Aprendizaje activo y colaborativo usando tecnología

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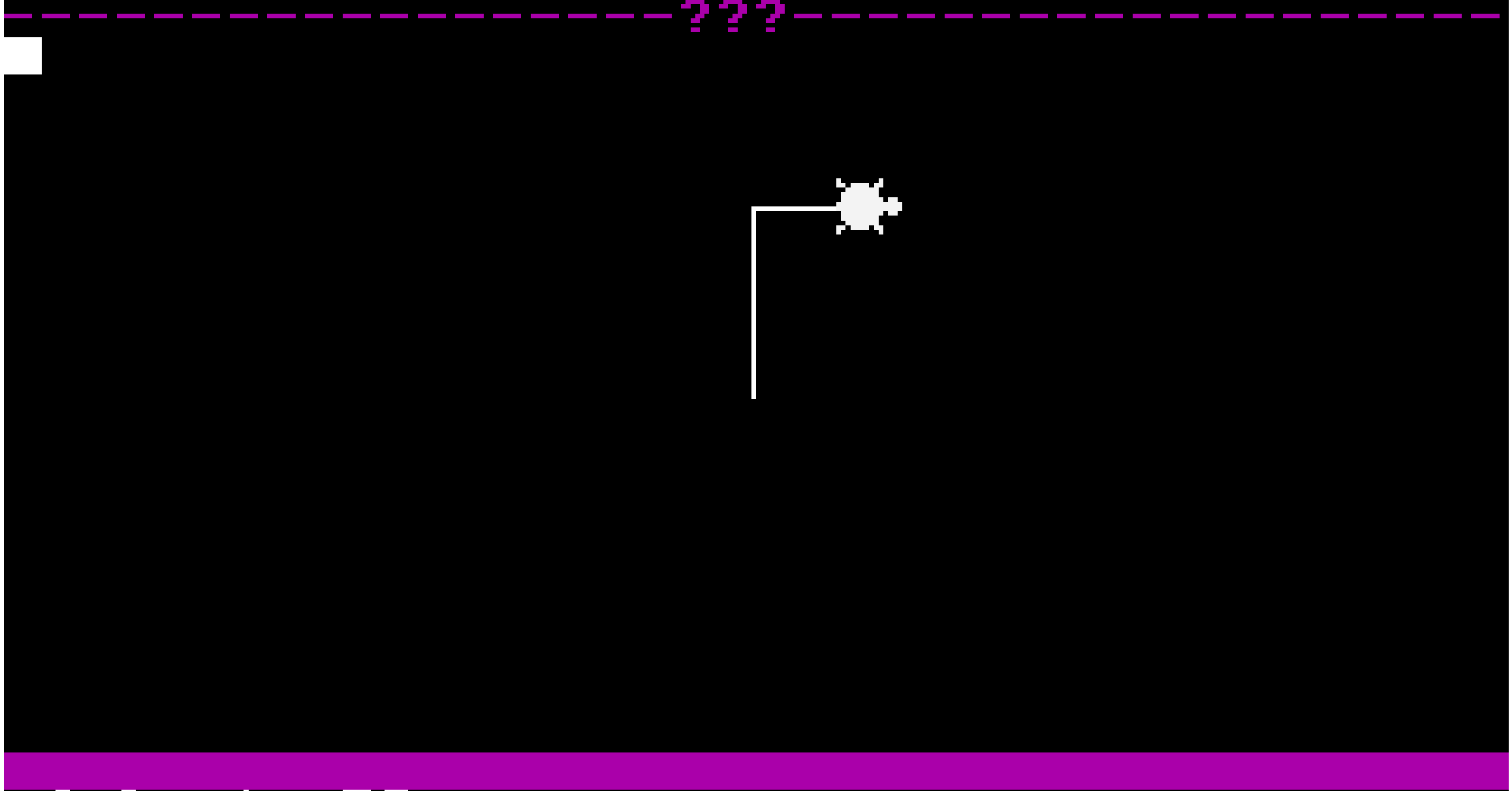

