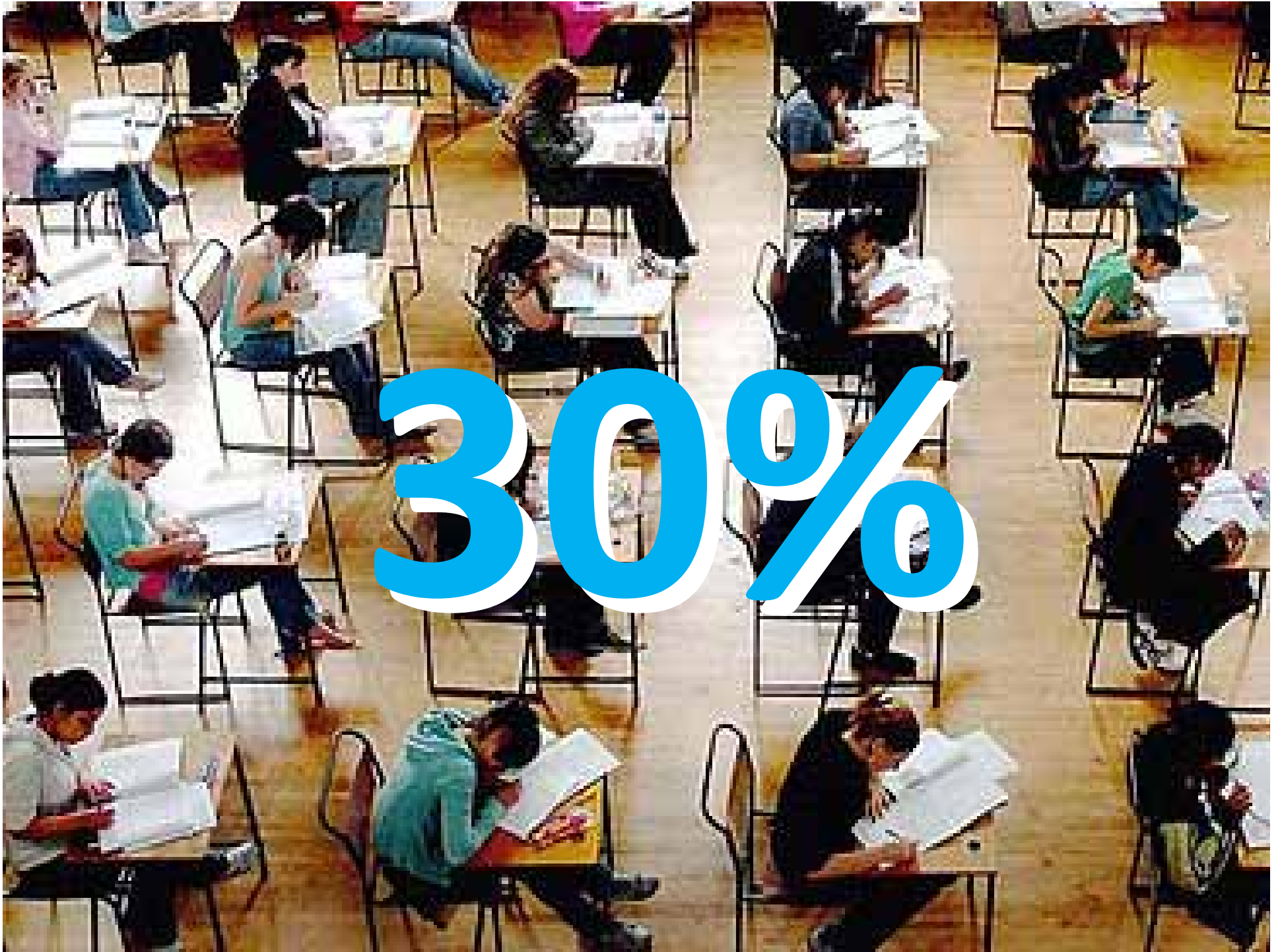


Presence, Immersion and Cybersickness Assessment through a Test Anxiety Virtual Environment

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INTRODUCTION



I'm gonna need
a bigger brain.

