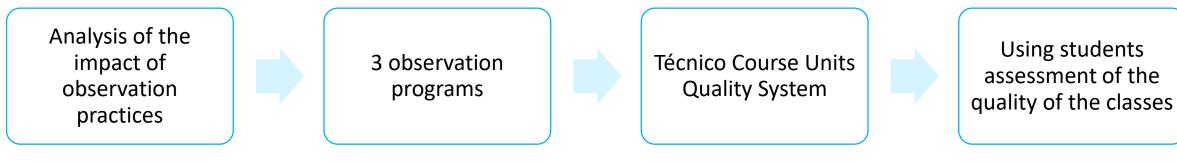


4th International Conference of the Portuguese Society for Engineering Education 21–23 June 2021 IST-Lisbon, Portugal

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Introduction

- Objective promote and improve the teaching skills of teachers, promoting their professional development.
- Observation of classes as a process (Reis, 2011):
 - of professional interaction
 - of essential formative nature
 - centered on individual and of teachers
 - to improve the quality of teaching and learning





Classes Observation Process

Before

- Contact teacher and schedule the observation
- Share the observation grid with the teacher

During

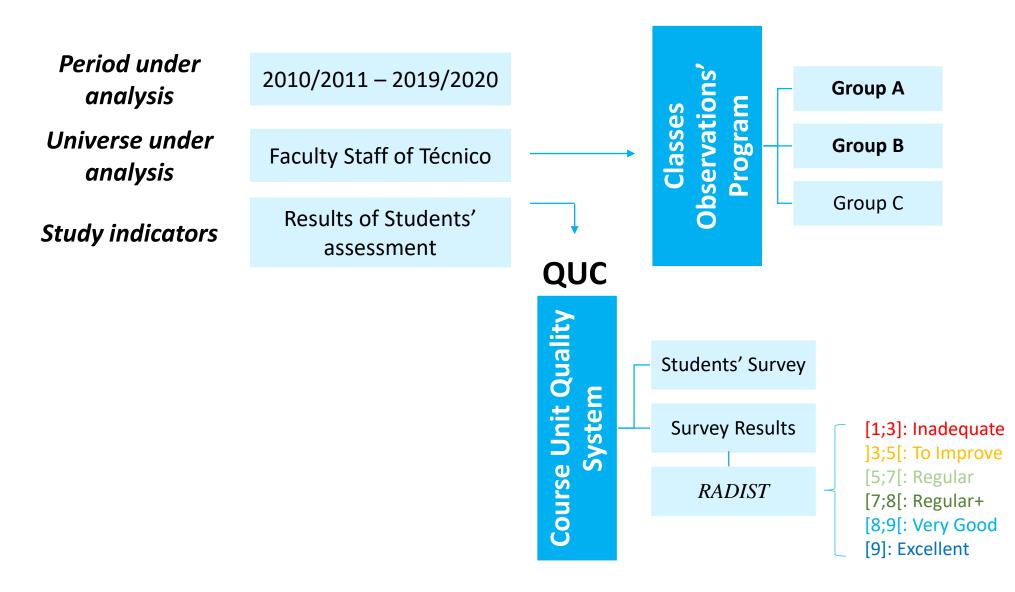
- Record all observations on the grid
- 5 main areas: class organization; presentation; content; practical activities and classroom climate.

After

- Feedback meeting with the teacher (the identification of situations that can be improved or maintained, etc)
- Share the filled observation grid with the teacher



Methodology





Evaluated Faculty Staff

• Evaluated by QUC system...

705	2010/2011
743	2011/2012
767	2012/2013
759	2013/2014
761	2014/2015
760	2015/2016
778	2016/2017
783	2017/2018
800	2018/2019
799	2019/2020

2 ... by Sex

26% Female74% Male

B ... by Age Group

2010/2011	5,5%	17,3%		33,9%	0		32,2%		11,1%	
2011/2012	5,5%	17,4%		32,7%			33,1%		11,3%	
2012/2013	4,3% <mark></mark>	17,2%		33,0%		31,8%			13,6% 0,1	
2013/2014	5 , 0%	15,4%		32,1%		3	2,5%		14,9%	
2014/2015	5,1%	14,6%	2	28,9%		36,	4%		14,8%	1
2015/2016	4,9% <mark></mark>	12,9%	29	9,2%		37,5	5%		15,5%	
2016/2017	5,7%	11,7%	25,6	5%		36,8%		18,	,1% 2 <mark>,</mark> 2	!%
2017/2018	3,4 <mark>%</mark> 9	,7%	24,3%		35	,5%		20,4%	6,6%	
2018/2019	3,3 <mark>%</mark> 9	,5%	22,4%		32,3%	,)	23,	4%	9,3%	
2019/2020	1, <mark>6<mark>7,1</mark>9</mark>	<mark>%</mark> 2.	2,8%		32,3%		21,9%		14,3%	
	20	-29 🔳 3	30-39	40-49	50-59	6 0 o	r more	With	out info	J.