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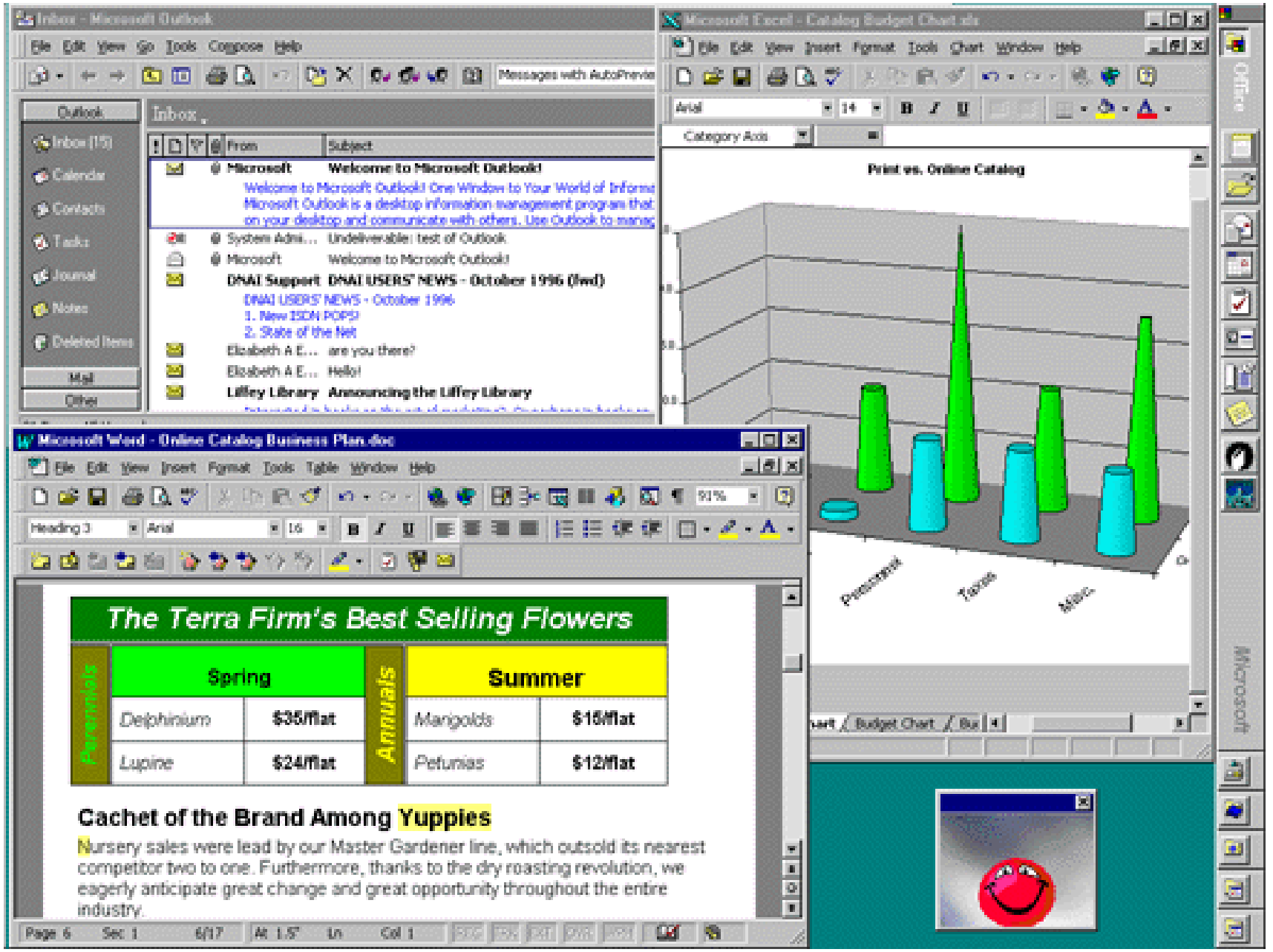
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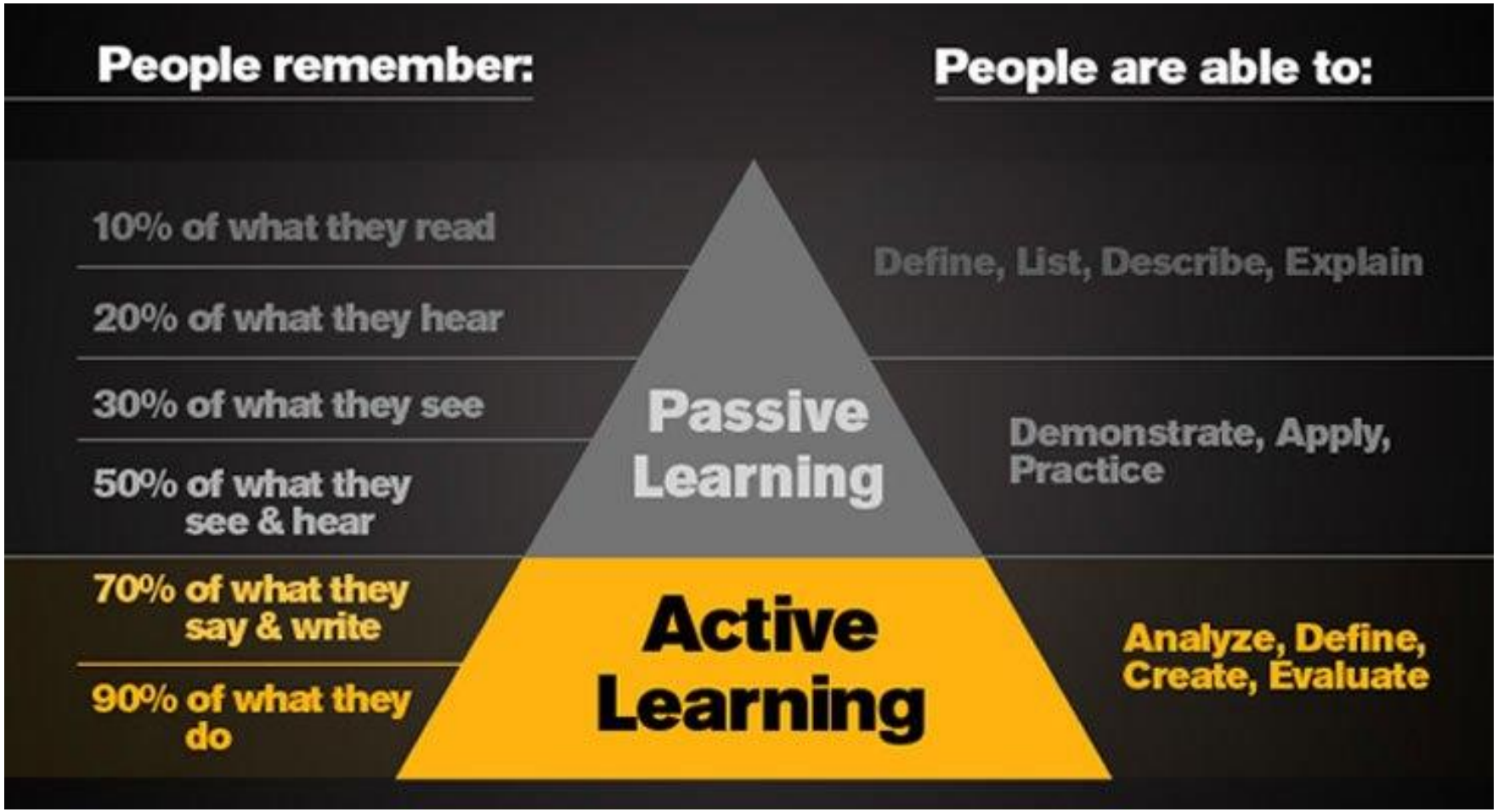

https://teachonline.asu.edu/2013/03/how-does-active-learning-support-student-success/

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Computers & Education 42 (2004) 289–314

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Computer supported collaborative learning using wirelessly interconnected handheld computers

Gustavo Zurita*, Miguel Nussbaum

Departamento de Ciencia de la Computación, Pontificia Universidad Católica de Chile, Escuela de Ingeniería, Av. Vicuña Mackena 4860, Casilla 306, Santiago 22, Chile

Received 18 September 2002; accepted 12 April 2003

Abstract

Collaborative learning is widely used in elementary classrooms. However, when working without technological support, some problems can be detected. We describe how weaknesses in coordination, communication, organization of materials, negotiation, interactivity and lack of mobility can be solved with a mobile computer supported collaborative learning environment with Handhelds interconnected by a wireless network. The collaborative activities, analyzed with and without technological support, are math and language activities for 6- and 7-year old children. The results of our work identify an effective way of using handheld computers to support collaborative learning activities that address the above mentioned weaknesses.

mCSCL

Fig. 8. Snapshots of children working with MCSCL activities: (a) children working with a language MCSCL activity, and (b) five children working in a math MCSCL activity.

Microsoft Research

External Research Digital Inclusion Program

The Classroom of Tomorrow, Built with Today's Technology

Computers can be instrumental in transforming education in underserved communities, but not if they are simply used to facilitate memorization and test-taking. A team of researchers in Chile is exploring affordable and innovative uses of computers in the classroom that promote collaborative learning and nurture intellectual creativity.

Many educators want to move beyond traditional "skill and drill" learning methods—in which teachers lecture to passive students—and toward collaborative learning in which teachers guide students in exploring ideas and solving problems. While traditional methods can be effective for teaching literacy, numeracy and other basic skills, new approaches can better nurture creativity, flexibility, teamwork and other valuable traits.

