

SAFE FALLS, SAFE SCHOOLS

Teaching children how to fall during PE lessons
Results of an experimental application



Dr. Óscar del Castillo Andrés¹, Dra. María del Carmen Campos Mesa¹, María Teresa Toronjo Urquiza², Dr. Luis Toronjo Hornillo³, Dr. Luis Toronjo Urquiza⁴

1 Lecturer, University of Sevilla. 2 EJU, Education Scientific Commission. 3 Guest lecturer, University of Sevilla. 4 University of Sheffield.



- Falls are a real global public health problem
- The WHO considers that children in school age are a population at risk



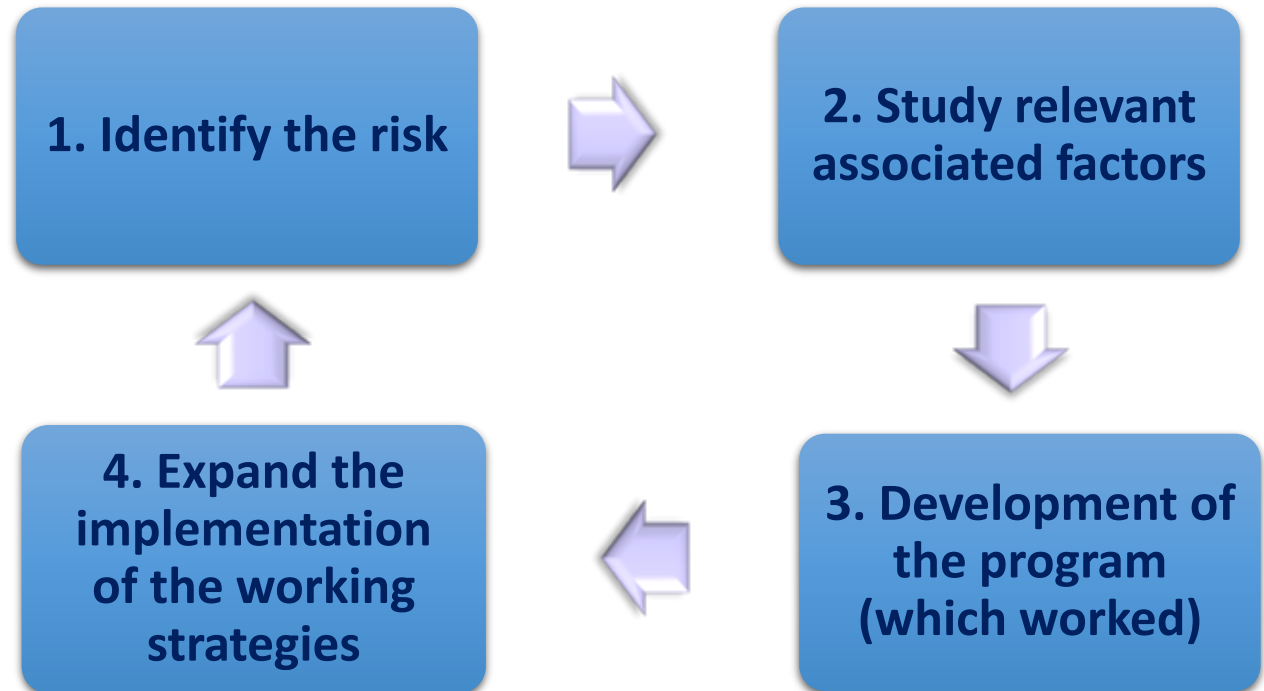
Background

"Preventive strategies should emphasize on education, training, creating safer environments and should prioritize research related to falls and establishing effective policies to reduce risks"

(WHO report, January 2018)



Modelo seguido



Code of good scientific practice of the Ethics Committee of the CSIC

Code of Ethics for the US teachign and research staff

ETHICAL APPROVAL

- Research program
- Confidentiality agreement
- Participant information sheet
- Informed consent
- Research protocol