4 ... by Professional Category

2010/2011	90,2%	5,0% <mark>4,8</mark> %
2011/2012	91,5%	8,5%
2012/2013	92,6%	7,4%
2013/2014	86,3%	13,7%
2014/2015	85,3%	14,7%
2015/2016	87,6%	12,4%
2016/2017	86,8%	13,2%
2017/2018	83,4%	16,6%
2018/2019	1,1% 82,5%	16,3%
2019/2020	99,1%	16,8%

Researchers Professors Others Without info

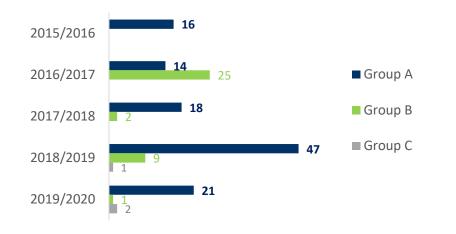
4.① ... by 'Professor' Category

2010/2011	24,7% 1,1%	57,9%	4,9% 10,7% 0,8% ■ Associate	
2011/2012	22,1% 0,9%	60,9%	4,7% 10,6% 0,9% Professor	
2012/2013	20,1% 1,1%	55,1%	12,4% 10,6% 0,7% Invited Asso	ciate
2013/2014	22,3% 1,1%	59,8%	6,0% 10,1% 0,8%	
2014/2015	24,3% 0,6%	56,2%	6,6% 11,7% 0,5% Professor	
2015/2016	24,5% 1,1%	55,3%	8,1% 10,8% 0,3% ■ Invited Assis	stent
2016/2017	25,0% 1,0%	52,9%	9,6% 11,4% Professor	
2017/2018	26,3 % 0,9%	52,5%	■ Full Professo	Dr
2018/2019	27,3% 0,8%	50,8%	8,8% 12,0% 0,5% □ Invited Full	
2019/2020	27,7% 1,5%	49,1%	9,4% 12,0% 0,3% Professor	



Observed Faculty Staff

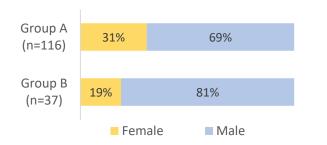
• Evaluated by the QUC system and observed under the different programs



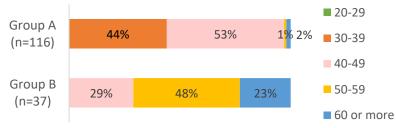
Group A: more teachers observed over the years under analysis, summing up 116.

Group B: less teachers observed over the years but mostly in the first year of the classes' observation program, summing up 37.

2 ... by Sex

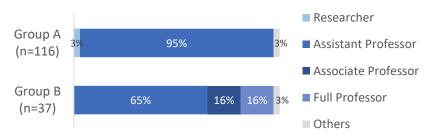


• ... by Age Group



Group A: average 40 years old Group B: average 57 years old

4 ... by Professional Category



+ Assistant Professors



+ Male Teachers

Teachers' Pedagogical Performance - *Global*

•	[1;3]]3;5[[5;7[■ [7;8[[8;9[9
2010/2011 2 <mark>,0% 16,6%</mark>	40	,4%		38,3%	2,69
2011/2012 1, <mark>2% 15,1%</mark>	33,0%			47,4%	3,4%
2012/2013 1, <mark>2% 16,3%</mark>	29,2%			49,7%	3,7%
2013/2014 1 <mark>,7</mark> % 13,2%	32,1%			48,5%	4,2%
2014/2015 2 <mark>,2% 13,4%</mark>	32,7%			45,7%	5,8%
2015/2016 1, <mark>3% 13,9%</mark>	31,6%			47,8%	5,4%
2016/2017 2 <mark>,1% 13,8%</mark>	26,7%		49,:	1%	8,2%
2017/2018 1 <mark>,8</mark> % 11,9%	27,8%		49,0	%	9,3%
2018/2019 1, <mark>4% 9,3%</mark>	24,9%		53,4%		11,0%
2019/2020 1, <mark>0%9,4%</mark>	22,0%		56,1%		11,4%

1. Growing trend [*] of "very good" and "excellent" teachers over the years.

Teachers "to improve" always less than 2%.

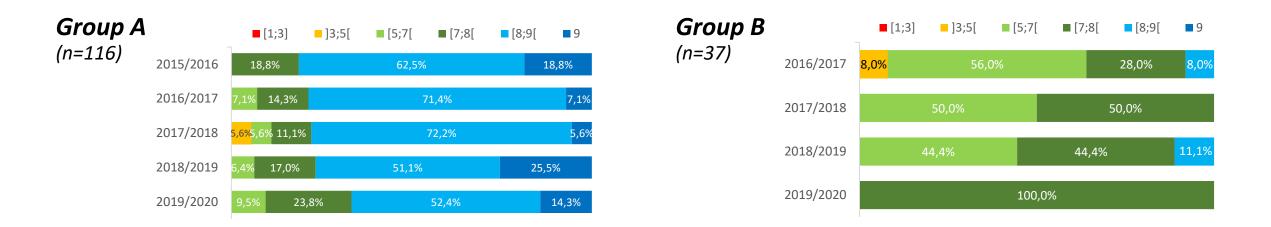
Inadequate results almost unexistent.

