

A FRAMEWORK FOR HARNESSING ICT RESOURCE USAGE TO IMPROVE THE ACADEMIC PERFORMANCE OF SECONDARY SCHOOL STUDENTS IN KIAMBU SUB-COUNTY

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OVERVIEW OF THE STRUCTURE

- Statement of the problem
- Objectives of the study
- Literature review
- Research findings
- Conclusion and recommendations

Statement of the problem

- ICTs provide an opportunity for educational institution to harness the use of technology to improve academic performance
- According to Gaku et al, (2008), despite the enormous advocacy of ICT aided teaching and learning and the heavy investment on ICT equipment, schools still faces the challenge of how to transform students' learning process
- What challenges are experienced by teachers and learners in harnessing the use of ICT resources in teaching and learning in secondary schools of Kiambu sub-county?

Objectives of the study

Objectives:

- To examine whether the availability of ICT resources has an outcome on students' academic performance in schools of Kiambu sub-county
- To identify the challenges for harnessing ICT resources to improve performance of students in Kiambu sub-County
- To develop a framework for harnessing ICT resources to improve performance of students in Kiambu sub-County
- Validate the proposed framework for harnessing ICT resources to improve performance of students in Kiambu sub-County

Literature Review

(I) Reviewed theoretical frameworks

- ***Behaviorist theory*** (B.F.Skinner (1938))
 - It's a simple tactic of reinforcing the right behavior through reward and no reward for wrong behavior
- ***Social learning theory***(Albert Bandura,(1986))
 - It postulates that learners are impacted on what they observe in media

Constructivist theory(Seymour Papert (1980))

- views the learner as an active participant involved in structuring their own learning experiences

