

# SELF-REGULATION OF EMOTIONS AND FEELINGS: TOWARDS A MORE COMPLETE EVALUATION OF PRE-SERVICE PRIMARY TEACHER TRAINING IN SCIENCE EDUCATION

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International Conference  
**NEW PERSPECTIVES  
in SCIENCE EDUCATION**



Is our teacher  
training program  
implementation  
effective?

What evidence  
do we have to  
know it?

# PROGRAM EVALUATION BASED ON

Hunches and  
Perceptions

Not a valid  
indicator

Standardized  
opinion  
surveys

Vaguely worded  
items,  
unaccounted-for  
confounding factors  
& social desirability  
bias

It is  
needed

A more systematic evaluation to  
triangulate qualitative and  
quantitative results

# OUR EVALUATION PROPOSAL

Aspects evaluated	Instruments
Evolution in didactic conceptions	Questionnaire
	Activity (students productions)
	Semi-structure Interviews (individual interviews for students)
	Daily classroom forums (students 'journals)
Scientific knowledge acquired	Misconceptions questionnaire
	Exams
Degree of satisfaction & opinions	Opinion surveys
	Anonymous forum to assess the subject

# OUR EVALUATION PROPOSAL

Aspects evaluated	Instruments
	Questionnaire Activity (students productions)
Emotions experienced by the students	Emotions Questionnaire
Perceptions about scientific and pedagogical knowledge acquired	KPSI
Degree of satisfaction & opinions	Opinion surveys Anonymous forum to assess the subject

# TWO SELF-REGULATION QUESTIONNAIRES

Knowledge &  
Prior Study  
Inventory (KPSI)

Self-assesment to  
be aware of what  
studentts have  
learnt

Emotions  
questionnaire

Self-reflection  
and self-  
regulation of  
emotions

# WHY EMOTIONS IN PRE-SERVICE PRIMARY TEACHERS TRAINING?

**Effective  
decision  
maker in class**

**Emotionally  
competent**

**To be aware of  
the emotions  
experienced when  
learning science**



# OBJECTIVES

## General

Obtain an effective tool to evaluate emotions

## Secondary

Verifying the functionality of the tool measuring the feelings and emotions

Check if there are significant differences for being in key moments of the course development



# DESIGN

## Design

Semi-open questionnaire anonymously answered

Items were a selection of emotions from the thesis of Borrachero (2015)

More understandable and clearly different

Avoiding overlapping

Excluding those with nonsense to be asked (such love or anger)

# LIST OF EMOTIONS

## Negative Emotions

Shame

Dissatisfaction

Boredom

Insecurity

Rejection

## Positive Emotions

Concentration

Interest

Confidence

Satisfaction

# METHODOLOGY

## Sample

255 Students

Pre-service Primary teachers from the University of Almería

Selected by non-probabilistic sampling procedure of convenience, based on class assistance



## Frequency

Not regular intervals

Key moments of the course



November  
1<sup>st</sup> IBSE  
Secuence

December  
Midterm  
exam

March  
2<sup>nd</sup> IBSE  
Secuence  
(reflection)

Jun  
3<sup>th</sup> IBSE  
Secuence

<http://bit.ly/1U0cBkM>

# METHODOLOGY

**Sample**

255 Students

Pre-service Primary teachers from the University



Answers were compared based of the moment when they were answered and the emotions selected

