Mobile Applications to Enhance Versatility of Mobile Learning in Higher Education

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Jimmy MACHARIA

School of Science & Technology,
United States International University,
P.O Box 14634-00800 Nairobi. Kenya
Tel +254-203606299, Fax +254-2036001,

Email: Kmacharia@usiu.ac.ke

Overview

1. Introduction
2. The problem
3. Literature review
4. Materials & Methods,
5. Results
6. Discussions
7. Conclusion & Further Research

1. Introduction

- ✓ Rapidly increasing Opportunities due to:
  - ✓ 2014→No of Mobile Phones >No of People
    - ✓ Phones will reach 7.3 billion by 2014. siliconindia
  - ✓ Increased interest in leveraging mobile devices for learning
  - ✓ improved software, and hardware,
  - ✓ Evolving habits of mobile device users

(Haag & Alexandria, 2011)

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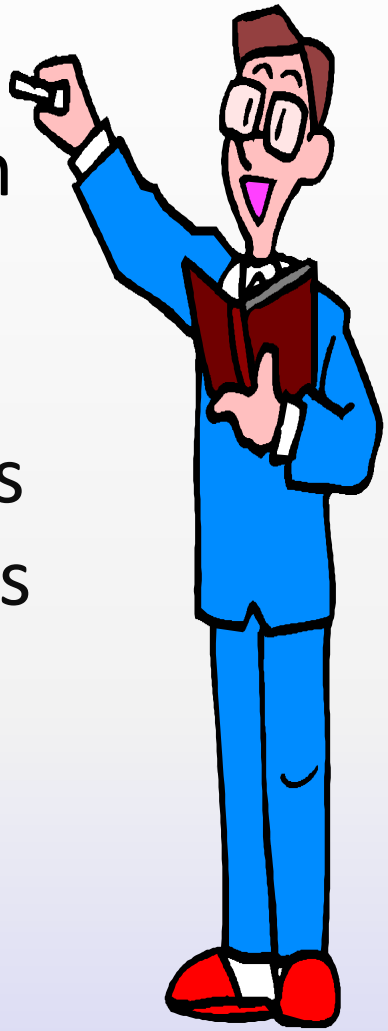
2. The Problem

M-Learning, M-Examinations:

- ✓ Authenticity of candidates in exam in remote sites
- ✓ Unreliable Internet in remote cites
- ✓ Flexibility in M-learning examinations
- ✓ Simplicity in M-learning examinations
- ✓ Security in M-learning examinations



3.Literature Review

1. Like it or not, ready for it or not:
    - mobile learning represents the next step in a long tradition of technology mediated teaching (Wagner, 2005).
2. Researchers have stated that:
    - the usage of mobile learning tools is an interesting area of research that is worth to be investigated (Sarrab, et al., 2013)
3. Security, authentication, authorization in M-learning and m-examinations
    - Remains a thorny issue. (Kambourakis, 2013)