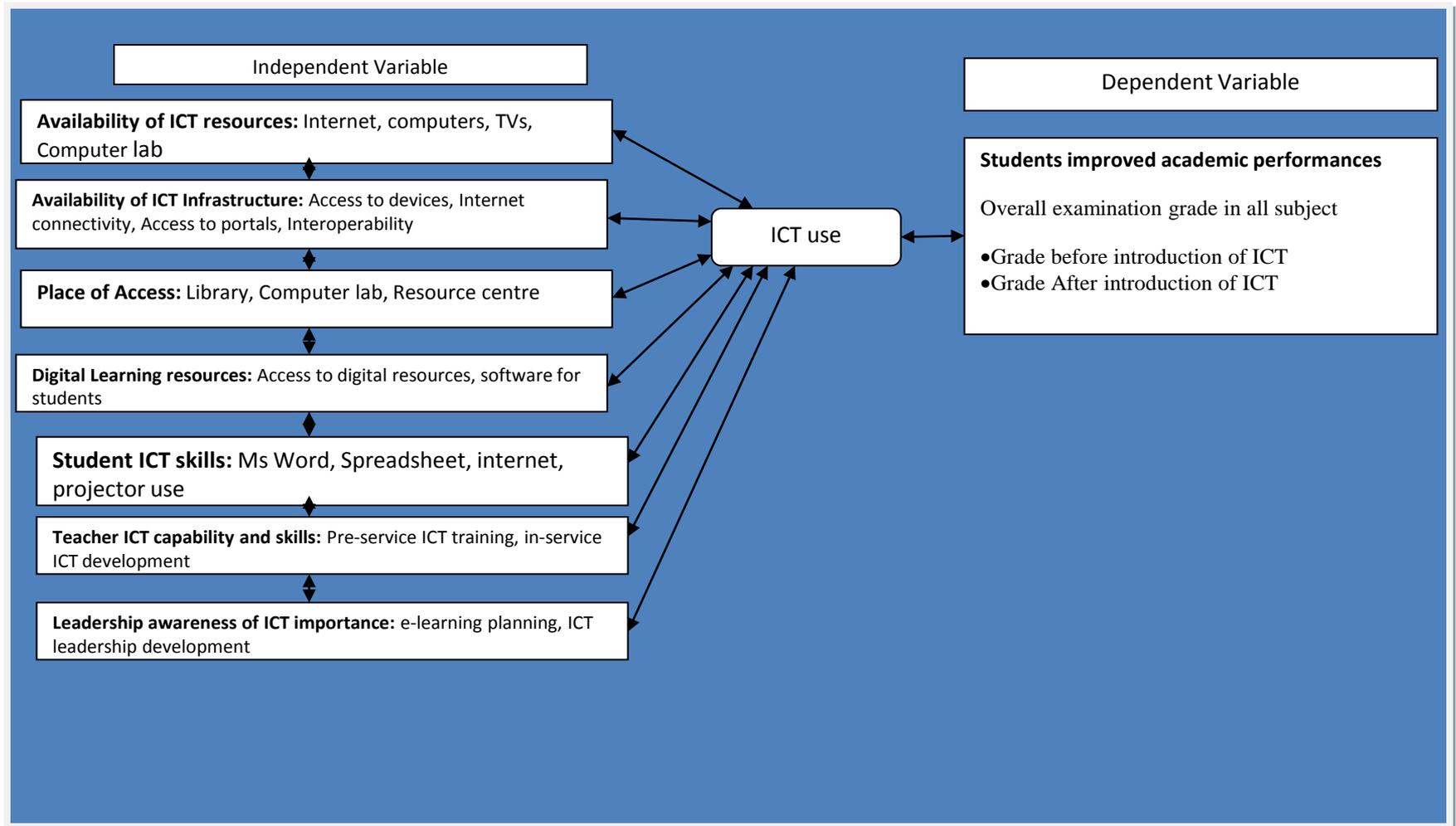
(ii) ICT and students performances

- There are mixed results between the use of ICT and pupils academic performance
- Kulik (1999) and Coates et al (2004) Pupils who use computer-based instruction had higher performance than those without
- Leuven et al (2004) Use of ICT by students has no impact on performance
- Fletcher-Flyn and Gravatt (1995) on the effectiveness of computer-assisted instruction (CAI) the positive impact of computers is relatively small
- Coates et al (2005) Students exposed to ICT performs better than those exposed to progressive methods
- Weaver (2000), Moseley et al (1999) There is small link between computer use in the curriculum and students' improvement in performance and that having more computers does not make much difference