USE AND PROTECTION OF PERSONAL DATA

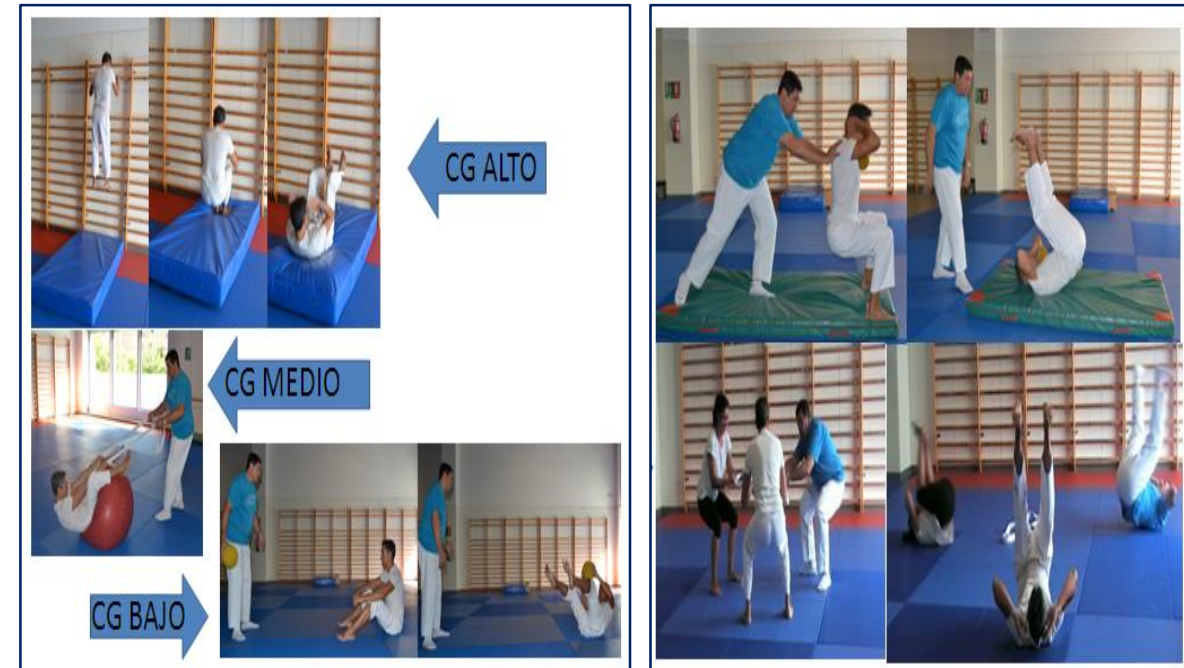
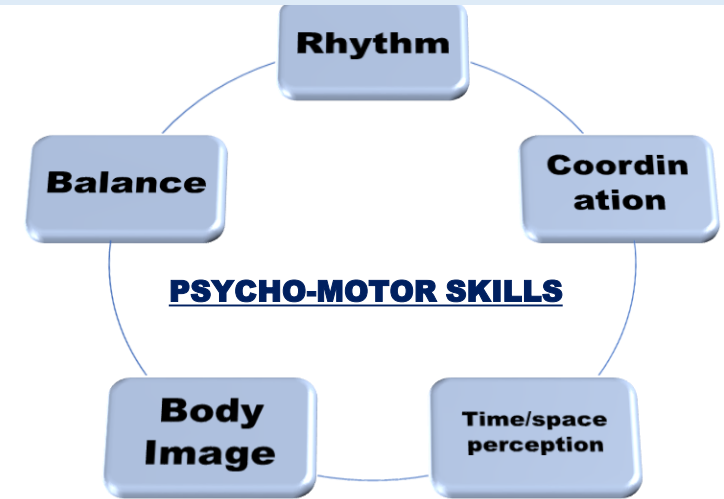
Procedure and design of the CSES[©] program

