

The use of ICT in school management and its influence on the teaching-learning activity

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The International Conference on Learning
University of Barcelona, Spain from 1 to 4 July
2009

The Implementation of the Internet in the Spanish Education System

Identify the teachers' pedagogical and professional uses of ICT

Reinforcing teamwork and participation proceedings in the institutions

Analyse the students' use of ICT

Identify how ICT may contribute to the improvement of educational practices

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graph LR; PS([Project Scope]) --> T1[Identify the teachers' pedagogical and professional uses of ICT]; PS --> T2[Reinforcing teamwork and participation proceedings in the institutions]; PS --> T3[Analyse the students' use of ICT]; PS --> T4[Identify how ICT may contribute to the improvement of educational practices];
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Project Scope

Objective

To analyze the use of ICT in administrative activities in primary and high schools in Spain

Methods: project

- Empirical research using face-to-face questionnaires
Heads, Teachers, Students
- Representative Sample of 17.575 subjects (heads, teachers and students) of 809 centres
- Field Work: March - September 2007

Project web page:

http://www.uoc.edu/in3/integracion_internet_educacion_escolar

Methods: Heads' questionnaire

Three Face-face questionnaires were applied: Heads, Teachers, Students

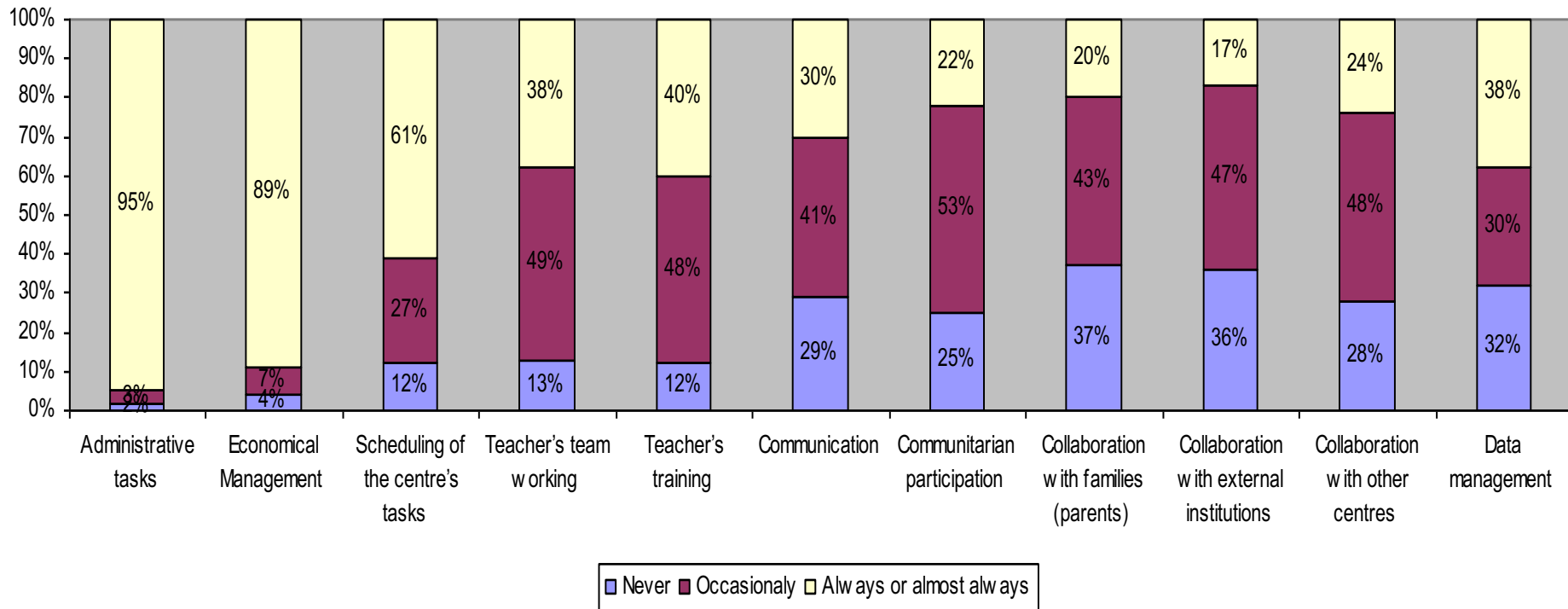
Heads' questionnaire

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- A. Personal data
 - B. Knowledge and experience on use of ICT
 - C. Use of ICT out of the centre
 - D. ...
 - E. ...
 - F. ...
 - G. ...
 - H. ...
 - I. ...
 - J. ...
 - K. ...
 - L. Centre's use of ICT in the administrative tasks
 - M. ...