Computers can help by putting children in control of their own learning. But they also introduce new challenges. For example, students often learn better when they work in groups, but desktop and laptop PCs are designed for individual use. How does the learning dynamic change when teams of students work collaboratively using small devices, such as mobile phones? What happens when several children gather around a single computer, each with their own mouse, collaborating to solve problems?

For Dr. Miguel Nussbaum, a computer science professor at the Catholic University of Chile, handheld devices, mobile phones and shared PCs with multiple mice are promising learning tools because they give children direct access to technology while also enabling richer interaction with their peers.

"It is essential that the technological network support the social network—the students should be able to collaborate seamlessly," Nussbaum says. "The students' face-to-face interaction should be the final aim, and the technology should be a transparent driving force."

With support from the Microsoft Research Digital Inclusion Program, Nussbaum and

Fast Facts

Project: Wi-Fi Enabled Phones for Bridging the Cognitive Divide and Transforming the Classroom Experience

Project Principal:
Dr. Miguel Nussbaum,
Catholic University of Chile

Web Site:
http://www.mobilelearning.cl/

Profile:
Researchers at the Catholic University of Chile are exploring how mobile phones and other low-cost portable devices can be used to encourage collaborative learning and 21st-century skills development, particularly in low-income communities that cannot afford expensive technology investments.

Digital Inclusion Program

The Microsoft Research Digital Inclusion Program provided US$1.2 million in research funding in 2006 to empower academic researchers worldwide to tackle technological challenges that could positively affect health, education and socioeconomic conditions. The 17 recipients, selected from among 162 proposals from 34 countries, received technology resources as well as project funding.

The Digital Inclusion Program is administered by the External Research group within Microsoft Research and is part of the group's ongoing commitment to investing deeply in innovative research. The External Research group collaborates with the world's foremost researchers in academia, industry and government to move research in new directions across nearly every field of computer science, engineering and general science.

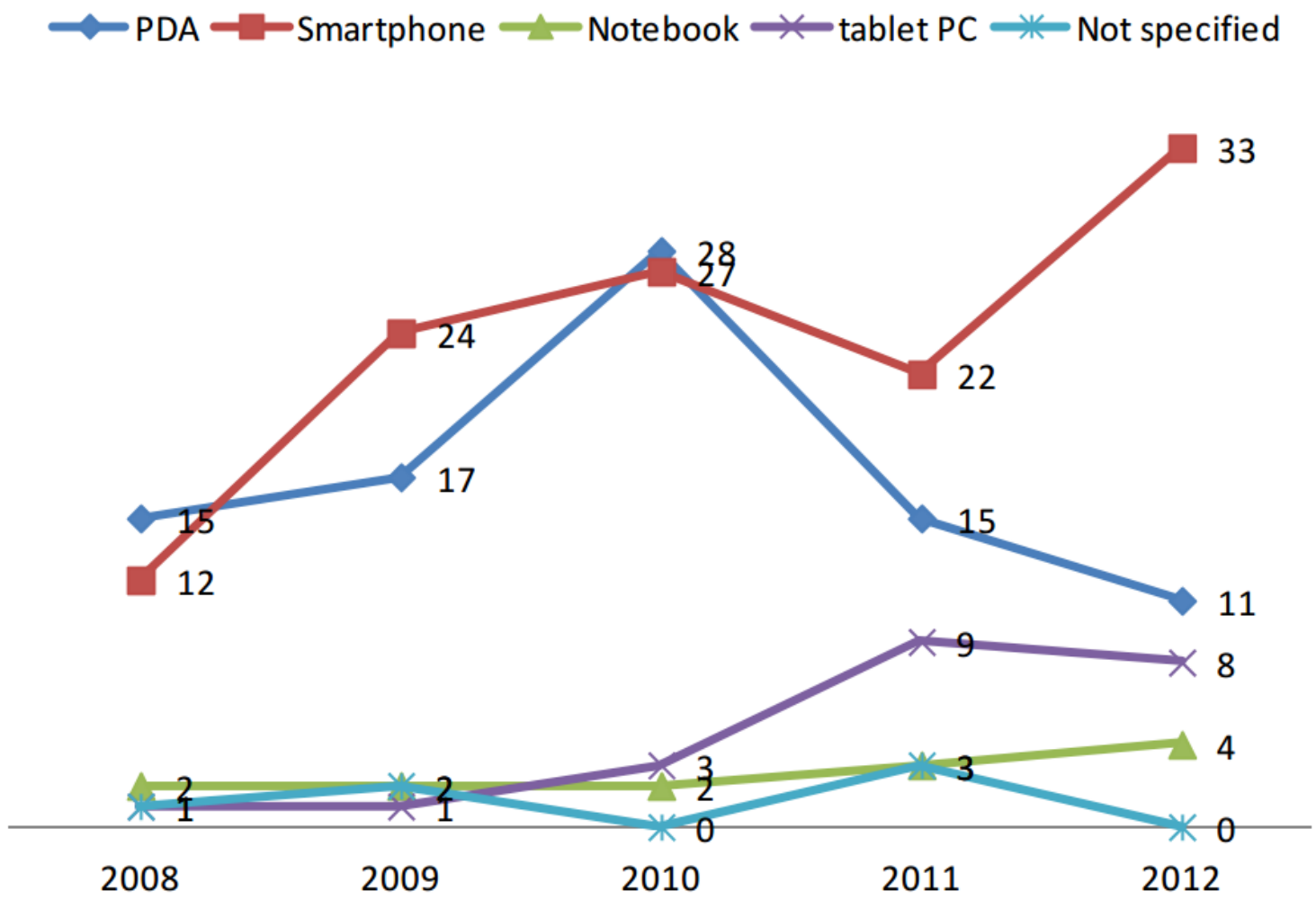
Figure 1-4: Imate SP5 mobile phone

The activity chosen to be used in this work was COL (abbreviation for Collaborative Activity), a face to face collaborative learning application based on multiple choice

Paradigmas

Nuevas tendencias

Figure 3 Mobile devices adopted in the applications in 2008–2012 (see online version for colours)



Applications, impacts and trends of mobile technology-enhanced learning: a review of 2008–2012 publications in selected SSCI journals

Gwo-Jen Hwang*

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Guest Editorial: Special Issue on Seamless, Ubiquitous, and Contextual Learning

Chee-Kit Looi, Lung-Hsiang Wong, and Marcelo Milrad

ADVANCES in mobile and sensor technologies, cloud computing, and related Internet technologies have been phenomenal in recent years. Worldwide, the number of people with access to mobile technologies is also increasing very rapidly. There are currently more than 1.75 billion smartphone users in the world [1]. The number of mobile apps for supporting learning and education has grown exponentially. Due to their relatively affordable cost and ubiquity, mobile technologies enable educators to reach out to populations of people that do not have universal access to education.

overlap almost inevitably to some extent, we can identify a primary focus for each paper in one of these three strands. Thus, we will use this perspective to organize and cluster the papers in this issue.