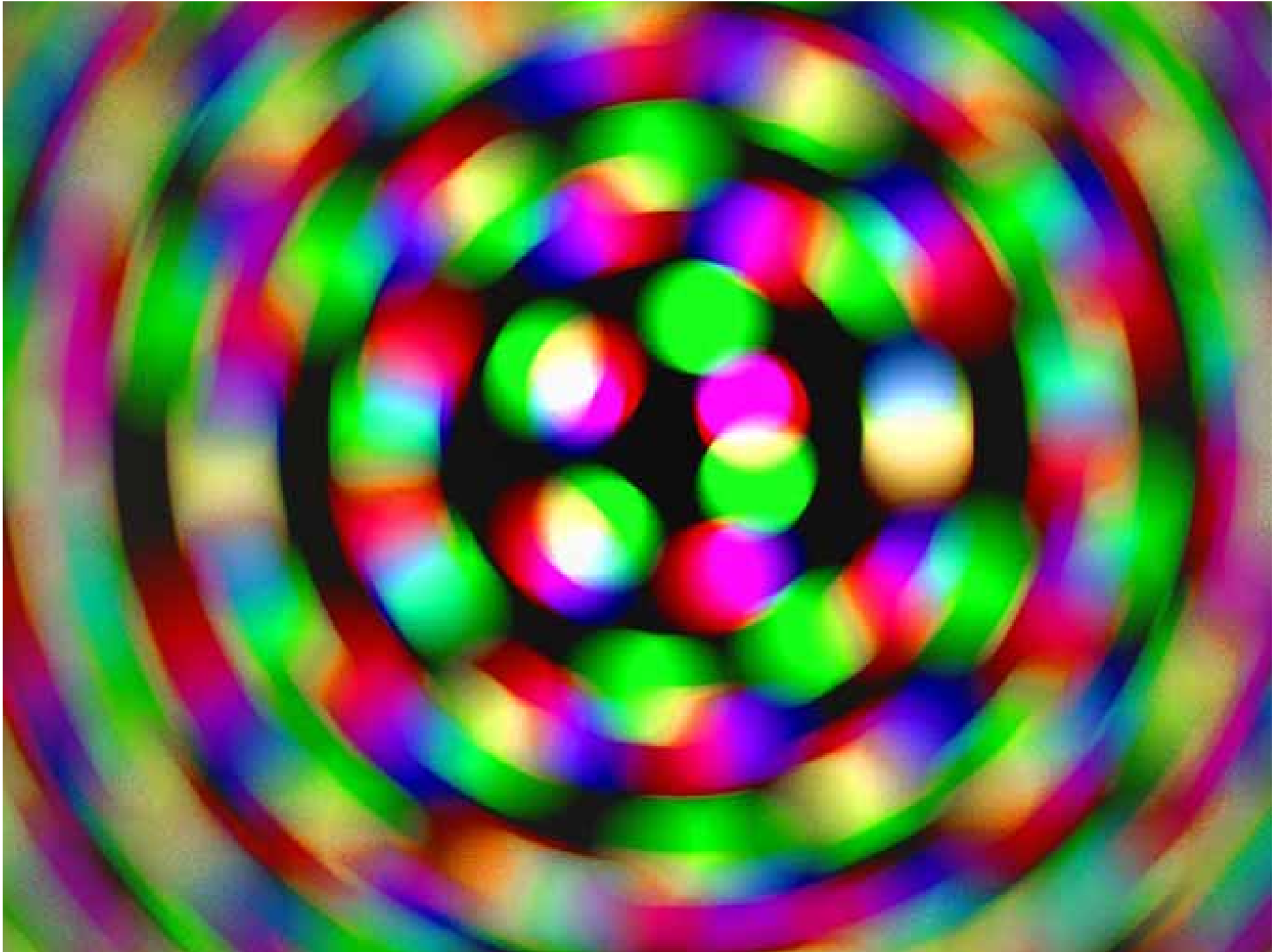


I'm gonna need a HMD









METHOD

Sample

- Non-clinical sample
- 46 undergraduate students
- 12 men (M = 22.5; SD = 2.96 years)
- 34 women (M = 23.21; SD = 5.61 years).

Assessment (i)

Immersion, presence and cybersickness:

- The Immersive Tendencies Questionnaire – ITQ-F (Bouchard, Robillard & Renaud, 2002);
- The Presence Questionnaire – PQ-F (Bouchard et al., 2002);
- The Simulator Sickness Questionnaire SSQ-F (Robillard et al., 2003).

Assessment (ii)

Test anxiety :

- Reactions to Tests Questionnaire – RT (Sarason, 1984).

Anxiety :

- State and Trait Anxiety Inventory – STAI-Y (Spielberger, Gorsuch, Lushene, Vagg & Jacobs, 1983).

GSR and BPM:

- AcqKnowledge from Biopac Systems

Set-up









Exercício de Avaliação

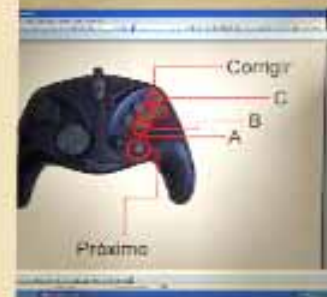


Responda às questões abaixo, assinalando apenas uma das opções.
O teste é constituído por 20 questões. Para mudar de página pressione a seta no fundo da página.