1. Administrative tasks
2. Economical Management
3. Scheduling of the centre's tasks
4. Teacher's team working
5. Teacher's training
6. Communication
7. Communitarian participation
8. Collaboration with families (parents)
9. Collaboration with external institutions
10. Collaboration with other centres
11. Data management

General view

Graphic 1. Type of use of ICT among administrative staff



Methods: variables

1. Dependent variable

- a. Factor construction based on the 11 items
- b. Groups: Low use: $< 1 \text{ SD}$; Middle use: $\Rightarrow 1 \text{ SD} \leq 1 \text{ SD}$; High use: $> 1 \text{ SD}$

2. Independent variables

Organizational variables

Centre type
Centre size
City size
Degree of ICT development

individual variables

Head' age
Head' gender
Length of Use of Internet
Internet training during the last three years

Results

The final factor analysis (L3, L4, L5, L6, L7, L8, L9, L10) explained 60,2% of variability and Cronbach's Alpha=0.906

Categorical Variable

Low use = 107 (16%)

Middle use = 446 (67%)

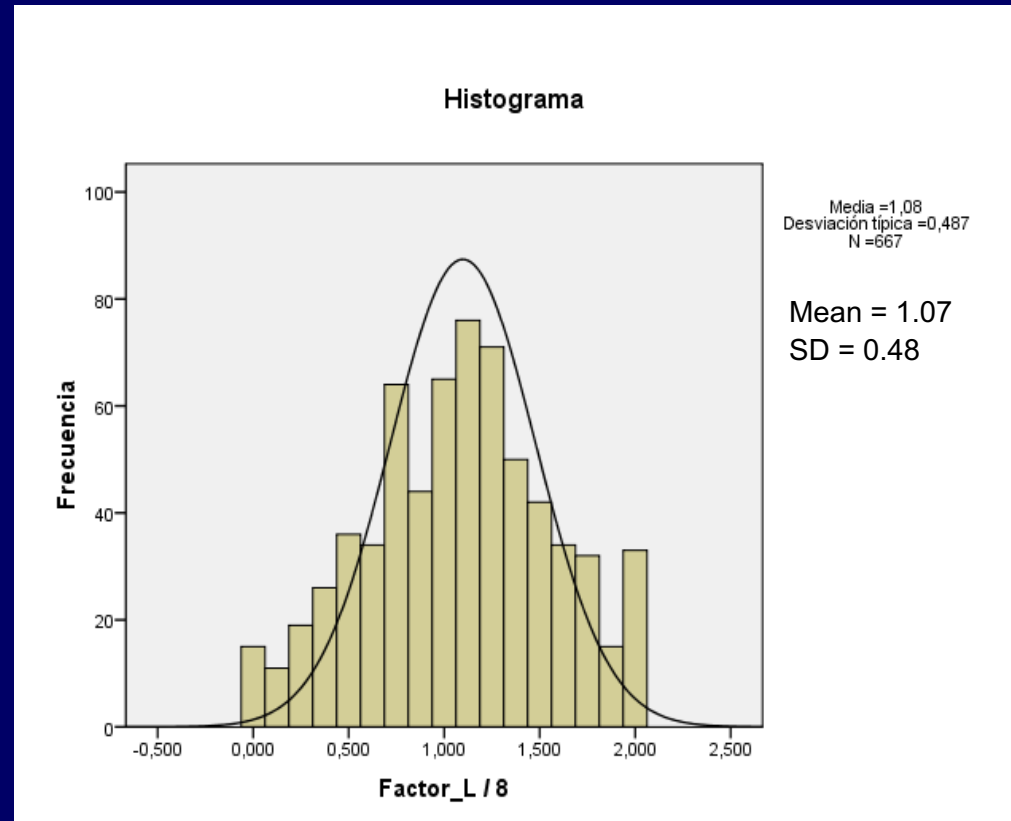
High use = 114 (17%)

Total = 667 (100%)