Four papers in the seamless learning strand address issues concerning design of seamless learning in art education, infrastructure to provide mobile seamless learning support, a research framework for designing seamless language learning, and an evaluation of students' progressions with seamless learning. Yael Kali, Tsvi Kuflik, Ornit Sagy, Orit Mogilevsky and Emma Maayan-Fanar report a

MALL (2010)

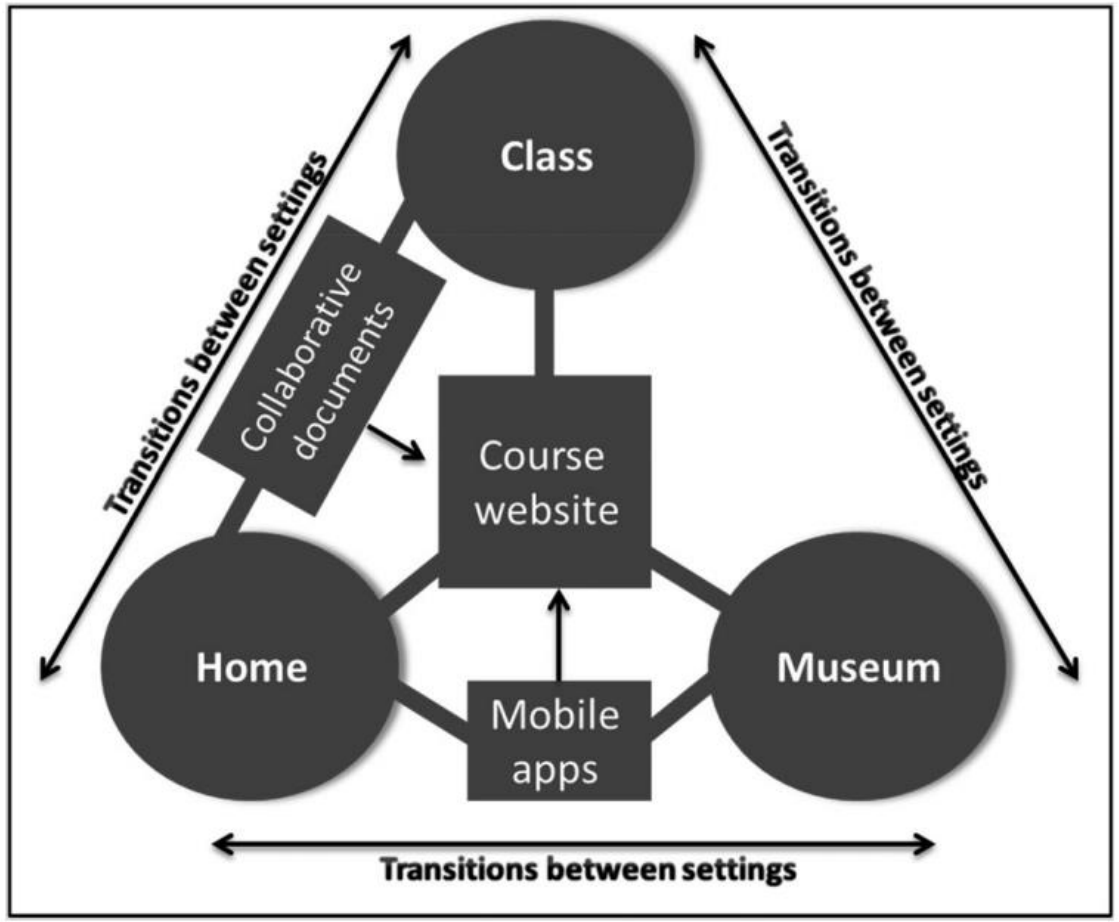


Fig. 1. The role of technology in streamlining learning across settings.

below) and by the instructor who passed between the teams to provide assistance. The first two course assignments

Fig. 2. Mobile visitor guide screenshots.

3.3.2 *Collaborative Documents*

As mentioned above, each of the team spaces was linked to a set of editable collaborative documents that enabled a joint effort of knowledge construction. Google docs were used to allow simultaneous work of several group members. Learning between teams was encouraged by granting viewing permissions to all of the teams' collaborative documents. Instructors had editing permissions allowing additional scaffolding by providing formative feedback.

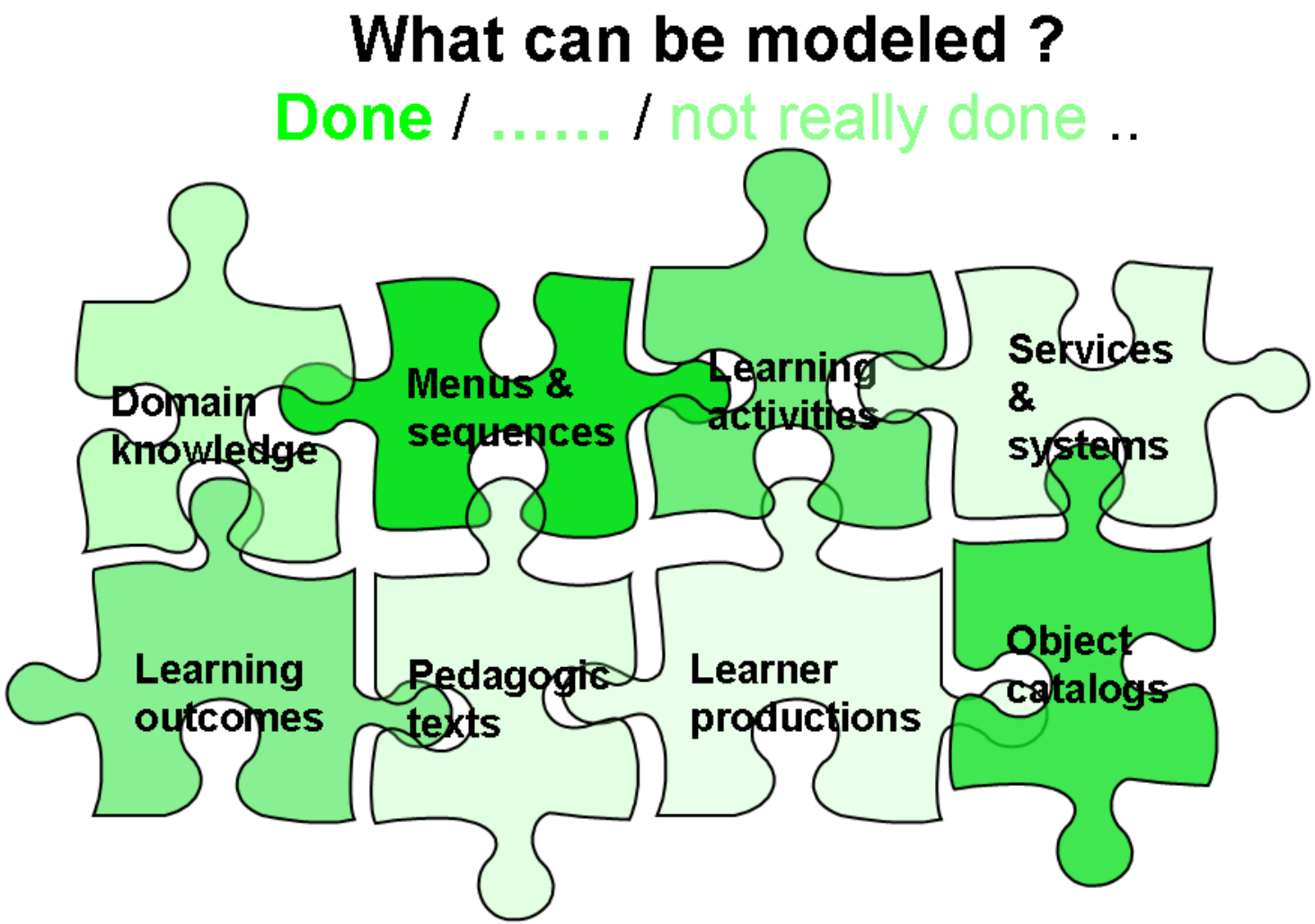
Figure 5 SCROLL interface of Android mobile phone (see online version for colours)