Context

Tools

Mechanical analysis

Teaching levels





CEIP Jacarandá

Seville, Spain



Primary Education GROUP A	Primary Education GROUP B	Primary Education GROUP C	STUDENTS PER YEAR
1º, 25 students Boys 16 / Girls 09	1º, 26 students Boys 13 / Girls 13	1º, 25 students Boys 13 / Girls 12	76 students Boys 42 / Girls 34
2º, 26 students Boys 11 / Girls 15	2º, 26 students Boys 11 / Girls 15	2º, 26 students Boys 13 / Girls 13	78 students Boys 35 / Girls 43
3º, 26 students Boys 11 / Girls 15	3º, 25 students Boys 12 / Girls 13	3º, 25 students Boys 11 / Girls 14	76 students Boys 34 / Girls 42
4º, 26 students Boys 13 / Girls 13	4º, 27 students Boys 13 / Girls 14	4º, 24 students Boys 13 / Girls 11	77 students Boys 39 / Girls 38
5º, 25 students Boys 14 / Girls 11	5º, 25 students Boys 12 / Girls 13	5º, 25 students Boys 15 / Girls 10	75 students Boys 41 / Girls 34
6º, 26 students Boys 11 / Girls 15	6º, 25 students Boys 10 / Girls 15	6º, 26 students Boys 11 / Girls 15	77 students Boys 32 / Girls 45
TOTAL NUMBER OF STUDENTS, BOYS AND GIRLS			459 students Boys 223 / Girls 236



48,60%



51,40%



IMPLEMENTATION ANALYSIS

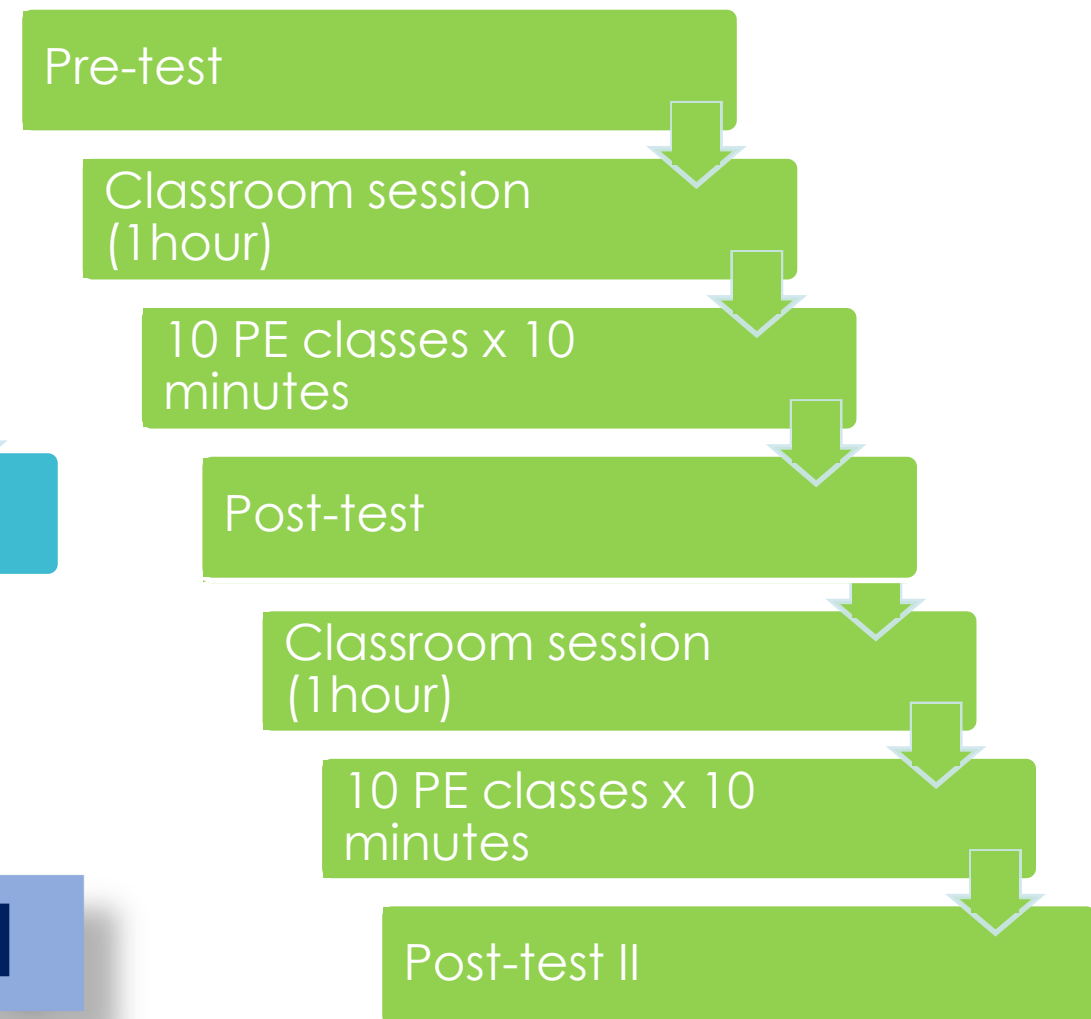
- ✓ Presentation and to the Management Team – request for approval
- ✓ Meetings with
 - Director of Studies and Director of the PE Section
 - Teachers
 - Parents' association
- ✓ Informed consent
 - To project participation and to the use of images
- ✓ Development of the schedules for different levels and groups
- ✓ Direct work in classroom sessions
- ✓ Remote support to teachers
- ✓ Reporting of results to the Centre and the parents' association