A Review of models and frameworks

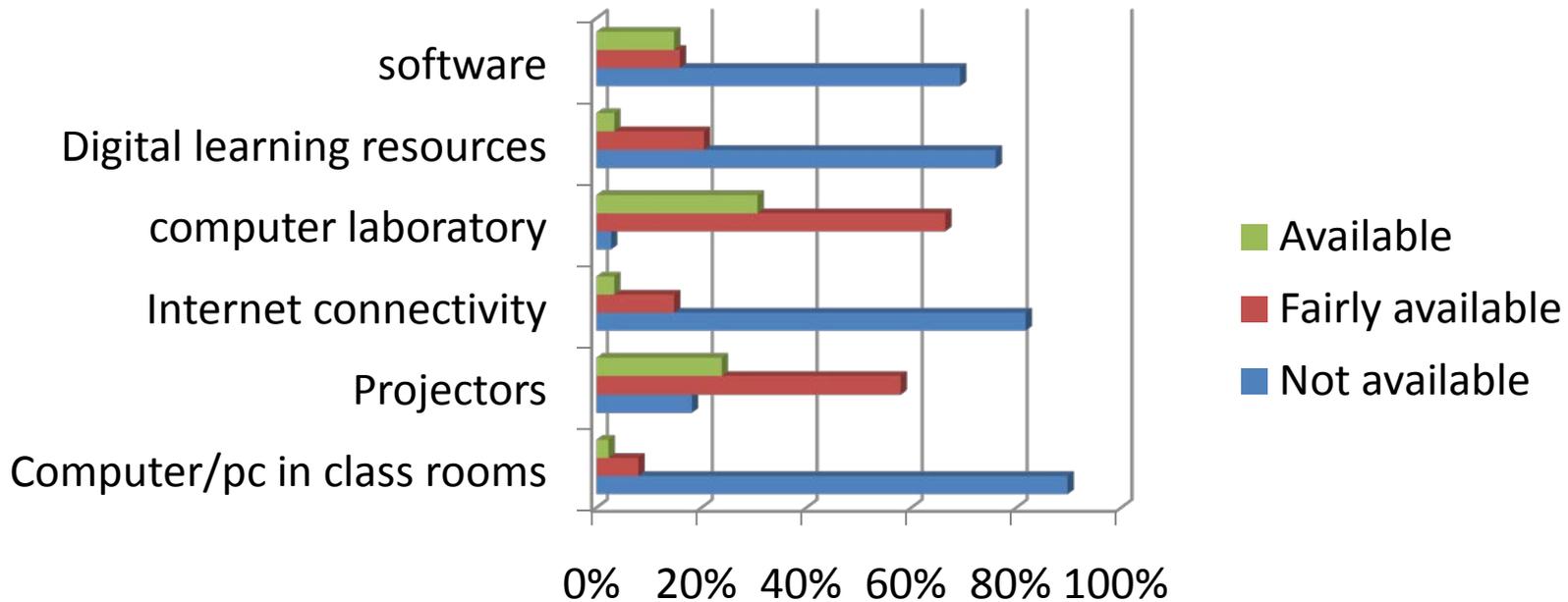
- The analytical framework by Roger Blamire (2006) helps to describe the context in which ICT is introduced and implemented
- Model on Impacts of ICT use on school learning outcome, Myunghee Kang, HeeokHeo, Ilhyun Jo, Jongho Shin (2008) shows the factors that influence ICT use and the educational performance of learners
- Bilbao-Osorio's model (2003) maps the different factors affecting the development and use of digital learning resources, and their impacts on the educational system
- Marcelo Cabrol and Eugenio Severin's framework(2010) is used to support the design, implementation, monitoring and evaluation of the projects where ICT have been incorporated in schools

The proposed Conceptual framework adopted from Bilboa model (2003)