**Frequency**

Not regular intervals



Key moments of the course

November

December

March

Jun

1<sup>st</sup> IBSE  
Secuence

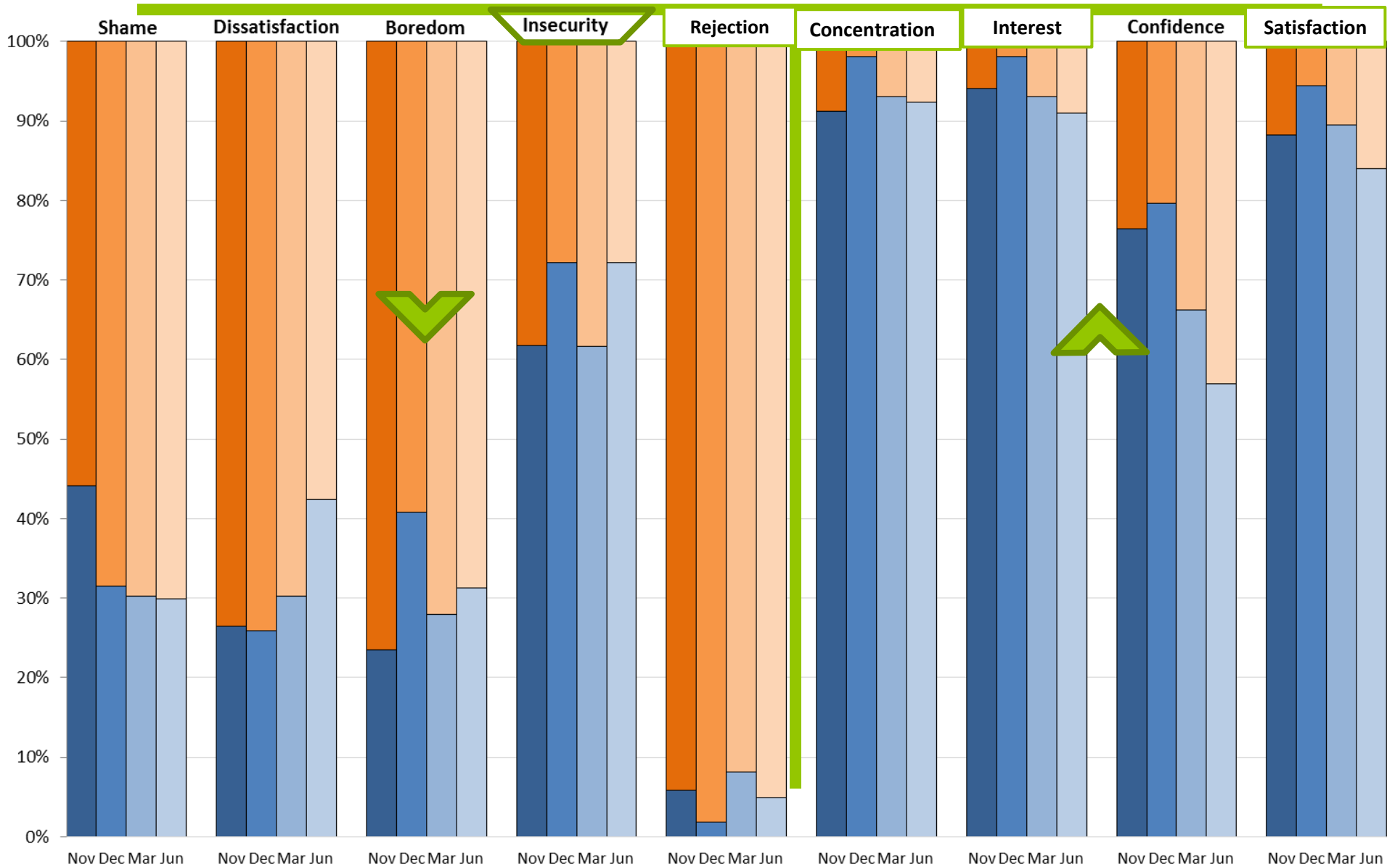
Midterm  
exam

2<sup>nd</sup> IBSE  
Secuence  
(reflection)

3<sup>th</sup> IBSE  
Secuence

<http://bit.ly/1U0cBkM>

# DATA ANALYSIS



# IS SIGNIFICANT THE VARIATION ALONG THE YEAR?

Emotion	Significance (Sig)
Rejection	,162
Insecurity	,302
Boredom	,280
Dissatisfaction	,082
Shame	,492

Emotion	Significance (Sig)
Concentration	,300
Interest	,250
Confidence	,445
Satisfaction	,374

Contrast the hypothesis about the equality of more than two proportions of independent samples with nominal's variables

Analyzed by means of an ANOVA using the Chi Square test

**Results**  
**>0,05**

# CONCLUSIONS

## A systematic evaluation

Related to the objectives of the course

Considering feelings and emotions lived

## Highlight

3 Positive Emotions: Concentration, interest and satisfaction, with more than 85% of students agreement for feeling along the year

1 Negative Emotion: Rejection, with more than 85% of students agreement for not feeling along the year

Not statistically significant

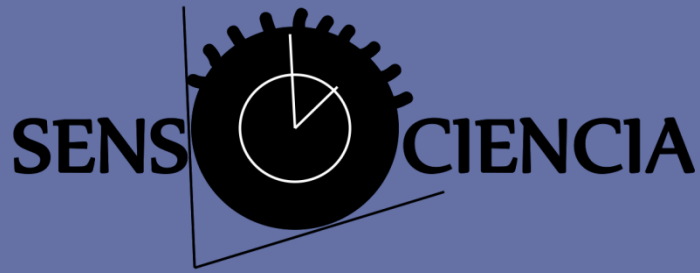
## Relevant variation

May be related to the effectiveness of the questionnaire

Takes general students' emotions and feelings, even those related to the teacher

Under Review

The new version will ask directly for the emotions lived on each key moment of the IBSE process



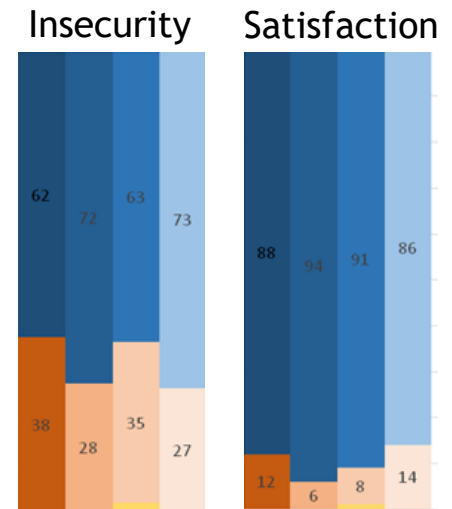
# SPECIAL GREETINGS TO

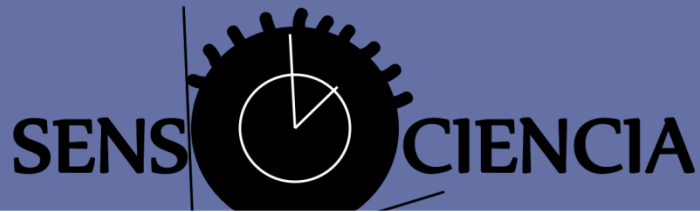
Students are involved in scientifically oriented questions and formulate explanations based on argumentation and evidence collection improving their motivation



SensoCiencia means:

- ⊙ Science with Sense
- ⊙ Science with Sensors
- ⊙ Science with Sensations

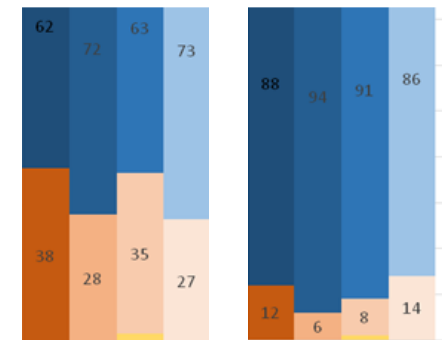




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Science with Sensations



THANK YOU FOR YOUR  
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Sensociencia Project (I-58/2015)