Categorical: low use: < 1 SD

middle use: => 1 SD <= 1 SD

high use: > 1 SD



Methods: statistical analyses

Bivariate analysis according with the type of variables

CROSS-TABLES (factor -the 3 groups vs. Independent variables)

- a. Pearson Chi square test ($p \leq 0.05$)
- b. Cramer's V test (0-1 distribution)
- c. Adjusted and normalized residuals (± 1.9 are considered as a significant magnitude)

Results

Table 2. Use of ICT by type of centre

Type of centre	Low use	Middle use	High use
Public (primary) (n=336)	17%	62%	21%
	RES= 1.1	RES= -3.1	RES= 2.8
Public (high school) (n=130)	12%	76%	11%
	RES= -1.3	RES= 2.5	RES= -1.9
Private (n=117)	16%	71%	13%
	RES= -1	RES= 1.3	RES= -1.5

Chi 2 Pearson, $p = 0.02$; Cramer's $V = 0,099$

RES=residuals

Results

Table 3. Use of ICT by city size

City Size (people)	Low use	Middle use	High use
<10.000 (n=156)	21%	56%	23%
	RES = 1.7	RES = -3.2	RES = 2.3
10.001-50.000 (n=180)	16%	67%	17%
	RES = 0	RES = 0	RES = 0.1
50.001-100.000 (n=69)	22%	59%	19%
	RES = 1.4	RES = -1.4	RES = 0.4
100.001-500.000 (n=181)	12%	73%	11%
	RES = 1.7	RES = 3.5	RES = -2.8
>500.001 (n=81)	11%	70%	18%
	RES = -1.3	RES= 0.7	RES= 0.4

Chi 2 Pearson, $p = 0.008$, V Cramer $p=0$, 124

RES=residuals

Results

Table 4. Use of ICT by degree of ICT development

	Low use	Middle Use	High use
Poor development of ICT (n=155)	16%	69%	15%
	RES= 0.2	RES= 0.5	RES= -0.8
Good perspectives in the use of ICT (n=305)	14%	71%	15%
	RES= -1.0	RES= 1.8	RES= -1.2
Initiating the use of ICT (n=97)	24%	68%	8%
	RES= 2.4	RES= 0.2	RES= -2.5
Positive attitude toward the ICT and its use (n=89)	11%	52%	37%
	RES= -1.2	RES= -3.4	RES= 5.4

21 centres were missed in this variable (3.1% of the sample)

Chi 2 Pearson, p Value < 0.001 V Cramer= 0,167

RES=residuals

Results

Table 5. Use of ICT by the head's gender

Head' gender	Low use	Middle use	High use
Male (n=405)	15%	71%	14%
	RES= -1.5	RES= 2.8	RES= -2.0
Female (n=253)	19%	60%	21%
	RES= 1.5	RES= -2.8	RES= 2.0

9 centres were missed in this variable (1.3% of the sample)

Chi 2 Pearson, p Value = 0.02, Cramer V=0,108

RES=residuals

Results

Table 6. Use of ICT by internet training during the last three years

Internet training during the last three years	Low use	Middle use	High use
Yes	16%	63%	22%
	RES= -0.4	RES= -3.1	RES= 4.3
No	17%	74%	9%
	RES= 0.4	RES= 3.1	RES= -4.3

3 centres were missed in this variable (0.4% of the sample)

Chi 2 Pearson, p Value = 0.02 Cramer V= 0,081

RES=residuals

Results

No statistical significant relation was observed
between

The centre's size,

The age of the head,

The length of Internet connection and use



Use of ICT

Results

- Primary schools trend to have a high use of ICT
- The smallest cities trend to have a high use of ICT
- A positive attitude toward the ICT and its use is associate with a high use of ICT
- The women heads trend to develop a higher use of ICT
- The training in the use of Internet was also associated with a higher use of ICT.

Conclusions

- The most of the centers trend to have a frequent use of ICT
- There is a lack of use of ICT among the teachers, particularly in the communication activities with other teachers and other professionals.
- Very few school heads use ICT to let the centre know by others or to establish collaborations with other centres.

Future prospective

- Our results suggest that having Internet connection in the School does not predict the use of ICT.
- The inclusion of any training activities in the use of ICT could encourage the school managers in its use.
- The promotion of the use of ICT must involve both the administrative and teaching-learning activities in schools

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THANK YOU!