

**Title: Adoption of the 21st Century Skills for
Effective Teaching and Learning in
Secondary Schools in Kenya: A Case of
Trans Nzoia County.**

**Theme: 'The Teacher as a Resource: Quality and
Utilization'**

**Sub-theme: 'Principles and Practices of Effective
Teaching and Learning in the 21st Century.'**

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ABSTRACT

The purpose of the study was to establish **the extent of the adoption of the 21st century skills for effective teaching and learning in secondary schools in Kenya.**

The objective of the study was to find out the extent to which teachers and school managers are prepared in the use of the 21st century instructional skills.

The study established that a majority of teachers and managers were not fully equipped with the 21st Century skills and most schools lacked basic **infrastructural** support to facilitate effective use of the skills in teaching and learning.

- ***Key words: 21st Century skills, digital literacy, Critical thinking, communication, Problem solving, Assessment practices, Collaboration, communication and facilitation.***

Background of the study

21st Century skills; Communication, Collaboration, Critical thinking and Creative thinking are requisite for effective teaching and learning. They received attention even **before the 21st century** (Risinger, 2008). Students in the 21st century have grown up in a fast-paced digital world and easily tune out of the traditional - lecture based classroom (Burke *et al.* 2009).

1.2 Statement of the problem

21st Century skills; **Communication, Collaboration, Critical thinking and Creative thinking** are requisite for effective teaching and learning. Society has undergone a rapid shift in its economy and technology affecting the 'workplace'. The education system has therefore to prepare learners for the 'new' workplace prompting the question, is the Kenyan Education System prepared for these emerging rapid changes?

1.3 Objectives of the Study.

- The main objective of the study was to find out the extent to which teachers and school managers are **prepared** in the use the 21st century instructional skills through; Planning instruction, digital literacy, Critical thinking, communication ,Problem solving, Assessment practices, Collaboration and facilitation in teaching and learning.

1.4.1 The study was guided by the following objectives ;

- To establish the level of implementation of the 21st century **instructional practice among educators** in secondary schools in Trans Nzoia County.
- To establish the level of implementation of the 21st century instructional practice in various **disciplines** in secondary schools in Trans Nzoia County

1.4.2. Research question

What are the levels of level of implementation of the 21st century instructional practice among educators in secondary schools in Trans Nzoia County ?

1.4.3. Null Hypothesis

There is no statistical significant difference in the application of the 21st century instructional practice on different **disciplines** offered in secondary schools in Trans Nzoia County.

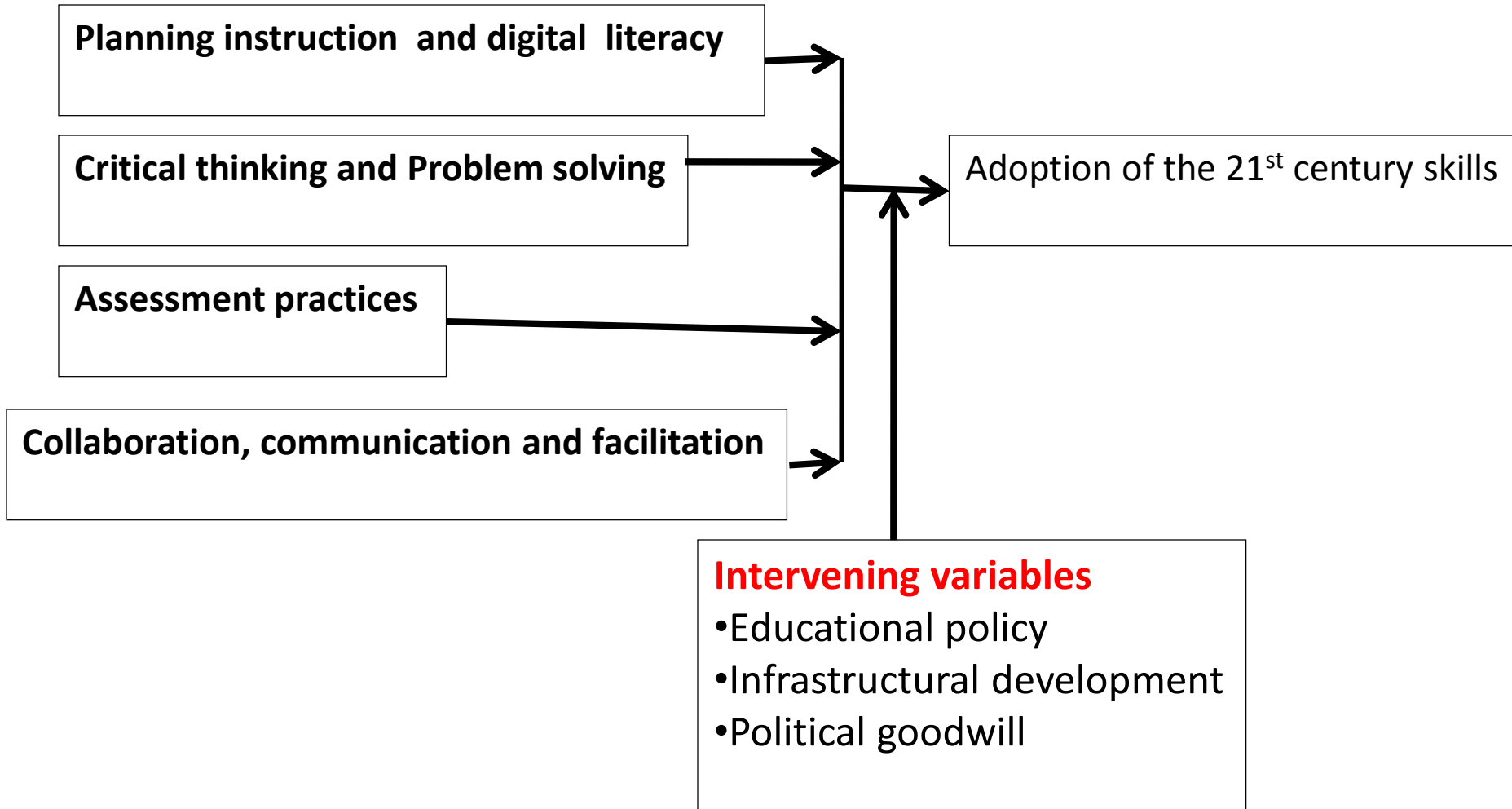
Theoretical Framework.