(a)Add ULLO (b) An example (c) ULL List (d) Quiz

Figure 6 Learning log navigator (left); path to ULLOs (middle); ULL time map (right) (see online version for colours)

Shared spaces

Figure 2. "My Character" interface (left) and "My Group" interface (right)



Educational Modelling Languages

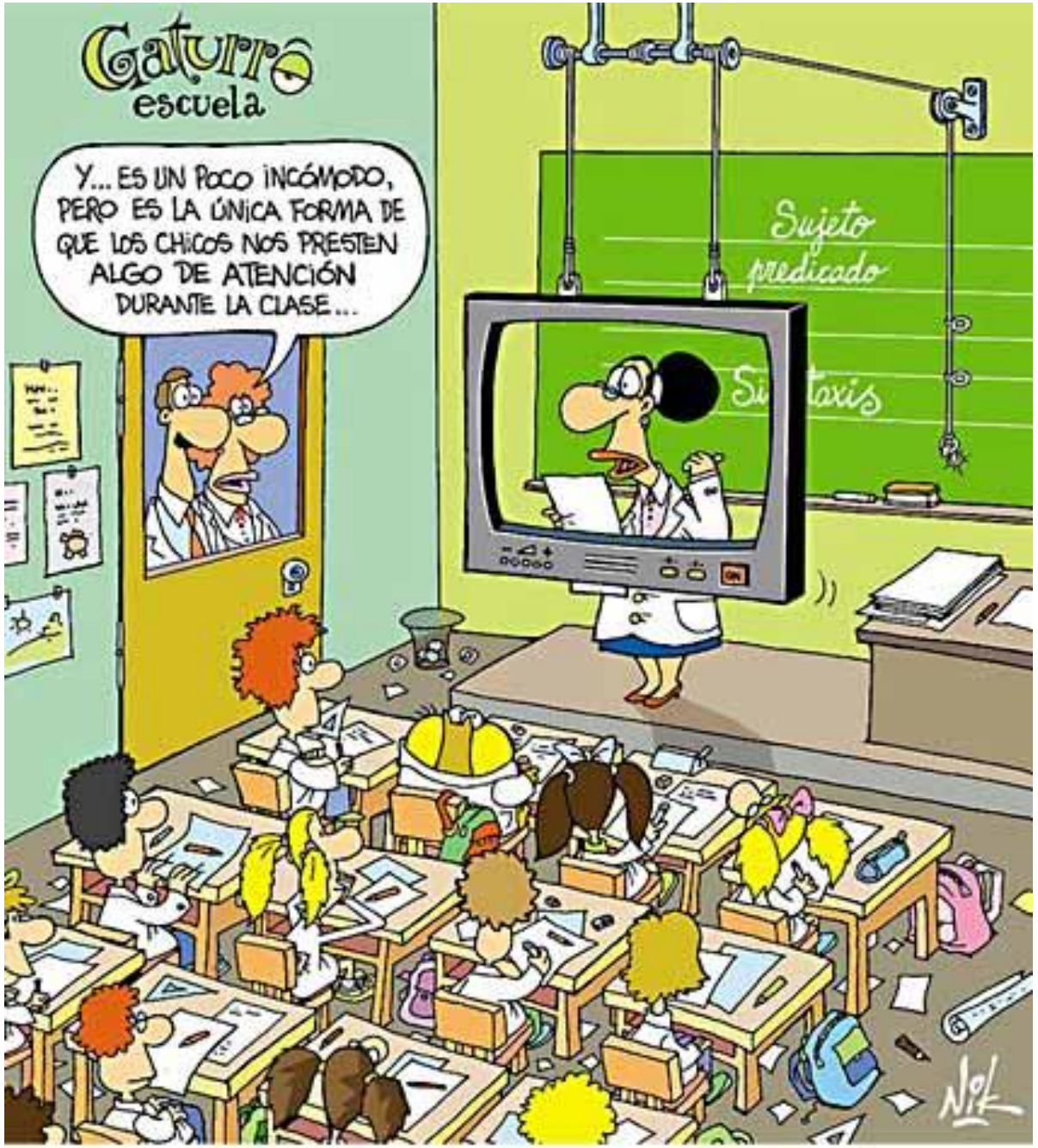
2012 Seventh IEEE International Conference on Wireless, Mobile and Ubiquitous Technology in Education

Using IMS Learning Design to Author Authentic Learning Examples in Mobile Context

Ryan Jesse, Kinshuk, Maiga Chang
School of Computing and Information Systems
Athabasca University
Athabasca, Canada
ryan.jesse@usask.ca, kinshuk@athabascau.ca, maigac@athabascau.ca

Figure 1. Conceptual design of the mobile authentic authoring tool.

