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PROMOTING SELF-REGULATED LEARNING THROUGH TEACHING IN HIGHER EDUCATION

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WHY PROMOTE SELF-REGULATION OF LEARNING IN HIGHER EDUCATION?

Cognitive and intelligence skills do not, by themselves, explain academic achievement
(Zimmerman, 2001).

It allows the development of skills that will last a lifetime and will be extrapolated to other contexts
(Vrieling, Batiens & Stijmen, 2012; Zimmerman, 2002).

It is associated with academic adjustment in university students and higher retention
(Cazan, 2012).

Possible ability to learn and train, which opens a field of intervention in Educational Psychology
(Schunk, 2008).

Many students do not come to university with this ability
(Cazan, 2013; Cerezo, Núñez, Rosário, Rodríguez & Bernardo, 2010; Inan & Yüskel, 2010; Kistner, Rakoczy, Otto, Dignath- van Ewijk, Büttner & Klieme, 2010; Perry, Hutchinson & Thauberger, 2008).

WHAT ABOUT THE CHILEAN HIGHER EDUCATION SYSTEM?

Exponential increase in enrollment (Mineduc, 2007; 2012; 2013).

Change in the entry profile and student needs (Brunner, 2008; López, Vivanco y Mandiola; Mineduc, 2012).

High desertion rates and low success rates(Centro de Microdatos de la Universidad de Chile, 2008; Consejo Nacional de Educación, 2010; SIES 2012; Straton, O´Toole & Wetzel, 2008).
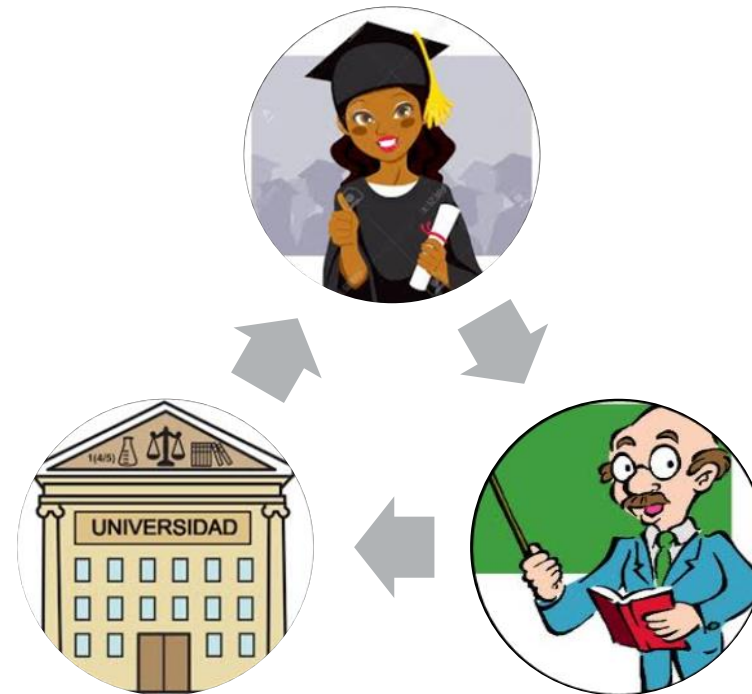
Teachers have shown difficulties in working with these students (Castillo, 2009; Fives y Buehl, 2008; Solay & Díaz, 2009).

Focus on improving teaching processes (Gonzáles, 2015).

HOW TO PROMOTE SELF-REGULATED LEARNING?

DILEMMA 1

Where do we put the focus?

HOW TO PROMOTE SELF-REGULATED LEARNING?

DILEMMA 2

How do we integrate it into the educational model?

Intracurricular
v/s
Extracurricular
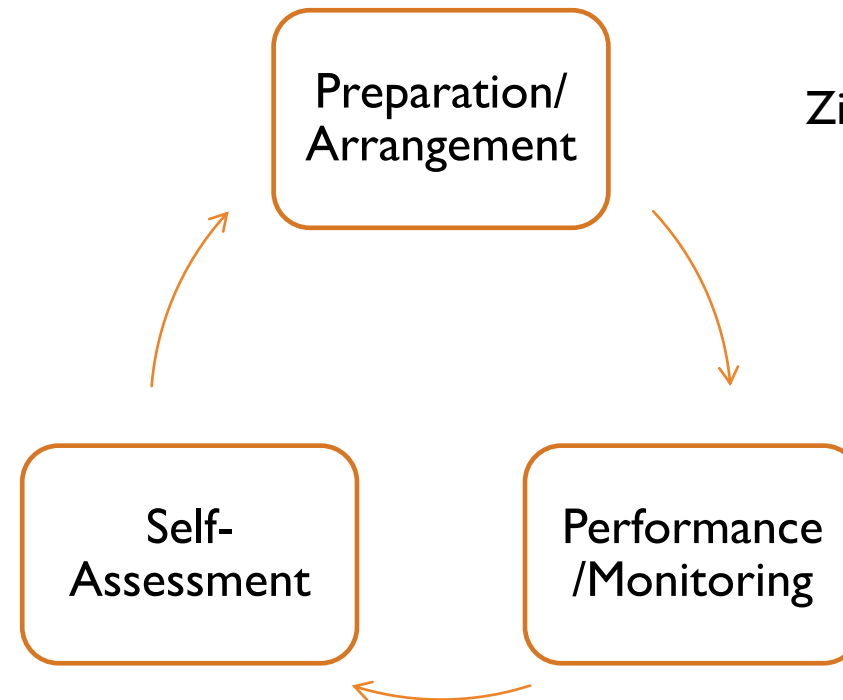
HOW TO PROMOTE SELF-REGULATED LEARNING?