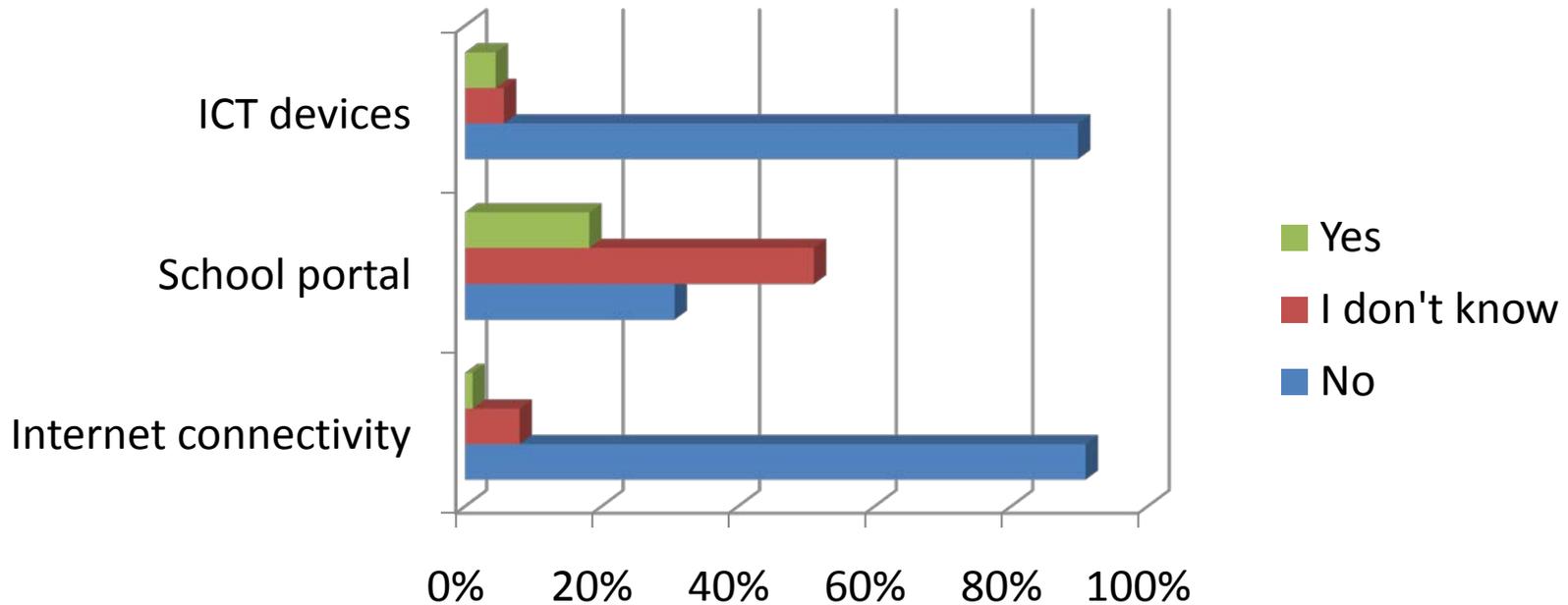
Research Findings

(i) Availability of ICT resources



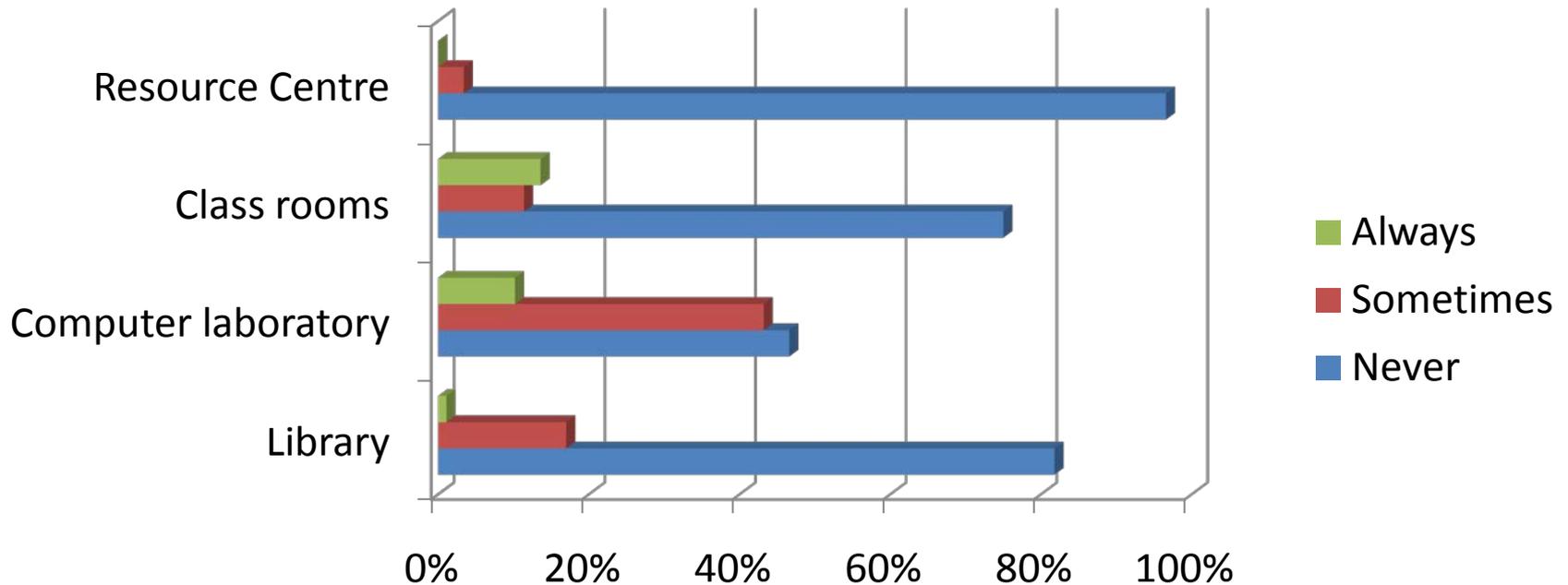
The results obtained showed that most schools have no computers, projectors, Internet connectivity or digital learning Computer laboratory are available though empty