IMS-LD en mobile authoring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Y... ES UN POCO INCÓMODO, PERO ES LA ÚNICA FORMA DE QUE LOS CHICOS NOS PRESTEN ALGO DE ATENCIÓN DURANTE LA CLASE...
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predicado
www.gaturro.com

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http://www.toptools4learning.com/infographic/

Orquestación

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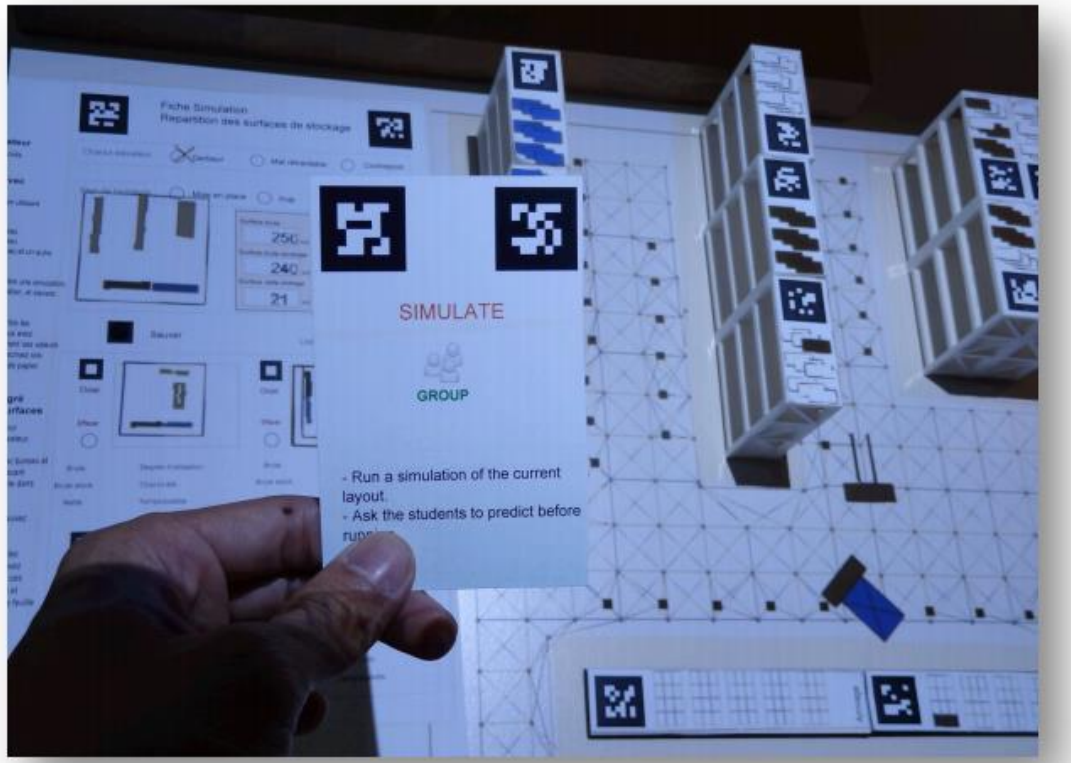


Figure 1. Orchestration Card

Dillenbourg, P. (2013) Design for Classroom Orchestration, *Computers & Education*, 69 pp. 485–49

Tecnología integrada con pedagogía

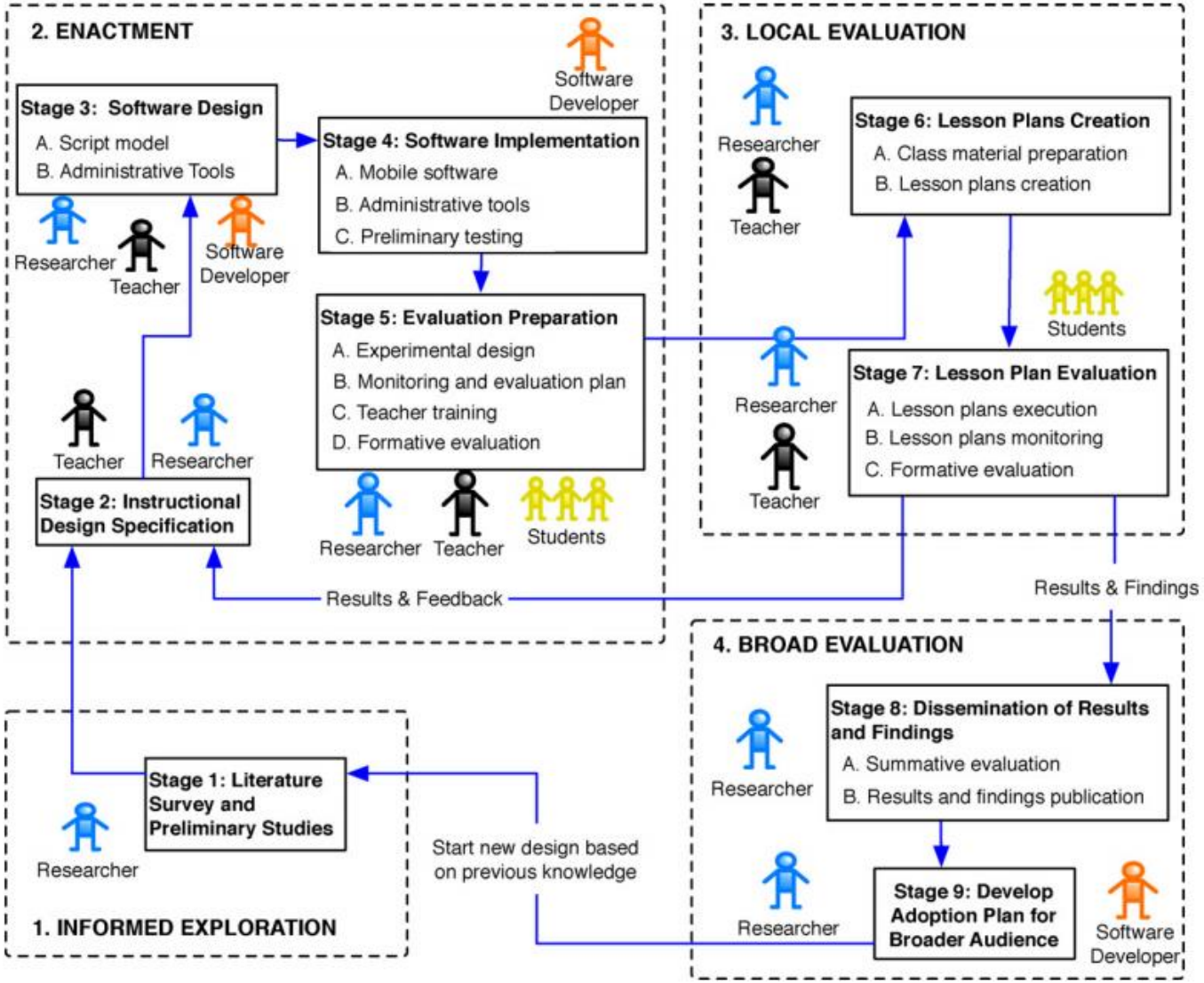


Fig. 4. Design-based development of pedagogical designs for MCSCL.