DILEMMA 3

Beliefs about learning and developing self-regulation skills

Nature
v/s
Nurture

HOW TO PROMOTE SELF-REGULATED LEARNING?

DILEMMA 4

**DOMAIN
GENERAL / SPECIFIC**

Preparation/
Arrangement

Performance
/Monitoring

Self-
Assessment

Zimmerman, 2002

TEACHER TRAINING

What do we know?

- Publications are often descriptive in nature.

- Frequently published results only assess impact at the teacher level. Few studies with multilevel analysis.

- Designs lack of a control group, or they have dissimilar characteristics to the experimental one.

- No differences were found for years of experience or discipline

- Training dominated by trends.

- In our country short courses, which require greater accompaniment and follow-up.

- In promoting self-regulation, we work directly with students.

(Brew, 2007; Devlin, 2008; Gibbs & Coffey, 2000; 2004, 2004; Postareff, Lindblom- Yläne, & Nevgi, 2007; 2008; Stes, Coertjen, Van Petegem, 2010)

THREE CHILEAN INTERVENTION PROJECTS

1. Impact of a Teacher Training Program for the Facilitation of Self-regulated Learning for University Students. Doctoral Thesis.

2. Intracurricular model for facilitating self-regulation learning competencies in university students. Fondef project17I10393.

Lead by: Dr. María Pérez y Dr. Alejandro Díaz from Universidad de Concepción.

3. Teaching Practices and their Impact on the Self-Regulation of University Student Learning. Fondecyt Project - Begining 11181220.

IMPACT OF A TEACHER TRAINING PROGRAM TO FACILITATE SELF-REGULATED LEARNING FOR UNIVERSITY STUDENTS

General Objective:
Evaluate the Impact of a Training Program for University Teachers of Facilitation of Self-regulated Learning.

Instrumental	• Preparation and psychometric analysis of the measurement instruments. • Teachers and students.
Quasi experimental	• With pre and post tests / Experimental and control group. • Manipulation of a IV, to see effects in 4 DVs. • Assignment to groups and restricted control of external variables.
Multilevel	• Effects evaluated at 2 levels. • Nested data.

INDEPENDENT VARIABLE

Participation in course:
"How Can University Teachers Promote Self-Regulation of Student Learning"

S e s s i o n s
1. Self-regulation of learning, promotion of a life skill.
2. Barriers to self-regulation
3. Planning for self-regulation of learning
4. Teaching direct strategies for self-regulation of learning
5. Teaching indirect strategies for self-regulation. The teaching model
6. Assessment for self-regulation of learning. Instrument design
7. Assessment for self-regulation of learning. Qualification criteria
8. Assessment and closure

Planning Practices:
1. Creation of an environment conducive to learning (Daura, 2010).
2. Permanent inclusion of the objectives of the class (Daura, 2010; Nicol & Macfarlane- Dick, 2006; Postholm, 2011; Valenzuela and Pérez, 2013).
3. Teacher-student discussion about how to plan (Perry, Hutchinson & Thauberger, 2008).
4. Activity scheduling (Valenzuela y Pérez, 2013).

