Measuring Teachers ICT Pedagogical Skills to Address Computer Use for ODL

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Background

SCTE CLIENT

28 000 teachers

Remote and rural areas - no traditional campuses

SCTE - contact sessions supported by interactive white boards, instructional DVDs, screencasts and - multim

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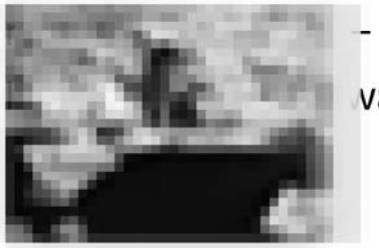
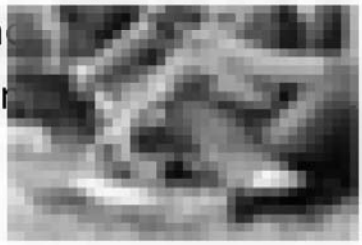




With the large numbers of students enrolled at the SCTE a well-establish structure and system need to be in place

The SCTE provides opportunities for in-service teachers to upgrade their qualifications

The SCTE student live in rural and remote areas and therefore choice to study via a distance learning mode, like the ODL approach followed at the SCTE

The SCTE model includes multimodal instructional platform where traditional teaching is combined with different ICT tools for teaching

It is imperative that the students enrolled at the SCTE should be ICT literate/competent

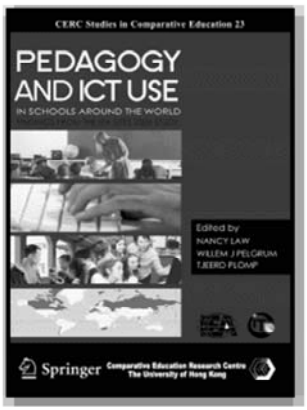
Introduction

SITES 2006
Second Information Technology in Education Study 2006

INTERNATIONAL

- Grade 8 mathematics and science teachers, school principals, technology coordinators – large scale and contextual survey
- Stratified random selection
- Public domain after released by the IEA

Public domain



To be able to determine the skills of teachers in South Africa – the country participated in the SITES 2006
It was clear that SA has the fewest number of Internet users, the lowest ration between learners and computers
And the ICT pedagogical use of the teachers are low if compared with other countries

Two studies

NATIONAL

- 600 SA science teachers
- Fewest Internet users of 22 participating countries
- Pupil:computer ratio of about 23 pupils per computer at schools
- ICT pedagogical use low when compared to other nations

THIS STUDY

- SDA of South African data
- New insights and relationsh
- Reanalysed data
- South African context

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It was clear that SA has the fewest number of Internet users, the lowest ration between learners and computers
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This study reanalyzed the SA data to provide new insight into the pedagogical use of ICTs

e-Education White paper (2004)

"... every learner in the general and further education and training bands to be ICT capable (that is, use ICTs confidently and creatively to help develop the skills and knowledge they need to achieve personal goals and to be full participants in the global community) by 2013"

This imp ching
and lear ;
student ate with
their peers locally as well as globally.

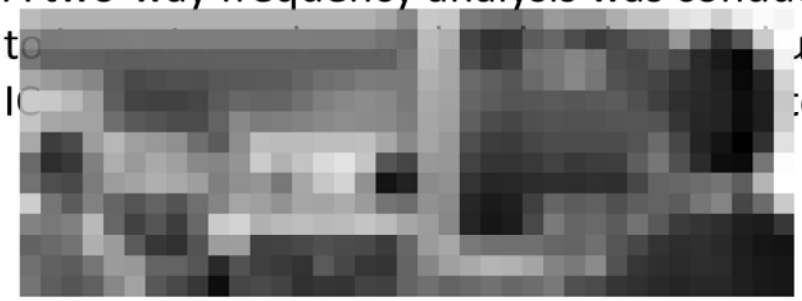
The South African e-Education White paper of 2004 implicated that all teachers and learners should be fully digitally competent by 2013

We are in 2011 and it is would be interesting to determine the ICT skills and knowledge of the country

Aim

THIS STUDY

A two-way frequency analysis was conducted



The Sites 2006 determined the daily use of ICT by grade 8 science teachers in the classroom situation
This study investigate possible ways to increase teachers ICT skills in an attempt to also favor CT competencies of learners

Findings

ICT USE IN CLASSES

Only few (20.81%): powerful tool to extend educational opportunities

Previously disadvantage: gender groups, disabilities, social and cultural

USE ICT TO CARRY OUT ASSESSMENT

Minority (18.77%): vital in education

Well-developed criteria, procedures, easy-to-use techniques

INCORPORATE ICT IN CLASSES

Never (73.42%): should empower learners for dig

ICT use in classes – teachers do not recognize the importance of ICT as a powerful tool to extend educational opportunities

Interactivity of technological-support for educational purposes provide the learners and teachers with a tool that can increase collaboration across time and distance

ICT for assessment – introduction of ICT as pedagogical tool can be use to collect evidence of achievement, to evaluate evidence against outcomes,

Assess learners development and improve the process of T&L

Incorporation of ICT in classes – teachers should be equipped with ICT knowledge to incorporate technology concepts and skills in a pedagogical environment

