The Contribution of School-related Factors to ICT Use as a Management Tool in Primary and Secondary Education

David Rodríguez-Gómez[1], Julio Meneses[2], Sergi Fàbregues[2]

1. Applied Pedagogy Department. Universitat Autònoma de Barcelona.
2. Internet Interdisciplinary Institute. Universitat Oberta de Catalunya .

Universitat Oberta de Catalunya
IN3
INTERNET INTERDISCIPLINARY INSTITUTE
http://in3.uoc.edu

Funded by

Fundación *Telefónica*

ECER 2012
Network: 16. ICT in Education and Training
Cádiz, 18-21 September 2012

Introduction

- In the recent decades, there has been a wide academic interest in the implementation of **ICT in schools** (Law, Pelgrum & Plomp, 2008; UNESCO, 2005).

- These studies **have highlighted how ICT** reconfigure classroom practice, create new varieties of learning practices, change teachers' and students' roles, and improve students' engagement and outcomes (OECD, 2005; Crook et al., 2010).

Introduction

- Recent research concluded that focusing solely on variables at **class level or individual teacher characteristics is insufficient** (Vanderlinde & Van Braak, 2010).

- Teachers' perceptions about **structural conditions** such as ICT policy planning, ICT support and ICT infrastructure **have a positive influence on ICT integration in primary schools** (Tondeur, van Keer, van Braak & Valcke, 2008).

The problem

- However, the complexity of ICT implementation as a professional tool outside the classroom **have received little attention**.

- This research addresses this gap by examining the **influence of organisational conditions** on teachers and administrators' management **use of ICT outside the classroom**.

Internal Use	External Use
•Encouraging team work among teachers. •Promoting teachers professional development actions. •Enhancing communication and decision-making in the school.	•Interacting with parents and students. •Promoting the engagement of other socio-educational agents. •Collaborating with other schools, institutions or companies.

Approach and aim of the study

- The **aim** of this research is to develop and test a **model of the influence of school-related factors in teachers and administrators' use of ICT**, particularly the internet, as a management tool in primary and secondary schools.

- This study builds on school-related characteristics and contextual conditions identified in previous frameworks (Lim, Chai, & Churchill, 2011; Tondeur, Valcke & van Braak, 2008; Vanderlinde & Van Braak, 2010).

- We analyse the differences in the **internal, external** and **global** management use of ICT by exploring the contribution of selected factors.

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Method

- **PARTICIPANTS:**

  - 700 school principals from a random sample of 700 schools in Spain completed a self-administered questionnaire in 2007.

- **DATA ANALYSIS:**

  - **Multivariate analysis: 3 multiple regressions** were ran to determine the relationship among teachers and administrators' internal, external and global professional use of internet as a management tool and every independent variable.

La integración de internet en
la educación escolar española:
situación actual
y perspectivas de futuro

Informe de investigación
Julio de 2008

Carles Sigalés
Josep Mª Mominó
Julio Meneses
Antoni Badia

Con la colaboración de:

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Method – cont'd

- **MEASURES:**

  - *School-level information and location.*

  - *Organisational development*(KMO=0.770, p=0.000; 49.71% of total variance explained; α=0.740).

  - *ICT policies* (KMO=0.714, p=0.000): teaching ICT policy (48.35%; α=0.901) and management ICT policy (16.97%; α=0.790).

  - *ICT support* .

  - *ICT infrastructure* (KMO=0.688, p=0.000; 50.63%; α=0.675).

  - *Management use of ICT* (KMO=0.838, p=0.000): Internal (62.04%; α=0.896) and external use (12.63%; α=0.905).

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Findings

Table 1

	Internal Use	External Use	Global Use
	Beta	**Beta**	**Beta**
Stage of education			
Comp. Primary & Secondary	-	-	-
Comp. Primary	0.029	0.028	0.032
Comp. Secondary	-0.078	-0.036	-0.064
Location of school			
Under 10,000 hab.	-	-	
10,001 – 50,000 hab.	0.016	-0.023	-0.004
50,001– 100.000 hab.	-0.048	0.009	-0.022
100,001 – 500.000 hab.	-0.034	-0.052	-0.048
500.001 hab. and over	-0.022	-0.053	-0.042

▪ Sampling variables such as **stage of education** and **location of the school** are not associated with **management uses of ICT**.

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Findings

Table 1– cont'd

	Internal Use	External Use	Global Use
	Beta	Beta	Beta
Org. Development	0.114*	0.145*	0.145*
Teaching ICT policy	0.204*	0.128*	0.186*
Management ICT Policy	0.229*	0.253*	0.271*
ICT support	0.113*	0.077*	0.107*
ICT infrastructure	0.040	0.049	0.050

- Higher level of reported **organisational development** is a significant predictor of **the management use of ICT,** specially, **global and external use.**

Findings

Table 1– cont'd

	Internal Use	External Use	Global Use
	Beta	Beta	Beta
Org. Development	0.114*	0.145*	0.145*
Teaching ICT policy	0.204*	0.128*	0.186*
Management ICT Policy	0.229*	0.253*	0.271*
ICT support	0.113*	0.077*	0.107*
ICT infrastructure	0.040	0.049	0.050

- Having **ICT policies** is significantly associated with **higher management uses**.

- **Management ICT policies** are **more important** than teaching ICT policies to promote the management use of ICT in primary & secondary schools.

Findings

Table 1– cont'd

	Internal Use	External Use	Global Use
	Beta	Beta	Beta
Org. Development	0.114*	0.145*	0.145*
Teaching ICT policy	0.204*	0.128*	0.186*
Management ICT Policy	0.229*	0.253*	0.271*
ICT support	0.113*	0.077*	0.107*
ICT infrastructure	0.040	0.049	0.050

- Increase in **ICT support** account for slightly more **internal** and **global management uses** of ICT.

- Available **ICT infrastructure** is not important after controlling for all the other explanatory variables.

Some early conclusions...

- This study suggests that **school characteristics** are not associated with a higher managerial use of ICT.

- Interestingly, the findings also show that **ICT policies** and **OD** are more important than **ICT support** and available **ICT infrastructure** to promote a higher use of ICT for managerial purposes.

- Knowing which **organisational conditions** affect ICT management use is crucial not only to deepen our understanding of the complexity of ICT implementation but also, to approach this phenomenon from a holistic perspective.

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Limitations and future research

- **More specific measures** taking into account some of the specific traits of organisational development theory may be helpful in developing more in-depth approaches to the introduction of the internet to teachers' professional practice (Thoonen et al., 2011).

- A **qualitative approach** may be considered to explore why teachers and administrators include ICT in their managerial practices as well as the perspectives and beliefs in which the managerial use is enacted (Jehn & Jonsen, 2010; Vitale et al., 2008).

- Additionally, **qualitative methods** could also be useful for exploring the wider picture of the factors affecting ICT management use in relation to school cultures and subcultures (Mars & Ginter, 2007; Somekh, 2008).

Thank you for your attention!!

E-mail: david.rodriguez.gomez@uab.cat