Teaching Practices:
1. Direct:
    1. Instruction of thinking skills and study strategies (Paris & Paris, 2001; Perry, Hutchinson & Thauberger, 2008; Postholm, 2010; Valenzuela and Pérez, 2013).
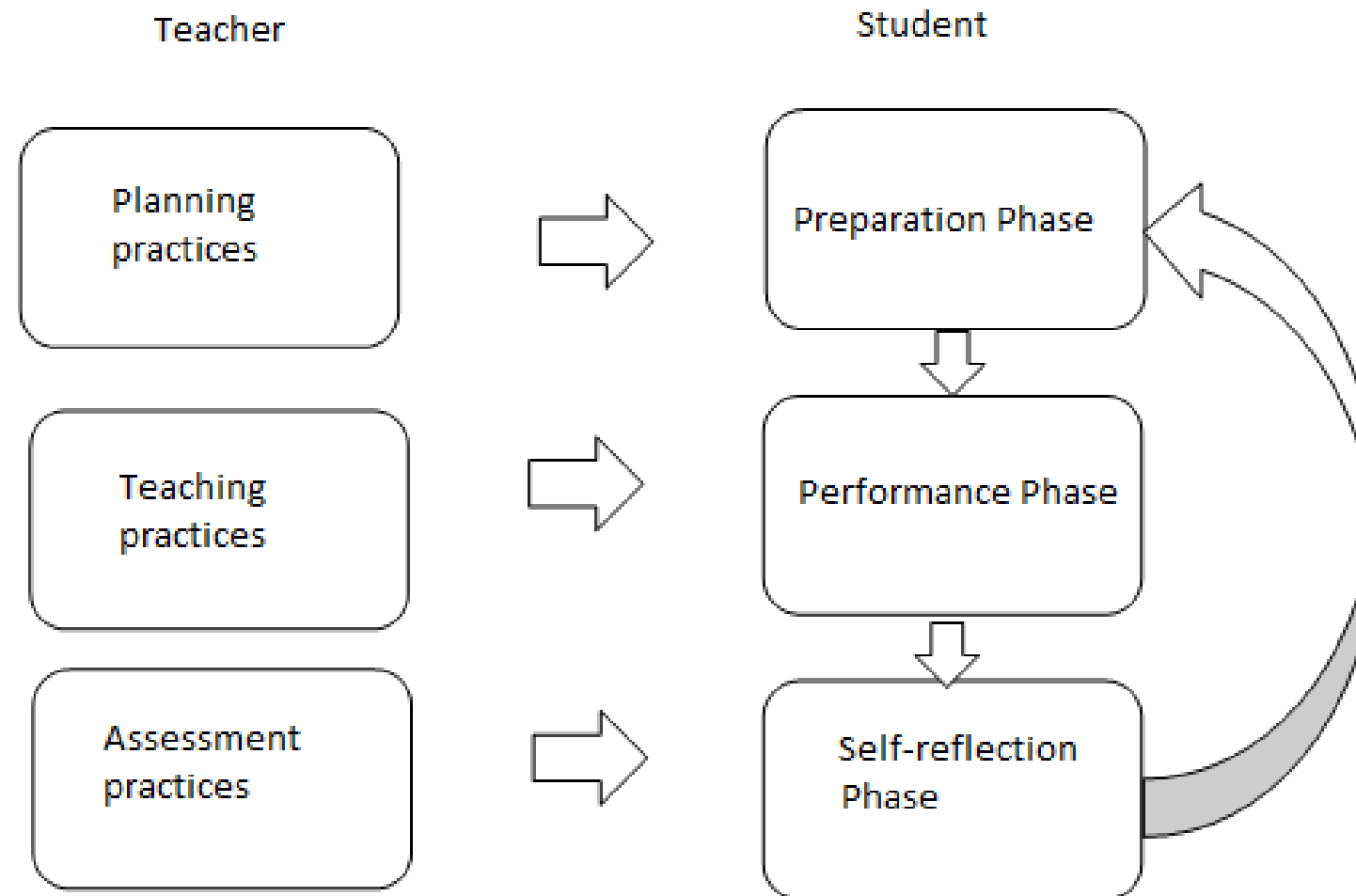   2. Oral reinforcement of practices and qualified evaluation of practices (Perry, Hutchinson & Thauberger, 2008).

1. Indirect:
    1. Think aloud protocols (Pintrich, Wolters & Baxter, 2000; Torrano y González, 2004).
    2. Study journals/diary (Daura, 2010; Inan & Yüskel, 2010; Perry, Hutchinson & Thauberger, 2008).
    3. Process and metacognitive questions (Perry, Hutchinson & Thauberger, 2008).

Assessment Practices:
1. Authentic Assessment (Ling Lau, 2013; Palm, 2008).
2. Formative Assessment (Clark, 2012).
3. Generic competences assessment (Villarroel y Bruna, 2014).
4. Guidelines and rubrics (Nicol & Macfarlane-Dick, 2006; Reddy & Andrade, 2010).
5. Learning Self-Assessment (Nicol & Macfarlane-Dick, 2006; Nicol, 2010).
6. Feedback of Learning (Nicol & Macfarlane-Dick, 2006).

