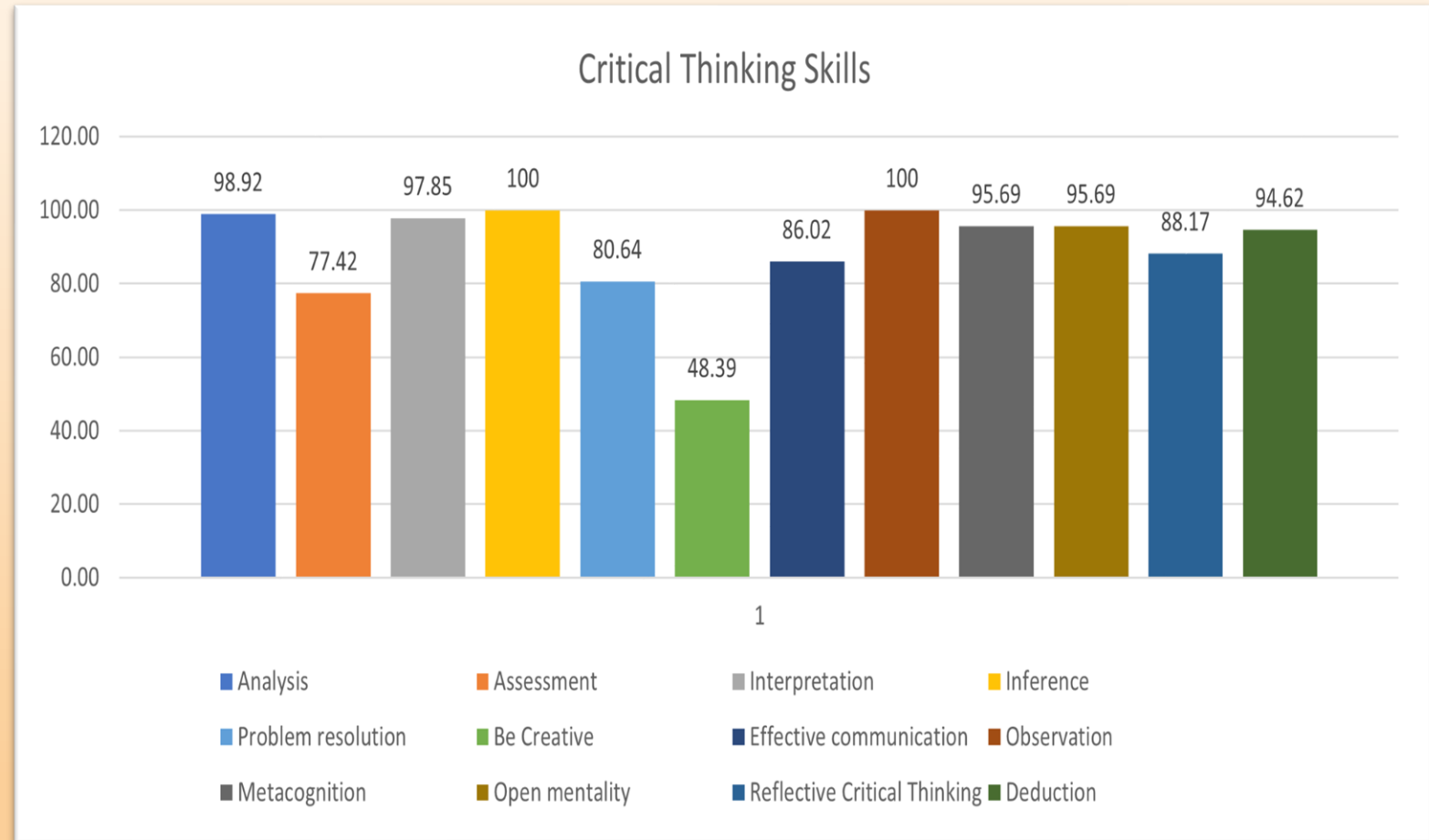
The question associated with the difficulties when using ICTs, the option Lack of Technical Knowledge, obtains 64%, and Difficulty in understanding the operation of the applications obtains 44%
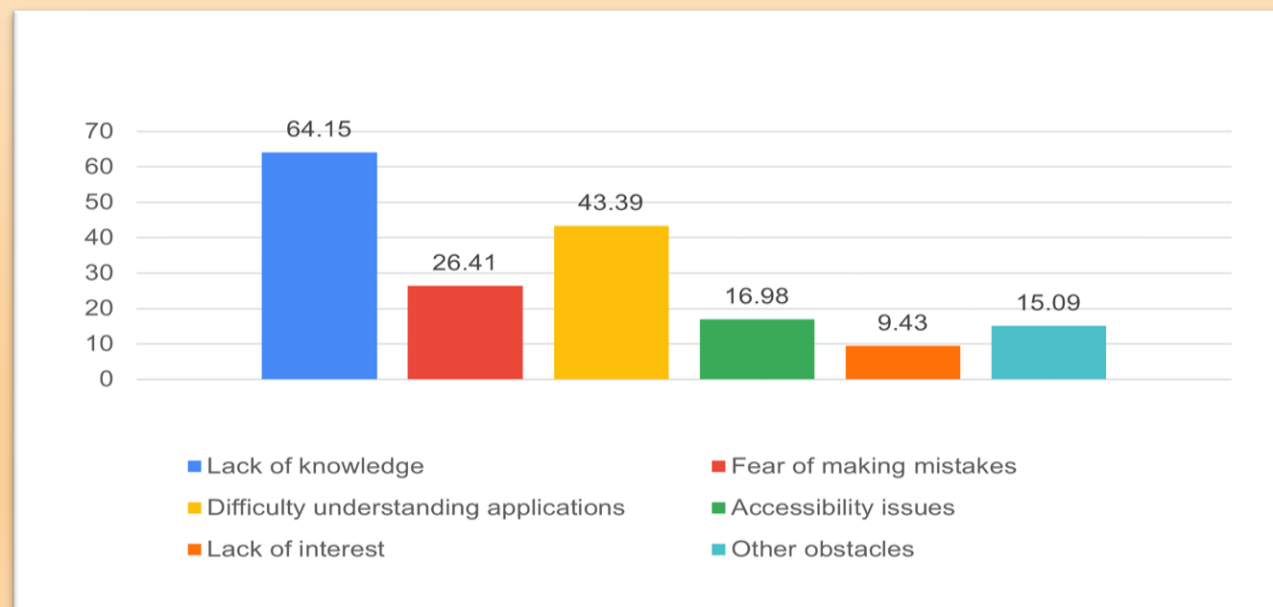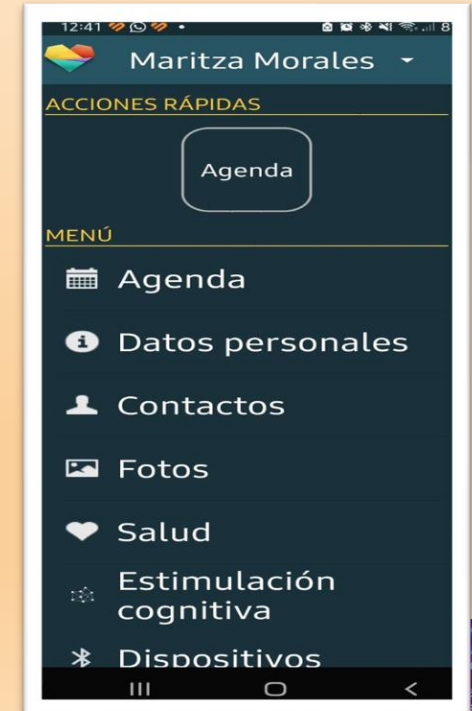
Result(3): Critical Thinking Skills