**Duration
6 weeks**

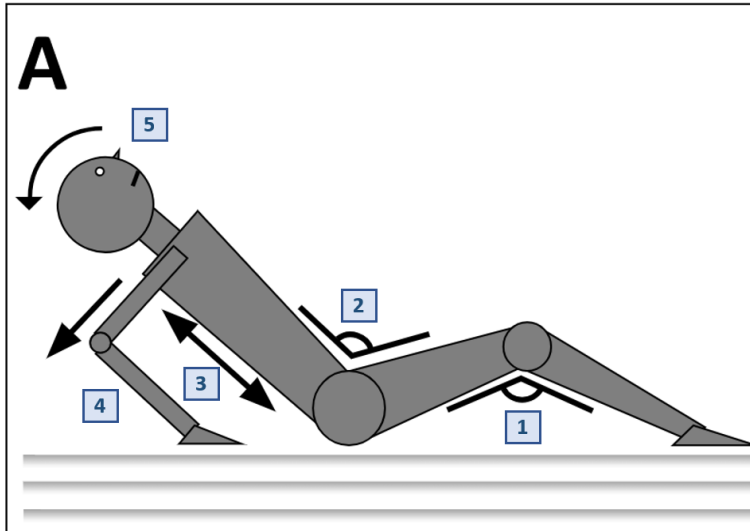
Intervention



Control

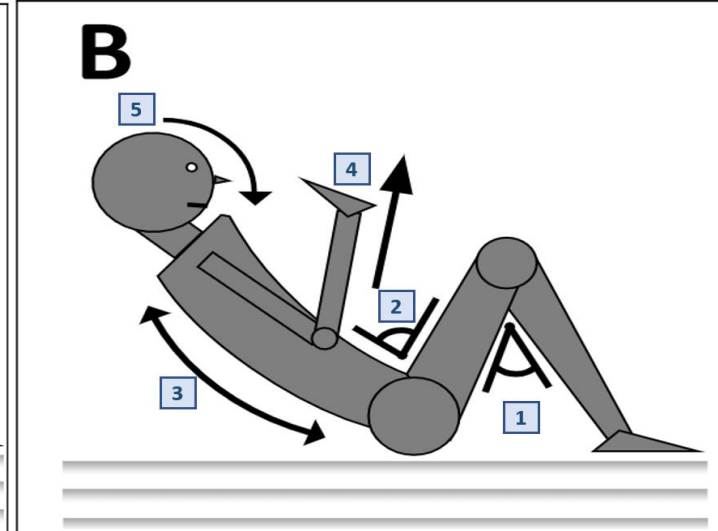


Injuries or accidents < 1



Kappa index

Neck variable	0,95
Hands variable	0,99
Trunk variable	0,93
Hips variable	0,87
Knees variable	0,88