(ii) Student's Responses on the availability of ICT infrastructure



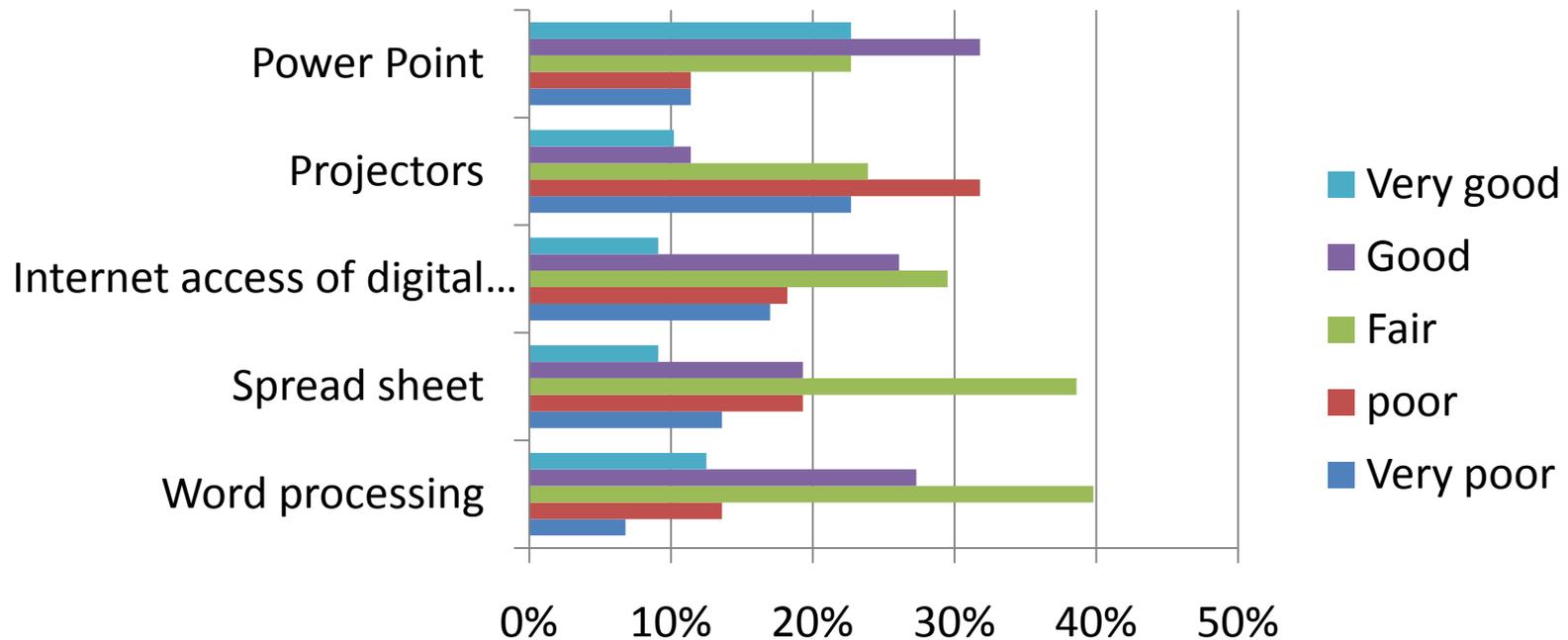
This suggests that access to ICT devices were limited