Model of teaching practices to promote self-regulation of learning

DEPENDENT VARIABLE

Knowledge Questionnaire on the Promotion of Self-Regulation of Learning (Dignath- Van Ewijk & Van der Werf, 2012)	• 8 items, which make up a dimension • Alpha 0.80
Teacher Self-Efficacy Questionnaire (Tschannen- Moran & Woolfolk, 2001).	• 12 items, grouped in 3 dimensions (Classroom Management, Involving the Student and Instructional Strategies). • Alpha of 0.87, 0.77, 0.75 and 0.73.
Practice Questionnaire for the Promotion of Self-Regulation of Learning (Kistner, et al. 2010).	• 12 items grouped in 1 dimension • Alpha of 0.85.
Inventory of Learning Self-Regulation Processes(Rosario, et al., 2007)	• 12 items distributed in one dimension • Alpha 0.80

RESULTS: KNOWLEDGE ABOUT THE PROMOTION OF SF
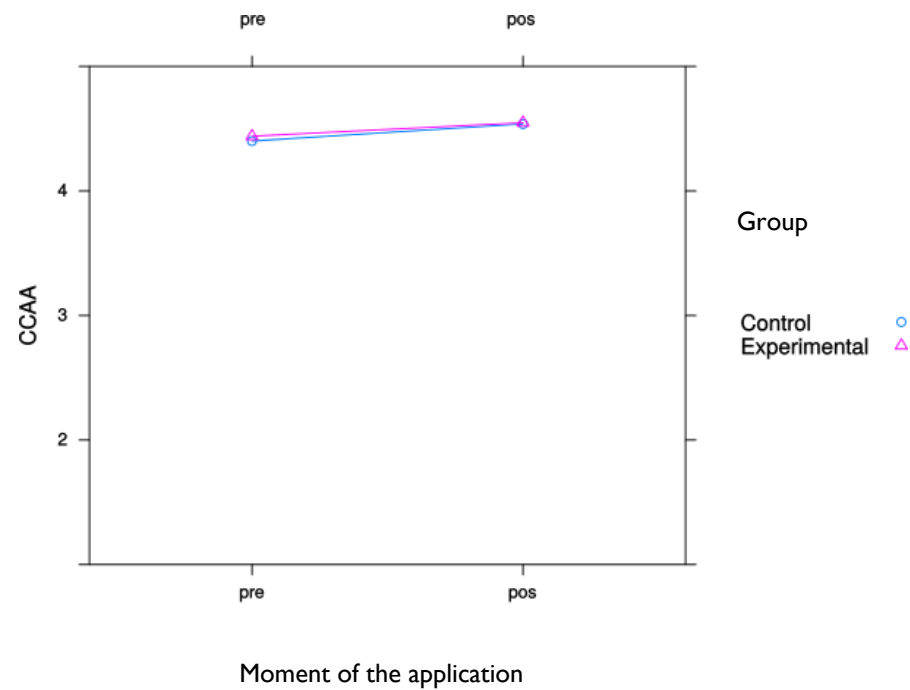
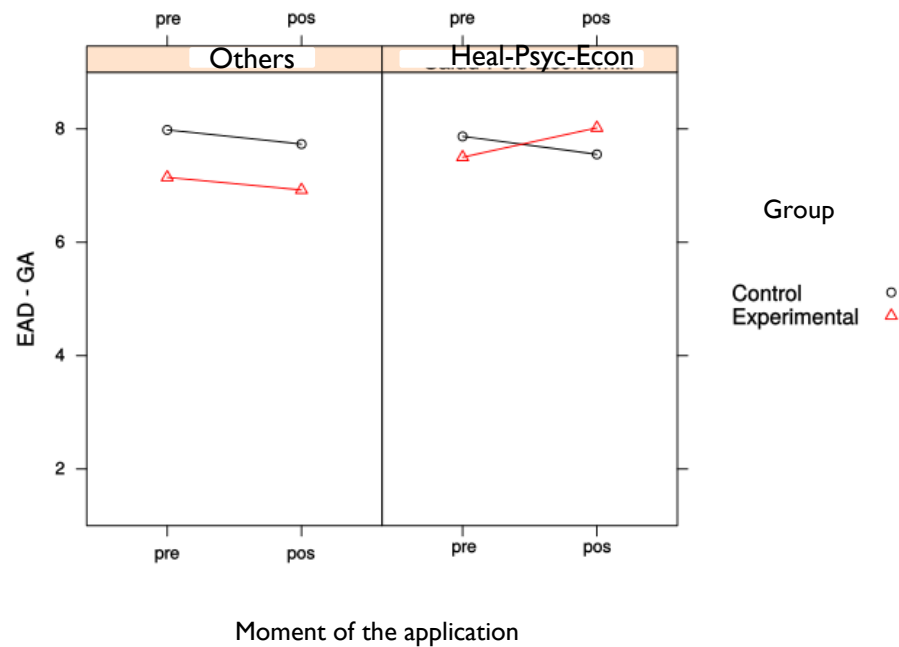| Time	Group	M	IC 95%
Pre test	Control	4.40	[4.19, 4.61]
Post test	Control	4.54	[4.30, 4.76]
Pre test	Experimental	4.44	[4.18, 4.70]
Post test	Experimental	4.55	[4.25, 4.84]