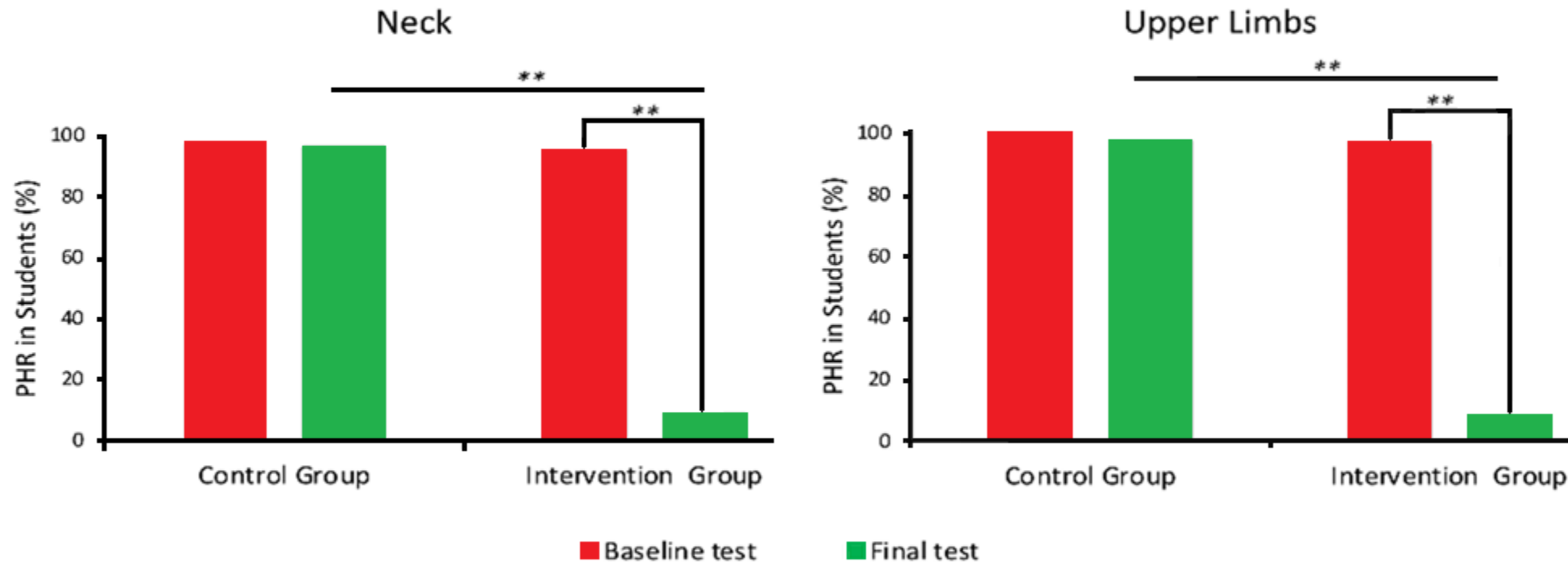


Valor de k

Consistency of
agreement

< 0.20	Poor
0.21 – 0.40	Low
0.41 – 0.60	Moderate
0.61 – 0.80	Good
0.81 – 1.00	Very good

Comparison of variables regarding the response to an unexpected backward fall



These results are consistent with the frequency of the most common injuries that occur to the head, and upper limbs *

*Gelfman et al. (2005), Jiménez et al. (2017), Esparza and Mintegi (2016), González et al. (2014), Guzmán, Manjón and Fernández (2014) and Soriano (2008).

CONCLUSIONS

- It is possible to develop a program based on the learning of falling techniques to be implemented in school Physical Education sessions.
- It could educate motor responses in minors, appropriate to increase safety and protection against a fall backwards.

Limitations

- **It is necessary to verify the transfer of acquired motor responses to contexts other than those used in the research.**
- **Increase sample size and age range.**
- **The lack of references on the teaching of falls in target populations limits the discussion of the results of the CSES[©] program, with respect to other interventions.**

Final thoughts

- **The CSES[©] is oriented to offer a response to the WHO's proposals regarding research and implementation of educational programs related to falls, for children in school age (a risk population).**
- **This program offers an innovative tool to complement existing programs, which meet the limit of "preventive intervention" to address the problem caused by falls in the target population.**

Prospects

- **Expand the CSES[©] program by including fall exercises in other directions.**
- **To study the effect of the CSES[©] program in different sports activities.**
- **To carry out longitudinal studies that determine the persistence of the learned gestures.**
- **To determine the rate of injuries and severity, produced by falls in the participants.**
- **To analyze the transference in a different situation to the context of the program.**

hola@judoks.com

Síguenos en



Thank you for you attention

For further information, you can get in touch
with us through

hola@judoks.com

María Teresa Toronjo Urquiza

**Dr. Óscar del Castillo Andrés, Dra. María del Carmen Campos Mesa,
Dr. Luis Toronjo Hornillo, Dr. Luis Toronjo Urquiza**