(iii) Responses on location the respondent's accesses ICT resources



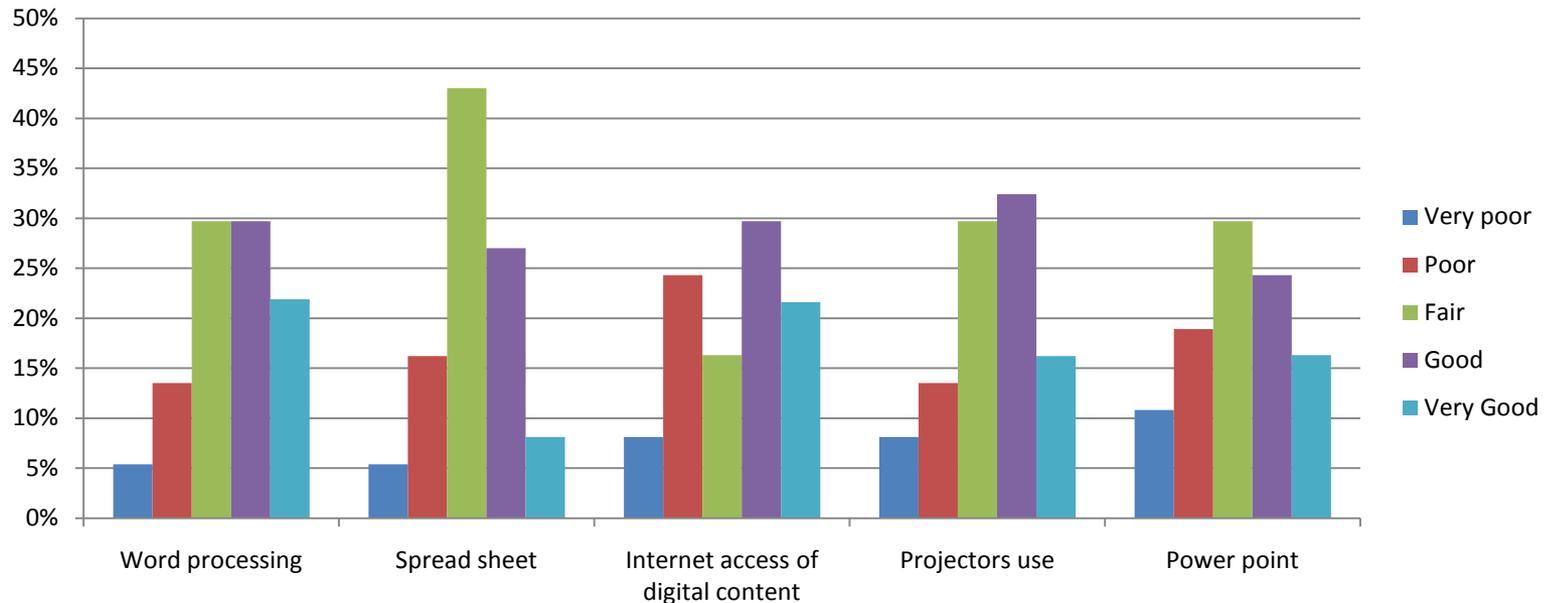
The results suggests that there is limited access to ICT resources