RESULTS: TEACHER SELF-EFFICACY
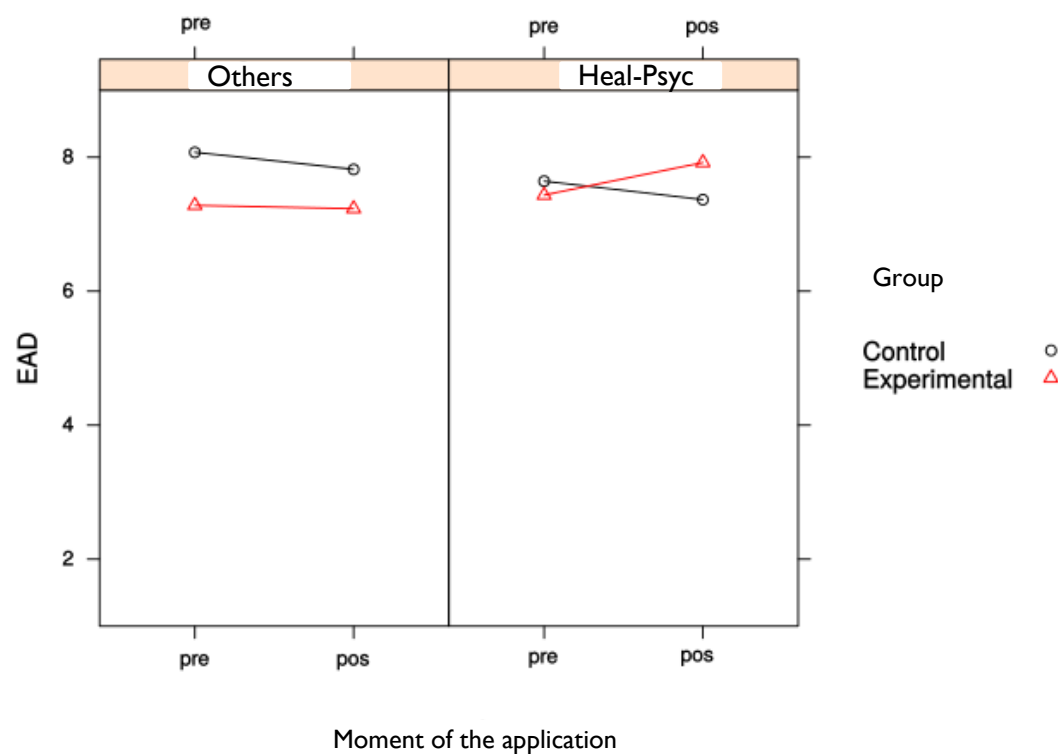
Time	Groupo	M	IC 95%
Other faculties			
Pre test	Control	8.07	[7.40, 8.75]
Post test	Control	7.81	[7.12, 8.51]
Pre test	Experimental	7.28	[6.55, 8.01]
Post test	Experimental	7.23	[6.61, 8.67]
Health Sciences & Psychology			
Pre test	Control	7.64	[6.62, 8.67]
Post test	Control	7.37	[6.31, 8.42]
Pre test	Experimental	7.43	[6.24, 8.62]
Post test	Experimental	7.92	[6.71, 9.13]

EFFICIENCY TO MANAGE THE CLASSROOM

Time	Group	M	IC 95%
Other faculties			
Pre test	Control	7.98	[7.08, 8.89]
Post test	Control	7.73	[6.81, 8.66]
Pre test	Experimental	7.28	[5.79, 8.50]
Post test	Experimental	6.93	[5.50, 8.35]
Health Sciences, Psychology and Economy & Business			
Pre test	Control	7.87	[5.27, 10.50]
Post test	Control	7.55	[4.25, 10.68]
Pre test	Experimental	7.50	[3.67, 11.32]
Post test	Experimental	8.02	[3.96, 12.06]