[*] Trend of very good and excellent teachers is similar, but sometimes oscilating. On average, in the last 10 years:

- by sex: 6.2% "excellent" and 51.1% "very good" female teachers and 6.6% "excellent" and 47.5% "very good" male teachers.
- by age group: Teachers with 20 to 39 years old have more "excellent" results than others (15.4%). Teachers with 40+ years old have more "regular/regular+" results (24%).
- 4. by 'Professor' category: Assistant & Associate Professors have 47% of "very good" and 4.7% "excellent" results.



Teachers' Pedagogical Performance – Observed



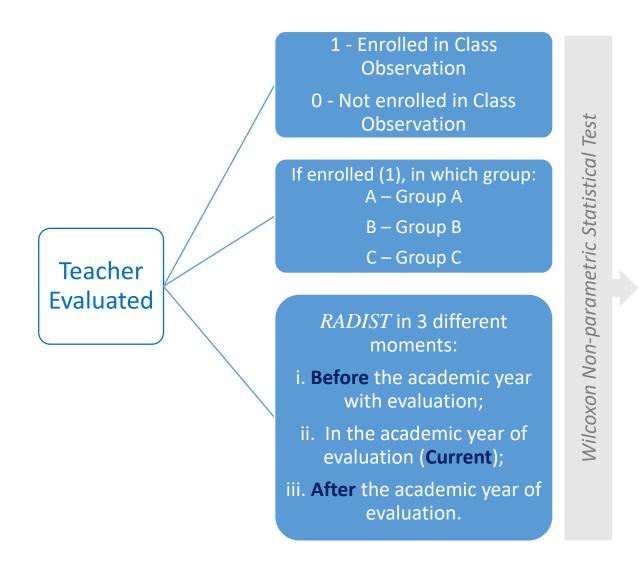


- Are there any differences in the RADIST classification between the different evaluation moments?

- Is there any effect of the 'Class Observation' factor on the pedagogical performance of teachers? If so, does the group in which they were observed have any impact on this effect? "



Impact of the Classes Observation Process



Between two different moments (i and ii; ii and iii; i and iii):

Diferences between the teaching performance over time.

Enrolled/not in Class Observation:

'**Observed**': Differences between the teaching performance in the "Before" (i) and "Current" (ii) moments; and "Before" (i) and "After" (iii) moments.

'Not Observed': no differences.

Minimal Differences... What now?

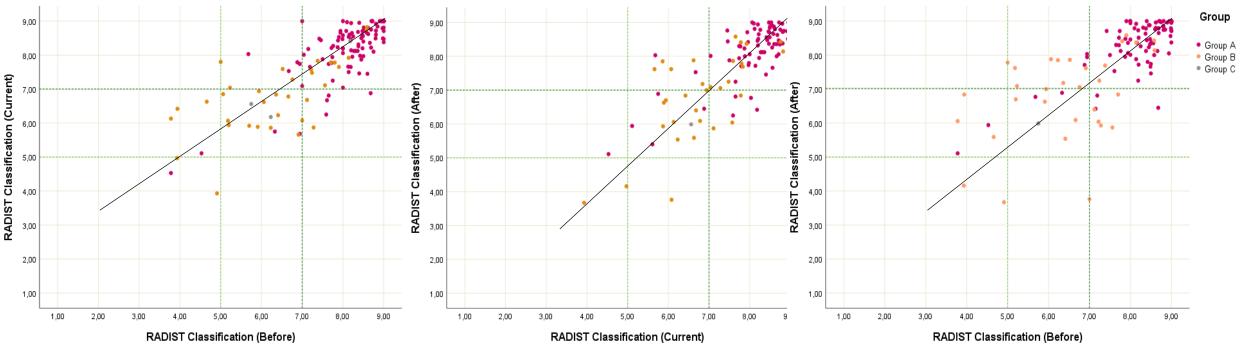




Impact of the Classes Observation Process

Wilcoxon Nonparametric Test Is there any differences between teachers' pedagogical performance within the same group?

Group A: Better results in the **'After'** moment, comparing to the 'Before' moment. **Group B: Better** results in the **'Current'** moment, comparing to the 'Before' moment.





Conclusions/Final remarks

- There are differences between the pedagogical performance of teachers over the years;
- Statistical evidence supporting that the pedagogical performance is better, the moment

after the observation;

Class observations are seen, by the teachers, as an appropriate means to promote the

quality of teaching and the pedagogical development.

"Excellent teachers are not born, they're made"











Thank you for your attention.

For more information please refer to:

https://nda.tecnico.ulisboa.pt/en/

https://quc.tecnico.ulisboa.pt/en/