Findings

GENERAL USE

Majority (72.71%): do not use ICT as part of daily lives

PEDAGOGICAL USE

Majority (83.02%): teachers need extensive knowledge

IMPACT OF ICT USE ON ICT COMPETENCY OF TEACHERS

Majority teachers (71.87%) indicated that pedagogical use can increase their ICT competency

PEDAGOGICAL USE OF ICT TO CHANGE TEACHING

Majority (57.29%) indicate that the use of ICT can be use to change teaching

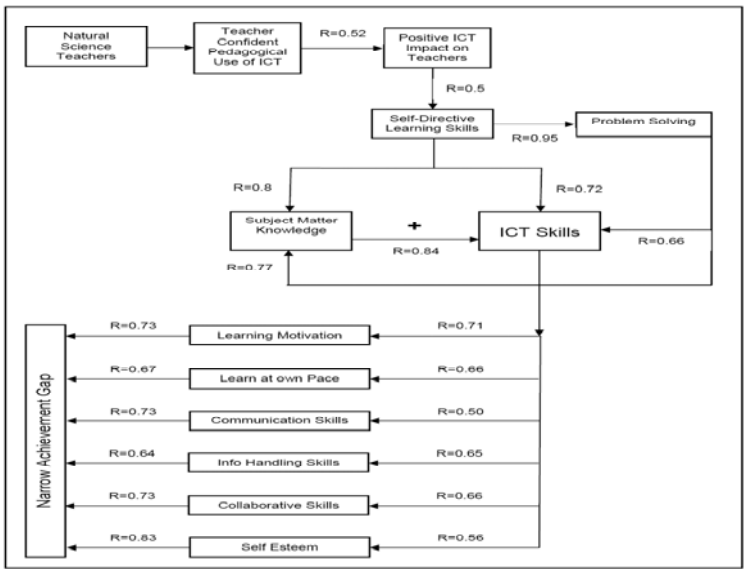
General use of ICT – a majority of teacher do not use ICT to produce letters, e-mail of messages, use PowerPoint's, spreadsheets for budgets, and so forth

Pedagogical use of ICT – majority do not use ICT for lessons preparation, they not know about downloading files or use Internet for lesson plans and curriculum statements and relevant information

Teachers that indicated that they use ICT as pedagogical tool (only 67) felt that learners using ICT in a pedagogical environment will become more ICT competent

Furthermore the 67 teachers indicated that the impact of pedagogical (that is putting theory into practice) use of ICT can change the teachers approach to teaching. Teachers who were involved in ICT training have reported significant changes in their understanding of different of teaching strategies and the application thereof

Proposed framework



From the data using a two-way frequency analysis a framework was proposed that indicated the different skills teachers need to narrow the achievement gap between the teachers ICT competency and the implementation in the classroom

A factor analysis was conducted on the dataset

A correlation of 0.5 is considered as a large effect which indicates a practically significant correlation

The framework only include factors that revealed practically significant correlations

Teachers who use ICT in a pedagogical way are more positive towards the use of ICT in different environments

The use of ICT promotes self-directive learning and problem solving skills and support increase in the subject knowledge of the teacher

Well-developed ICT skills (increase in skill development) through the identified factors will narrow the achievement gap between teachers as students and their ODL curriculum.

Conclusion

ICT skills developed together with

- learning motivation
- learning at own pace
- communication
- info handling
- collaboration with ot
- self esteem

Purposeful computer use can

The identified skills should form part of all programs at the SCTE

If the teachers skills improve the learners ICT skills will improve

From this study 6 ICT related skills were identified that can contribute to improved T&L

Conclusion

Well-developed ICT skills will increase ICT competence

Recommendations

- direct future curriculum designers
- address computer use of teacher
- 

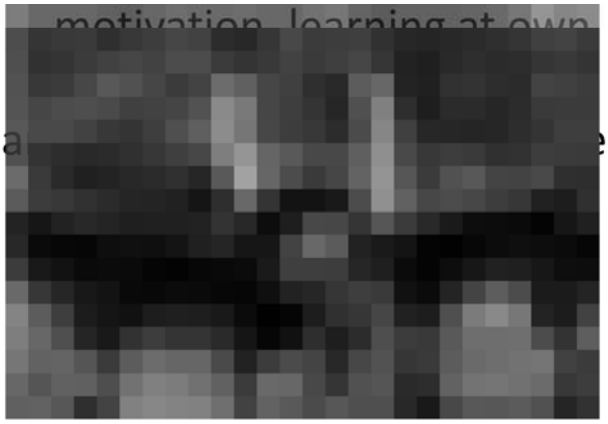
Finding from this study indicated that if the mentioned ICTs are used purposefully during training to expand and encourage specific abilities and skills the achievement gap might be narrowed

The results of this study have immediate implications to the T&L in a multimodal ODL environment

Although the findings of SITES 2006 relate to the main international study, this paper contextualises the findings to inform South African ICT policy and the Open Distance society about the ICT use of teachers

Eminent conclusion

ODL in-service teacher training models should move towards the development of ICT skills together with factors like learning



Students are born with a powerful desire to learn
Everything we do must ensure that this powerful desire is kept alive
Too many students leave with little to show for their time at schools
Too many leave powerless

THANK YOU

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