EFFICACY TO ENGAGE THE STUDENT IN LEARNING
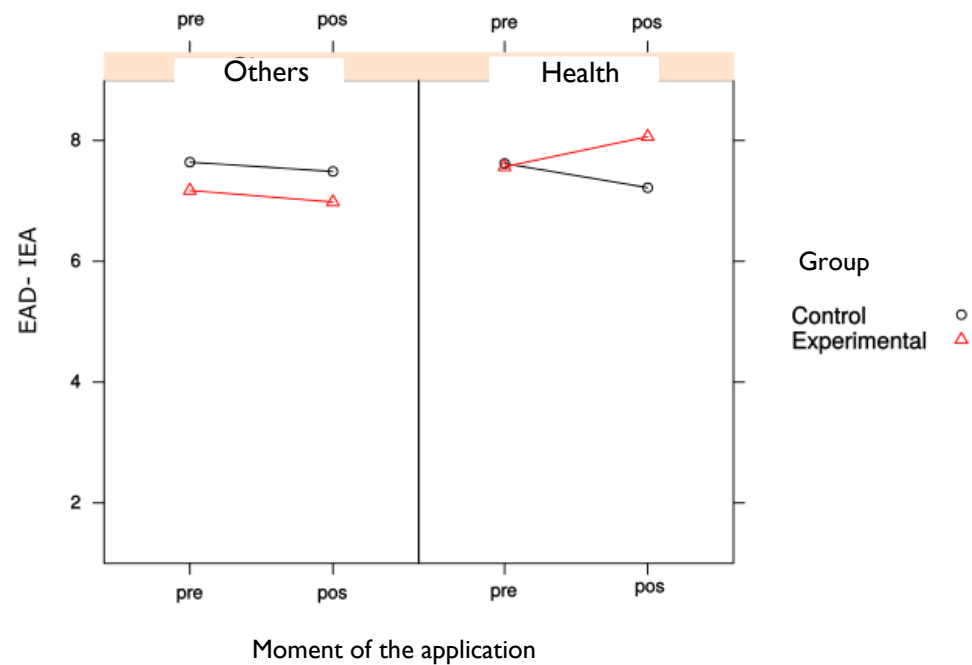
Time	Group	M	IC 95%
Other Faculties			
Pre test	Control	7.64	[6.92, 8.36]
Post test	Control	7.45	[6.77, 8.24]
Pre test	Experimental	7.17	[6.14, 8.21]
Post test	Experimental	6.98	[5.94, 8.02]
Health Sciences			
Pre test	Control	7.62	[5.79, 9.45]
Post test	Control	7.22	[5.35, 9.09]
Pre test	Experimental	7.56	[3.80, 11.33]
Post test	Experimental	8.06	[4.26, 11.87]

EFFICACY FOR INSTRUCTIONAL STRATEGIES
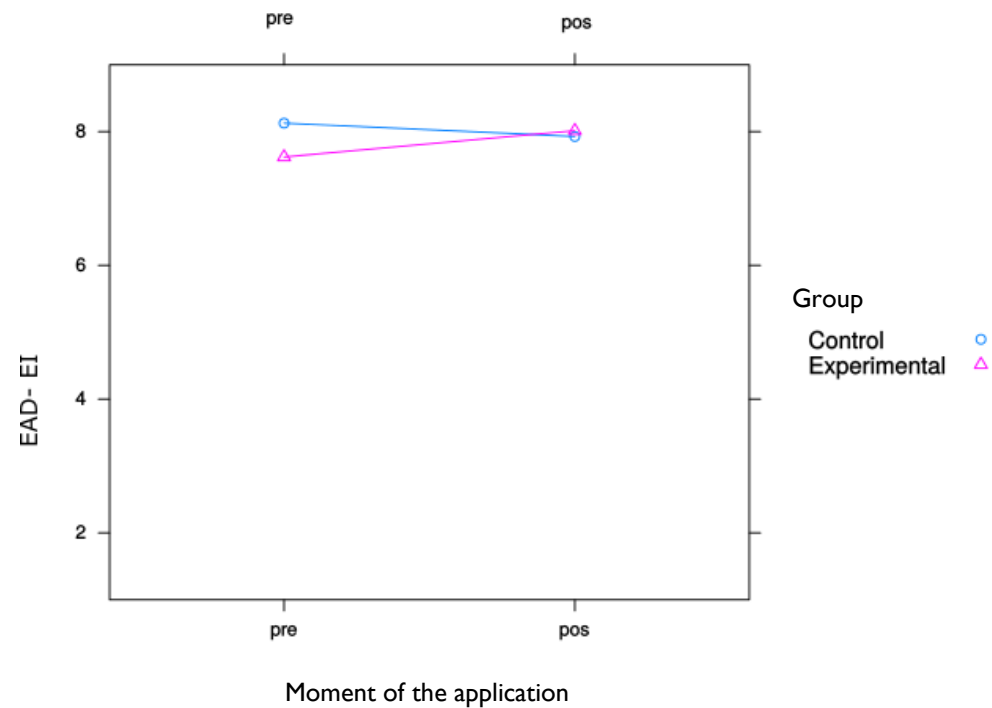
Time	Group	M	IC 95%
Pre test	Control	8.13	[7.54, 8.71]
Post test	Control	7.93	[7.32, 8.53]
Pre test	Experimental	7.62	[6.95, 8.29]
Post test	Experimental	8.01	[7.26, 8.77]