Proceso de diseño

Contents lists available at ScienceDirect

The Journal of Systems and Software

journal homepage: www.elsevier.com/locate/jss

Implementing collaborative learning activities in the classroom supported by one-to-one mobile computing: A design-based process

Claudio Alvarez*, Rosa Alarcon, Miguel Nussbaum

Computer Science Department, School of Engineering, Pontificia Universidad Catolica de Chile, Chile

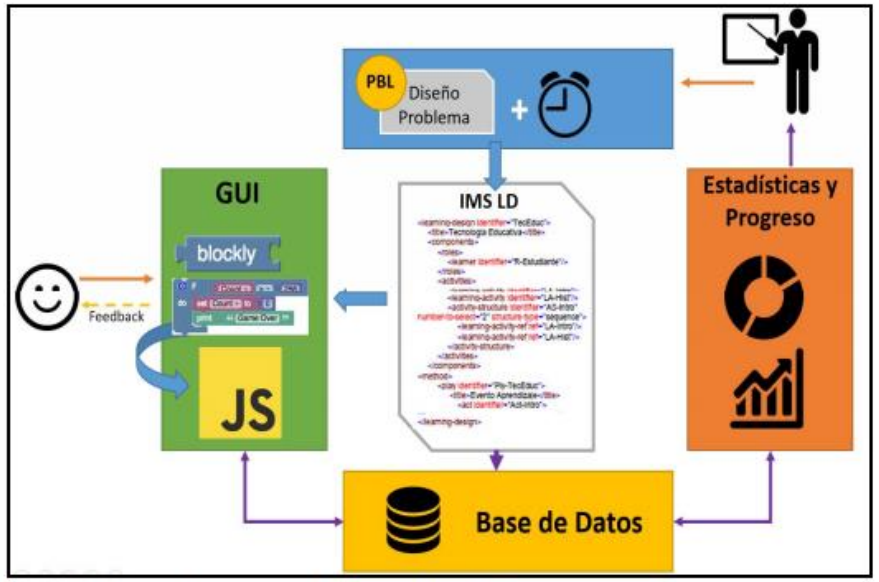


Fig. 2: Componentes de la solución

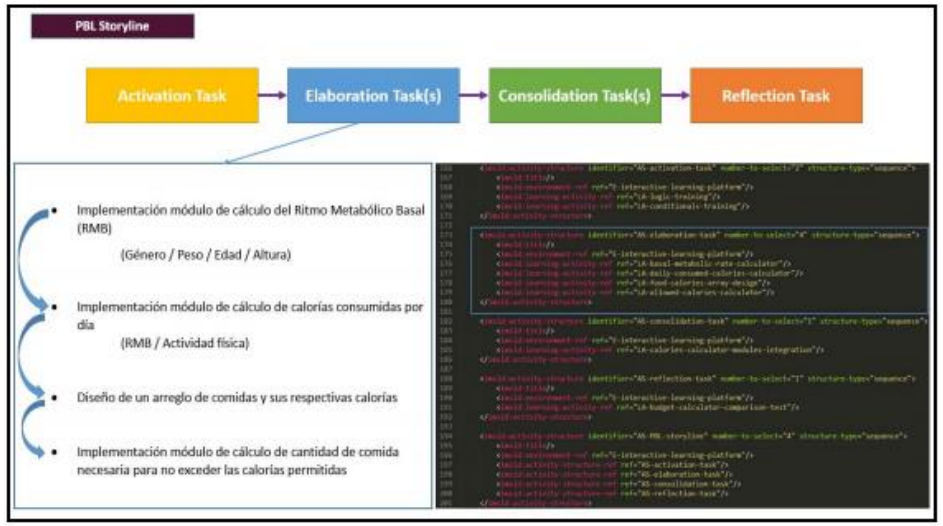
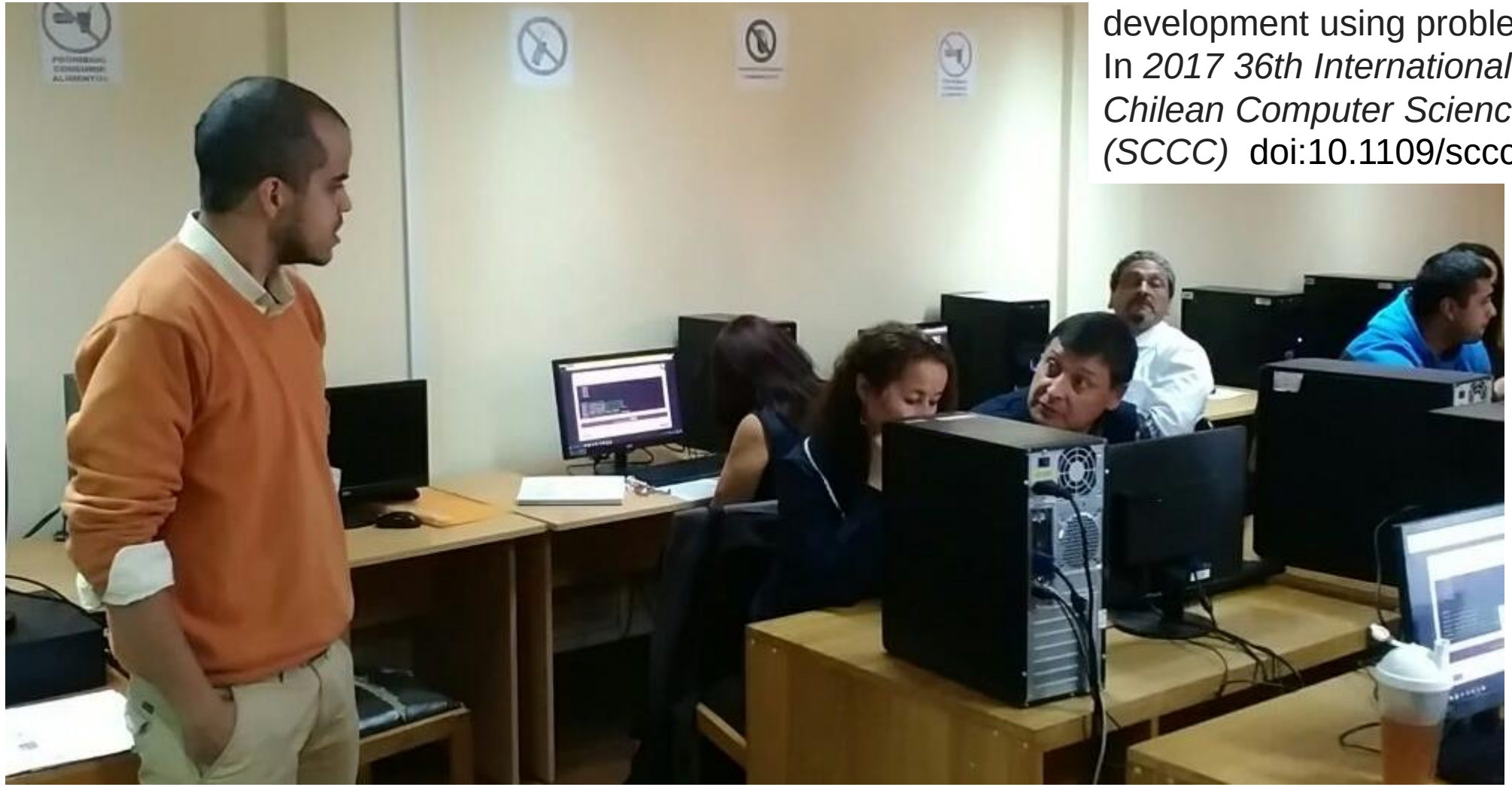


Fig. 3: Ejemplo de asociación entre PBL storyline y actividad, descrita en IMS-LD.