4a. Materials and Methods,

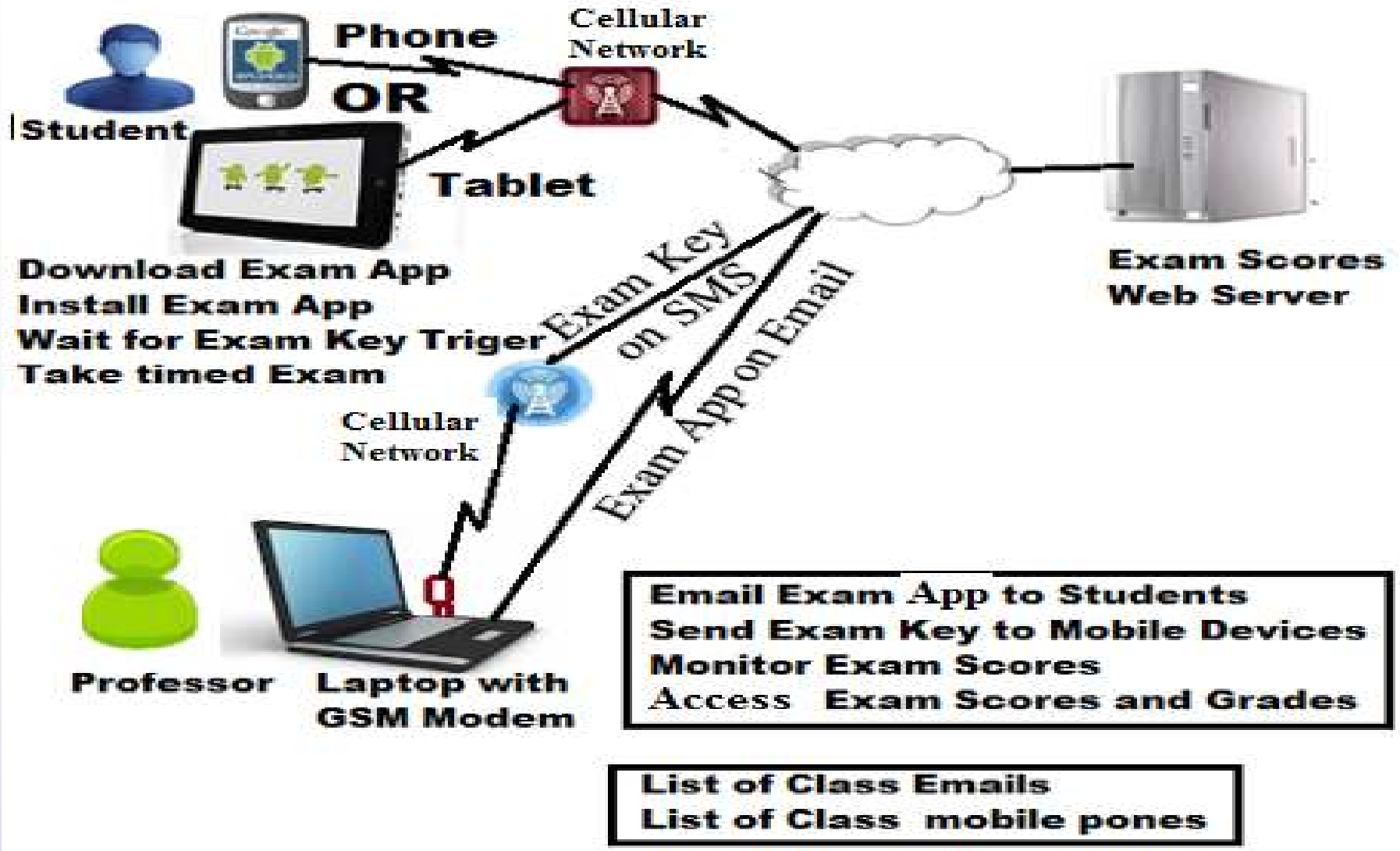


Figure 1. Mobile Examination Environment Scenario

4b. Materials and Methods,

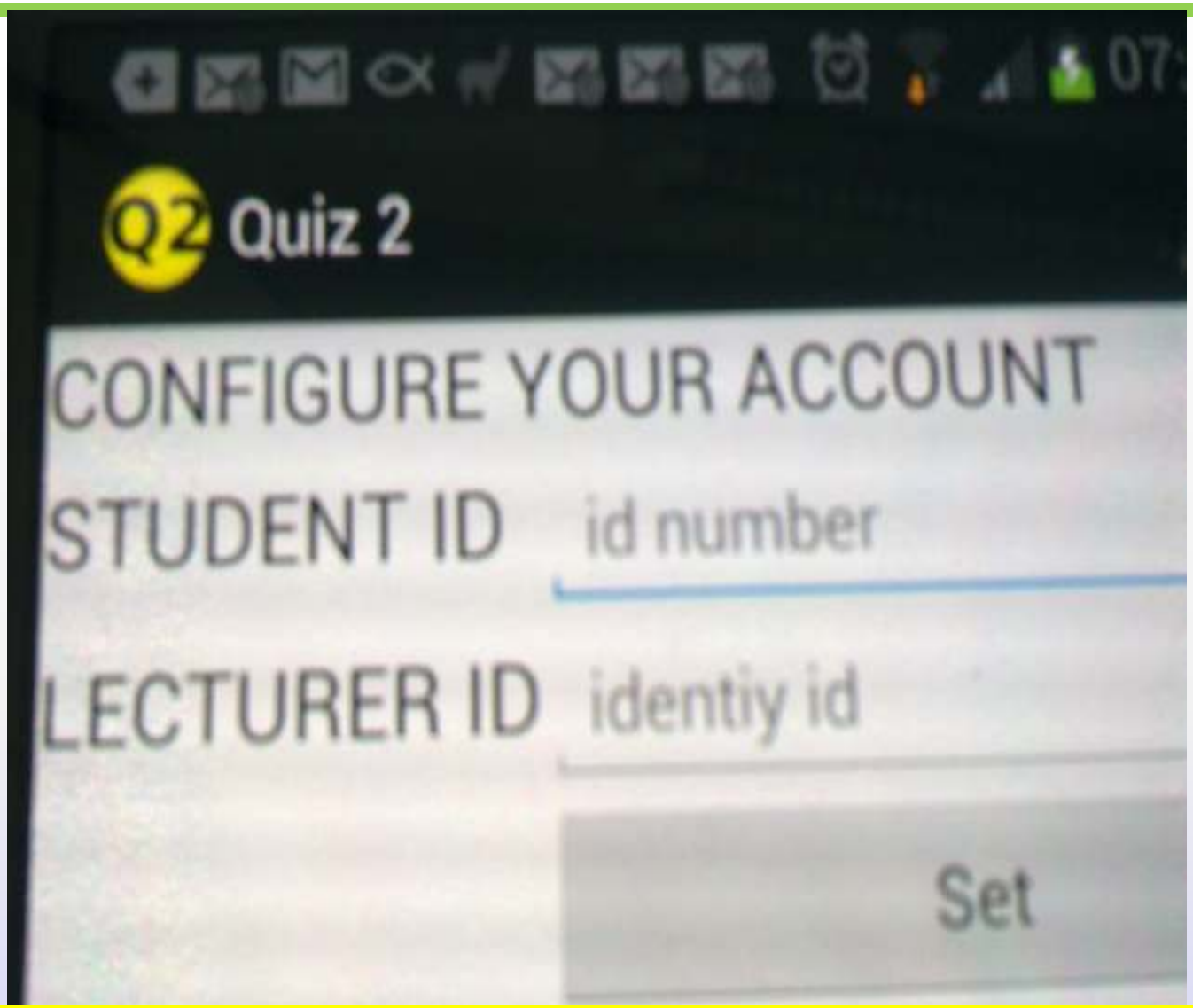
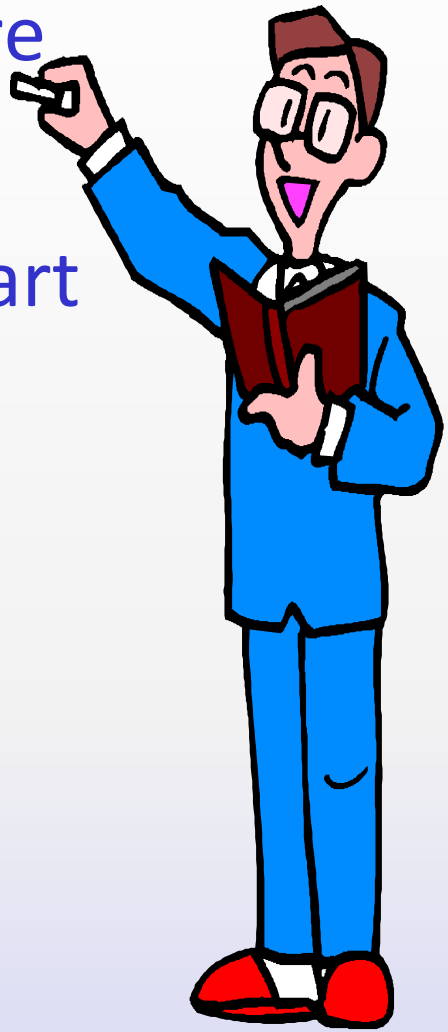


Figure 2: Mobile Phone interface of a running Mobile Exam App

4c. Materials and Methods,

- Cross sectional Survey questionnaire
- Sample size/class size -60 students
- Muilti-item constructs on a 1-7 Likart Scale
- Factor and regression analysis



5a. Results-Model Summary

Table 1: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.933[a]	.871	.867	4.66475	.871	232.085	7	241	.000	2.057

a. Predictors: (Constant), SL, OS, PP, EE, PE, ICT, S

b. Dependent Variable: BIU

predictor variables can explain 87.1% of the change/variations in Behavioral Intension to use m-Learning.