1. Que peças artísticas compõem uma pinacoteca?
 - A. Quadros
 - B. Partituras musicais

2. O que significa o nome do jornal russo "Pravda"?
 - A. Povo
 - B. Verdade
 - C. Liberdade

3. Qual o único número primo que é par?
 - A. 0
 - B. 2
 - C. 3



RESULTS & DISCUSSION

Comparative average and standard deviation scores for Presence, Immersion and Cybersickness.

Studies Clinical Samples

Presence

M=102.70(9.70)

Immersion

M=68.10(11.30)

Cybersickness

M=26.10(17.70)

This Study

Presence

M=76.20(14.36)

Immersion

M=67.05(13.16)

Cybersickness

M=32.43(10.42)

Studies Non Clinical Samples

Presence

M=93.70(11.12)

Immersion

M=57.70(11.00)

Cybersickness

M=16.70(17.00)

Differences between gender for Test ,Trait and State Anxiety,.

Male

Test Anxiety

M=2.00(0.42)

Trait Anxiety

M=33.50(8.51)

State Anxiety

M=33.16(8.31)

Female

Test Anxiety

M=2.03(0.56)

Trait Anxiety

M=39.41(8.51)

State Anxiety

M=33.47(10.11)

Differences between gender for Presence, Immersion and Cybersickness.

Male

Presence
M=84.50(15.65)

Immersion
M=67.45(15.61)

Cybersickness
M=28.18(6.64)

$p < .05$

$p < .001$

Female

Presence
M=72.75(12.50)

Immersion
M=66.90(12.50)

Cybersickness
M=33.84(11.13)

Differences between gender for Test Anxiety, Presence, Immersion, Cybersickness and Psychophysiological activation.

	Male		Female	
Test Anxiety	Irrelevant Thinking M=2.50(0.82)	$p < .01$	I. Thinking M=1.84(0.63)	
	Tension M=1.93(0.58)	$p < .05$	Tension M=2.38(0.70)	
Presence	Realism M=32.16(7.03)	$p < .05$	Realism M=26.34(6.48)	
	Affordance to act M=18.66(4.77)	$p < .01$	A. to act M=14.83(3.60)	
	Self assessment performance M=18.83(3.54)	$p < .01$	Self assess perf. M=8.20(2.48)	
Immersion	Emotions M=11.09(3.86)	$p < .05$	Emotions M=15.36(4.37)	
	Games M=10.27(3.72)	$p < .05$	Games M=7.06(2.57)	
	BPM M=72.39(9.90)	$p < .01$	BPM M=83.87(11.00)	Physiology

Effect of Computer Experience groups in Psychophysiological activation.

None

Basic

Intermediate

Specialist

BPM

M=91.10(0.00)

BPM

M=87.55(7.91)

BPM

M=76.43(12.48)

BPM

M=71.58(8.67)

p < .01

Effect of Playing Computer Games on Virtual Reality variables.

Never

Occasionally

Frequently

Everytime

Presence
M=71.21(13.23)

Presence
M=74.47(18.49)

Presence
M=84.09(13.69)

Presence
M=85.00(0.00)

Immersion
M=58.46(10.61)

Immersion
M=69.41(11.67)

Immersion
M=75.00(13.40)

Immersion
M=68.00(0.00)

$p < .01$

Cybersickness

M=35.13(10.92)

Cybersickness
M=31.41(11.04)

Cybersickness
M=31.27(8.95)

Cybersickness
M=22.00(0.00)

FINAL CONSIDERATIONS

Immersion & presence:

Women

Man

Physiology:

PC Exp.

No PC Exp.

Immersion & presence:

No Play

Hardcore players

FUTURE WORK

- Clinical populations
- Assess the relevance of playing videogames
- Understand better the causes of cybersickness



Effect of Playing Computer Games in Immersion.

Never

Occasionally

Frequently

Every time

Focus

M=22.56(3.32)

Focus

M=25.35(3.89)

Focus

M=26.09(4.70)

Focus

M=24.00(0.00)

Involvement

M=17.82(4.61)

Involvement

M=21.12(4.62)

Involvement

M=22.55(5.07)

Involvement

M=22.00(0.00)

Emotions

M=12.77(3.80)

Emotions

M=15.41(4.43)

Emotions

M=15.09(5.50)

Emotions

M=13.00(0.00)

Games

M=6.00(2.37)

Games

M=7.52(2.50)

Games

M=11.27(2.76)

Games

M=10.00(0.00)

$p < .001$