Diseño integrado con la herramienta

Calderon, J. F., & Ebers, J. (2017). Problock: A tool for computational thinking development using problem-based learning. 2017 36th International Conference of the Chilean Computer Science Society (SCCC). doi:10.1109/sccc.2017.8405132

Calderón, J. F., & Ebers, J. (2017, October). Problock: A tool for computational thinking development using problem-based learning. In *2017 36th International Conference of the Chilean Computer Science Society (SCCC)* doi:10.1109/sccc.2017.8405132



Co-construcción

Calderón, J. F., Nussbaum, M., Carmach, I., Díaz, J. J., & Villalta, M. (2016). A single-display groupware collaborative language laboratory. *Interactive Learning Environments*, *24*(4), 758-783.

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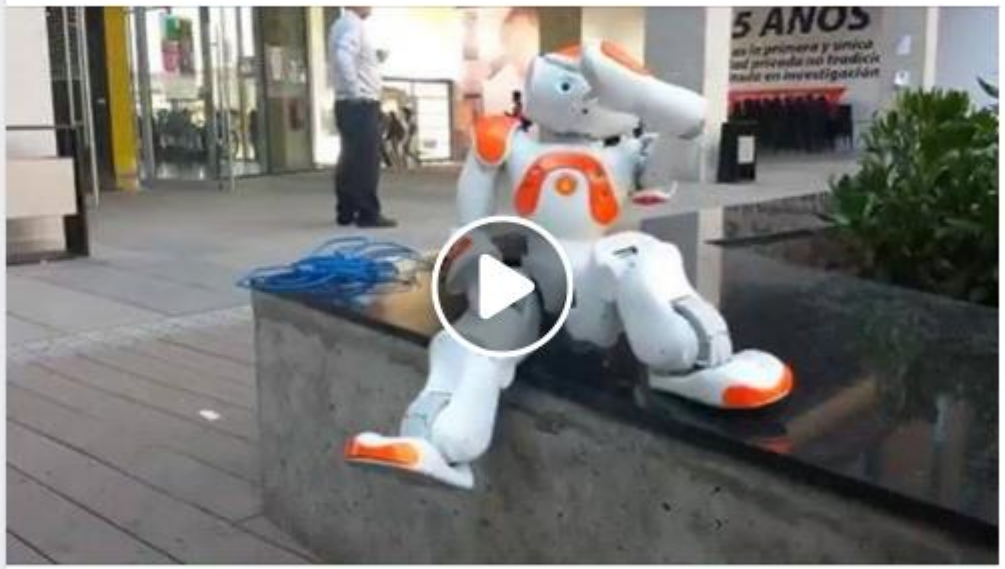

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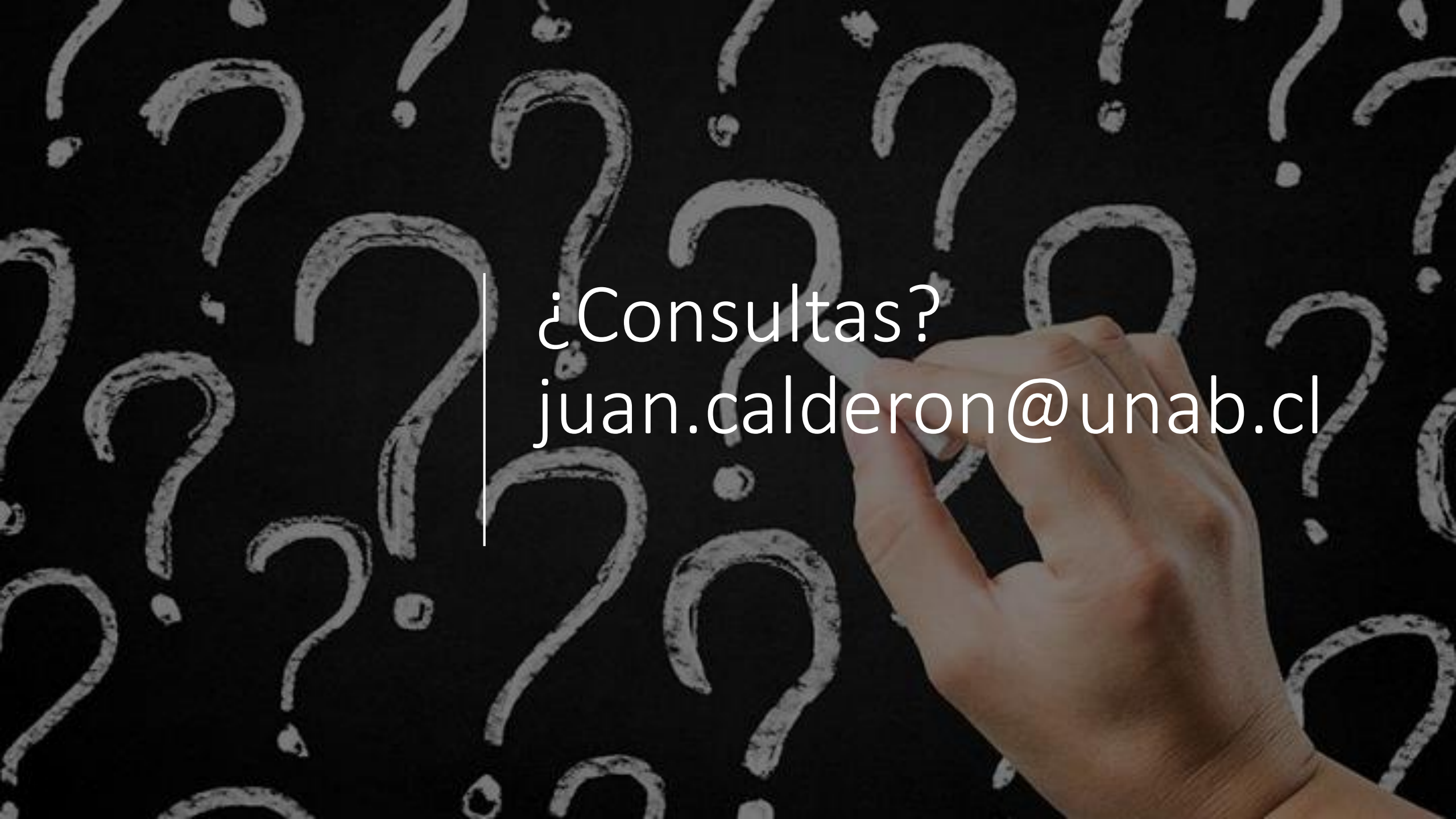
CONCLUSIONES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