AUTORREGULACIÓN DEL APRENDIZAJE
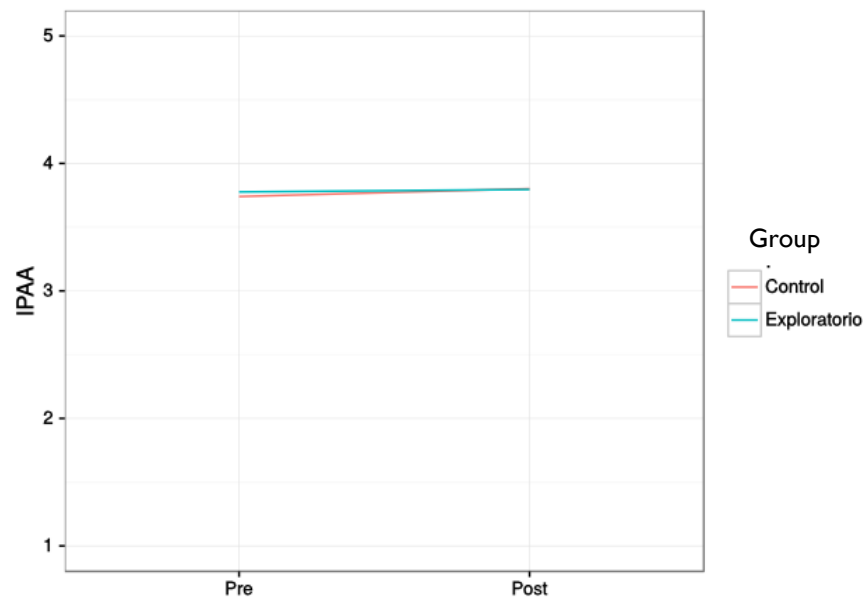
Moment of the application

Time	Group	M	IC 95%
Pre test	Control	3.74	[3.62, 3.86]
Post test	Control	3.80	[3.67, 3.93]
Pre test	Experimental	3.78	[3.64, 3.92]
Post test	Experimental	3.79	[3.63, 3.96]

TEACHER TRAINING FOR THE FACILITATION OF LEARNING SELF-REGULATION SKILLS

The teachers are intervened, then they intervene in the classroom, and later the students develop sessions in the application 4PLANNING.

| 2018 | → | Design of teacher training and evaluation of its application through a **pre-experimental design**. Objective: To evaluate the perception of teachers and improve the intervention. |
| 2019 | → | Quasi-experimental design, with a control and experimental group and pre and post test evaluations. |
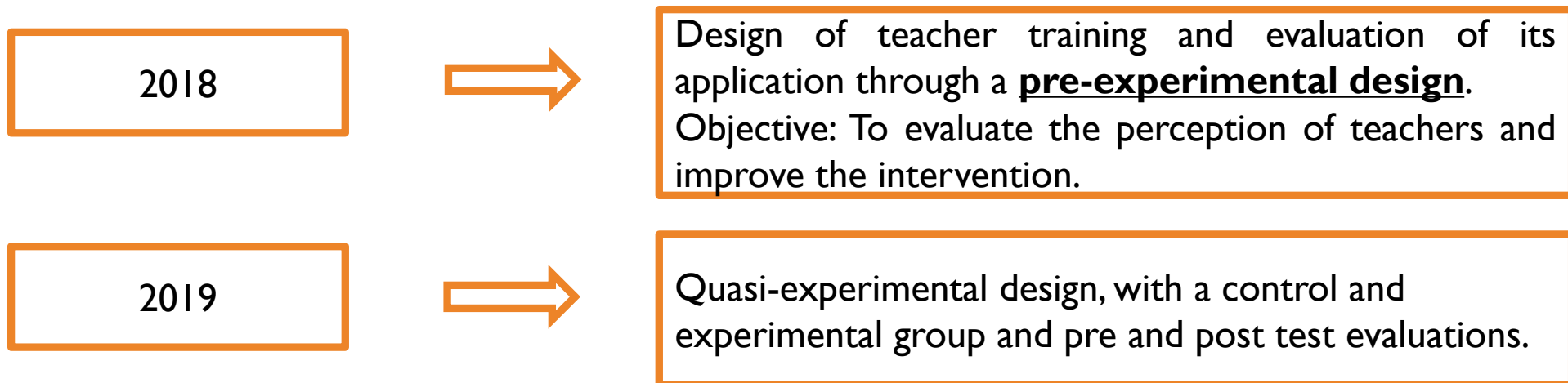
PARTICIPANT UNIVERSITIES

CHARACTERISTICS OF THE INDEPENDENT VARIABLE

✓ ***Semi-face to face course***, with the support of a platform, designed for this purpose.