(iv) student's responses on knowledge and skills on use of ICT tools



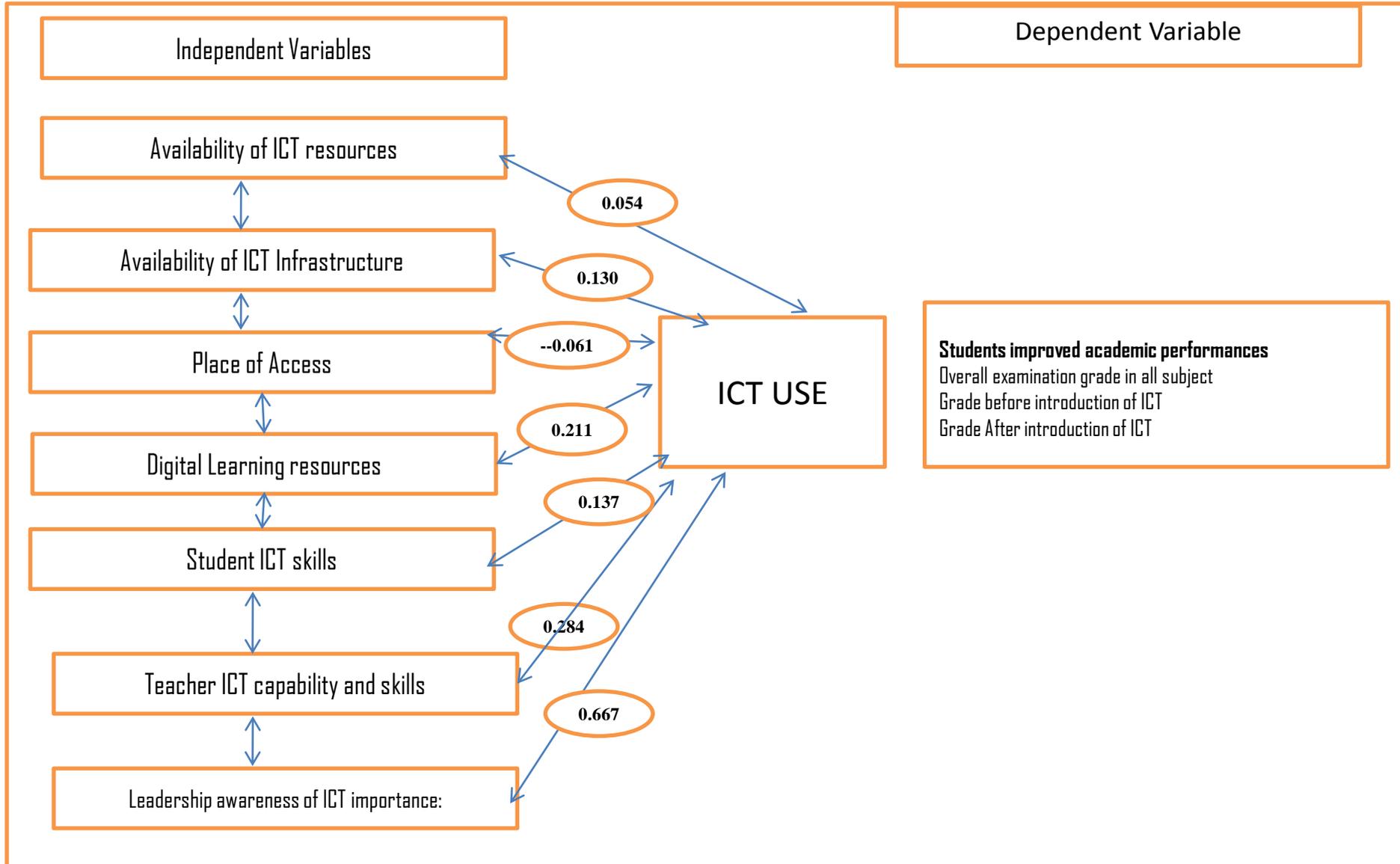
The findings shows that students are very good in word processing skills, have fair mastery of spread-sheets, have little knowledge on how to access digital content through the Internet and have poor grasp of the use of projectors

(v) teacher's responses on knowledge and skills on use of ICT tool



The results shows that teachers are average in word-processing skills, good in spreadsheet skills and can access digital content through the Internet Most teachers are good in the use of projectors, though skills in the use of power-point are limited

Refined framework



Conclusion

- The study showed that availability of ICT resources, availability of ICT infrastructure, places of ICT resource access, student ICT skills, teacher ICT capability and leadership awareness of importance of ICT were determinants of ICT use in teaching and learning process
- Based on the study findings teacher's ICT capability, availability of ICT resources and availability of ICT infrastructure and leadership awareness of importance of ICT are major significant determinants of ICT use in teaching and learning and hence the change in learning behavior
- The leading challenges of ICTs use in the teaching are lack of teachers training, lack developed digital content and lack of trained personnel

Recommendations

- In-service training of teachers be achieved as a continuous process
- The government through Teachers Service Commission (TSC) employs more teachers so as to reduce workload
- *Schools to invest more in computers and related technology* as means of not only solving accessibility problem but improving on the presence of the facilities in the classroom and computer laboratory
- The framework is tested again in other parts of the country
- Further research to be done regarding framework formulation for ICT development in other counties too to act as a basis for policy formulation to guide the government and other stake holders in Kenya