Durbin Watson for all variables was 2.057, which fell within acceptable limits of between 1.5 and 2.5). The results reflect that no multicollinearity exist between variables

5b. Results-ANOVA

Table 2: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35350.982	7	5050.140	232.085	.000[b]
	Residual	5244.140	241	21.760		
	Total	40595.122	248			

a. Dependent Variable: BIU

b. Predictors: (Constant), SL, OS, PP, EE, PE, ICT, S

The significance is .000, so we can reject the null hypothesis that "The model has no predictive value."

5c. Results-coefficients

Table 3: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	-5.274	3.745		-1.408	.160	-12.651	2.103		
	PP	.014	.027	.012	.517	.606	-.039	.066	.987	1.013
	SI	-.283	.286	-.215	-.989	.324	-.846	.281	.011	87.909
	PE	.021	.016	.030	1.274	.204	-.011	.053	.984	1.016
	OS	-.054	.025	-.050	-2.141	.033	-.103	-.004	.972	1.029
	ICT	1.084	.027	.932	39.939	.000	1.031	1.138	.985	1.015
	EE	.044	.021	.048	2.053	.041	.002	.086	.995	1.005
	SL	.280	.263	.231	1.064	.289	-.238	.798	.011	87.865

a. Dependent Variable: BIU

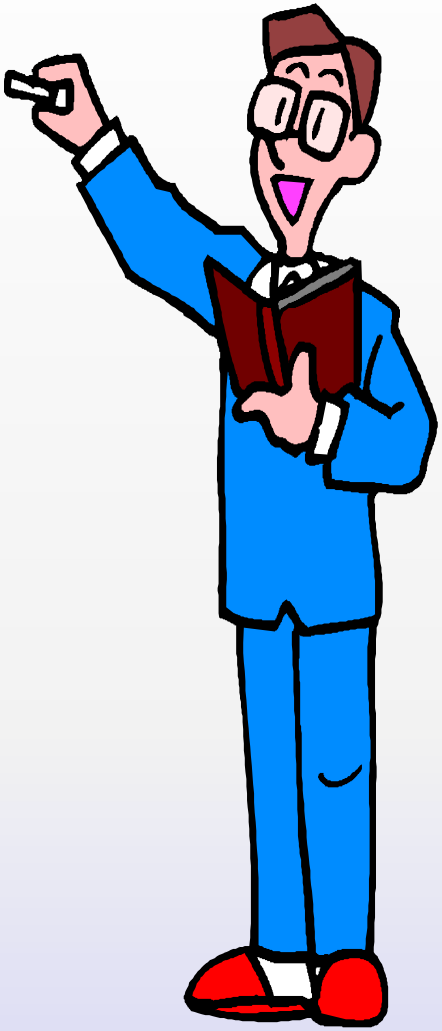
The model is given by Behavioral Intention to use (BIU) m-Learning

= -5.274 + 0.044*EE + 1.084*ICT -0.054*OS + error.

Where OS=Organizational Support ,
ICT=Availability of ICTs and
EE= Effort Expectancy .

6a. Discussion

- ✓ **Organizational Support (OS),**
  - ❑ **Top management buy-in**
  - ❑ **Budget**
  - ❑ **Human resource development**
  - ❑ **Mobile content**
- ✓ **Availability of ICTs (ICT)**
  - ❑ **Infrastructure availability**
    - Free –wifi
    - Free internet
- ✓ **Effort Expectancy (EE),**
  - ❑ **Design issues**
    - Simple , flexible, friendly



6b. Discussion

- ✓ **M-Learning readiness:**
  - ❑ **Students might basically be ready**
  - ❑ **Administrators??**
  - ❑ **Professors??**
  - ❑ **Kenyan Higher Education??**

  (Corbeil & Valdes-Corbeil, 2007).

7. Conclusion & Further Work

- ✓ **Findings:**
  - ❑ **Organizational Support (OS), Availability of ICTs (ICT) and Effort Expectancy (EE) have significant influence on BIU**
  - ❑ **Mobile Examination using mobile applications and triggers**
    - Can be made simple, flexible, secure and friendly
- ✓ **Further Work:**
  - ❑ **Readiness of administrators and professors**
  - ❑ **Use of device camera and GPS to enhance security in remote examinations**
  - ❑ **Use of larger sample across many universities and regions**

Questions