- The results suggest that older people maintain the skills of analysis, interpretation, inference and observation, due to the accumulation of experience and knowledge throughout their lives.

- Older people assessed have the potential to adapt and use technologies, taking advantage of their capacity for metacognition, reflective critical thinking, deduction and open-mindedness.

- In evaluation, complex problem solving and creativity there are opportunities for improvement through activities such as: art classes, music, strategy games, math exercises. etc

Critical Thinking Skills

Skill	Value
Analysis	98.92
Assessment	77.42
Interpretation	97.85
Inference	100
Problem resolution	80.64
Be Creative	48.39
Effective communication	86.02
Observation	100
Metacognition	95.69
Open mentality	95.69
Reflective Critical Thinking	88.17
Deduction	94.62

Activities developed in the Project

❑ Telemonitoring of health.

❑ Kwido application (intelligent virtual assistant, designed for the care of the elderly).

❑ Taichi and Brain Gymnastics sessions.

❑ Participation in forum.

❑ Motivational Talks.

❑ Training in ICTs.

Conclusions

Computational thinking and critical thinking are necessary skills to achieve digital literacy in older people. These skills enable them to harness the potential of technology, keep their minds active, and communicate effectively in an increasingly digitized world.

Computational thinking and critical thinking are fundamental to the digital literacy process of older adults, as it prepares them to enter the silver economy.

The population of older adults was characterized by having an academic and professional training that influenced the skills valued for critical thinking being generally satisfactory, which will allow a process of digital inclusion.

The findings presented in this first stage of the experience are conditioned to the requirements defined for this phase of the project.

Experience has shown that older adults generally have a willingness and acceptance to use technology to solve problems in their daily lives.
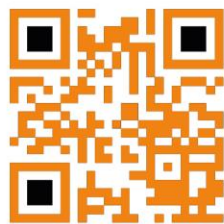
A second phase of the project would be to refine the instruments and contrast the results with the development of another experience of digital literacy in the elderly, which includes the Retirees of Soná, La Chorrera and the parish of Our Lady of the Angels.

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