✓ ***16 chronological hours***.

✓ Certified by the University of Concepción.

✓ ***9 sessions***, in which the ***topics to be developed in the APP*** are worked: self-regulation of learning, teacher messages, 4PLANNING app, study purposes and goals, time planning, prioritization of academic tasks, planning of group and individual study .. Behaviors basic to take advantage of the class.

✓ Expected ***learning outcomes*** at the level of teachers and their students.

✓ ***Active methodology***, with reflection and practical activities.

✓ Teachers understand the ***app***, its construction and also the ***teaching platform.***

✓ ***Platform support***, which allows you to check which students have entered the app, the level of progress per session and per activity, unblock sessions and interact with students, through individual and / or group likes and messages.

✓ ***Development of transfer skills,*** for teachers to carry out 9 motivational sessions in the classroom.

CLASSROOM INTERVENTION

✓ ***Teacher-student interaction:*** Link between teacher training and the use of the app by students.

✓ ***9 interventions,*** 10-15 minutes to encourage the use of the app.

✓ Motivational and activation ***goal-objective.***

✓ ***Pedagogical Sequence:*** activate, reflect, transfer.

✓ ***Support manual*** for teachers.

4 PLANNING: MOBILE APP

9 sessions
Pedagogical sequence: See (Video), Read (Infographic), Do (Activities), Commitment to action.

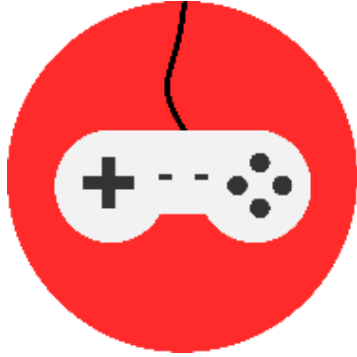**Self-regulation of Willingness to Study**

Establishment of Academic Objectives

Academic Time Management

Organization of Material and Environmental Resources

4PLANNIG: Didactic strategies

Gamming

Didactic strategy, seeks to emulate the motivation that users perceive when interacting with a game (analog or digital). an environment is designed, where tasks are transformed into rewarding challenges.

↓

Level = Achievement + Emblem + Points
Collections
Content unlocks
Leaderboards
Social charts

Transmedia

Transmedia narrative is a type of story in which a story or information is displayed through multiple media and communication platforms.

↓

Desktop / App interface
Websites
Social platforms
Web tools
Instagram
Facebook

Communication tone

The tone determines the character of the action and refers to how what is intended to be expressed to the target audience is to be communicated

↓

Language
Texts
Videos, images and memes of own authorship
Infographics
Animations

RESULTS IN STUDENTS

Pre & Post Differences - Experimental group test

Variables	t	p	$M_{pre-test}$	$M_{post-test}$	d
1.1 Workload	2,16	<,05 [*]	4,13	4,27	0,10
1.2 Goals & objectives	3,42	<,01 [**]	5,39	5,58	0,17
2. Self-efficacy for willingness to study	2,32	<,01 [**]	4,97	5,10	0,14
3. Willingness to study practices	2,15	<,01 [**]	4,64	4,77	0,12

Pre & Post Differences- Control group test

Variables	t	p	$M_{pre-test}$	$M_{post-test}$	d
1.1 Workload	1,46	>,05	3,82	4,01	N/A
1.2 Goals & objectives	0,40	>,05	5,56	5,60	N/A
2. Self-efficacy for willingness to study	-1,74	>,05	4,93	5,08	N/A
3. Willingness to study practices	-0,37	>,05	4,63	4,66	N/A

TEACHING PRACTICES AND THEIR IMPACT ON THE SELF-REGULATION OF UNIVERSITY STUDENTS LEARNING

Phases:

1. Revalidation of the training program. Systematic review to update practices and interviews with the teachers participating in the first study.

2. Spoken thinking instrument design.

3. Piloting intervention.

4. Intervention application.

5. Application of practices in the classroom / teacher support.

6. Impact assessment

LEARNINGS

✓ Contribution to the study of variables related to the teaching-learning process, through the adaptation and validation of instruments for the Chilean population.

✓ Creation of programs that allows replication in other contexts. They have shown effects on teachers and students.

✓ There is a lack of greater control of variables that allow the empirical explanation of the differences between faculties and universities.

✓ What do teachers do in the classroom? Improve variables associated with the fidelity of the treatment.

✓ Need to use instruments that allow evaluating SL as a process.

✓ Improve the use of technologies, analytics, functionality and digital skills.

✓ Interventions with institutional support.

✓ Promote the involvement of students.