- The study was guided by the theory of **Perceived Attributes by Rodgers (1995)**. This theory postulates that “potential adopters judge an innovation based on their perceptions in regards to five attributes of the innovation thus; **trialability, observability, relative advantage, complexity and compatibility.**
- This theory is significant as technological advancement in the 21st century skills is quite rapid and its adoption is very significant for the nation to move with the rest of the world.

Conceptual Framework.

Independent variables

Dependent variable



Research Design and Methodology

3.1 Research Design

Descriptive Research design was used. Data collection instruments were questionnaires and document analysis. The target population was **230 Principals**, and **1,800 secondary school teachers**. A 30% sample was used giving **69 principals** and **540 teachers**.

Purposeful sampling was done to get the principals as they have privy information on the adoption of the skills in their schools. Stratified sampling was used to get the teachers from National, Extra County, County, Sub-County and private schools.

3.2 Data collection Instruments

The researcher used **questionnaires and document analysis** to collect primary data. Questionnaires were constructed based on the research objective. The use of a questionnaire was selected because it is convenient in obtaining the answers from a large number of respondents.

3.3 Data Analysis

- Data received was edited than analyzed. **Qualitative** data was analyzed using **descriptive statistics** thus frequency counts, percentages and tables to describe distributions. The mode was used to show the category of observation that appeared most frequently in the distribution or the category that contained the largest number of responses.
- **Quantitative** data was analyzed using **inferential statistics, Mann Whitney U test and Kruskal Wallis**, to depict the exact implementation of the 21st Century skills by the teacher.
- To accomplish this, statistical package for social sciences **(SPSS)** was used. This assisted in determining **the patterns** of responses to each of the independent variable being investigated by the study.

4.0 Results and discussion

4.1 The level of implementation of the 21st century instructional practice among educators in secondary schools in Trans Nzoia County.

- 4.11 Planning instruction and digital literacy, Critical thinking and Problem solving

The results show that the 21st century instructional practice of **digital literacy usage in both public and private schools is low only 56%** (mean = 3.4) of the teachers utilize technology in their classroom practices while 44 % do not.

Triangulated information from school managers also indicate that **technology is seldom used in planning lessons** (mean=2.6) and students do not use technology to find information (mean=2.0). This is largely due to insufficient ICT infrastructure to facilitate Web 2.0 technologies (the second stage of development of the internet that emphasizes on user-generated content) in teaching and learning.

*Private schools students engage more in **computer related learning** compared to public schools ($u = 9.03, p = .000$) at $\alpha = 0.05$).

4.0 Results and discussion

- Critical thinking and problem solving is used by the teachers at an **average of 67 %** (mean= 4.0).
- Teachers **hardly** encourage **projects** that are research based (mean=2.9) and hardly prompt students to use critical thinking skills. (mean=2.9).
- They seldom allow learners to **make decisions** (mean=3.5) and facilitate student investigation and problem solving however they frequently model desired behaviors and **social skills** (mean=4.7). and coach students to apply real life situations to their knowledge base (mean=4.7).
- Public schools **promote critical** thinking compared to private schools ($u = 8.02$, $p < 0.000$) at $\alpha = 0.05$.

4.1.2 Assessment practices, Collaborator, facilitator and communication

- The most used assessment practice is teacher designed **examination and quizzes** (mean=4.9) and national standardized achievement tests (mean=4.4). The least used method in students assessment is Student self-evaluations (mean=2.4) and Portfolio projects (mean=3.8). Private school teachers use projects for assessment more than public school teachers ($u = 6.67, p < 0.000$) at $\alpha = 0.05$.
- Most teachers do not effectively use the skills of **Collaboration, facilitation and communication** in their instructional practice.
- The **least** used method in students assessment is **Collaboration** with other stakeholders (mean=3.0)
- Private school teachers facilitates effective communication compared to public school teachers ($u = 4.41, p < 0.003$) at $\alpha = 0.05$.

4.1.3 The level of implementation of the 21st century instructional practice in various disciplines in secondary schools in Trans Nzoia County

- The teachers of the **science subjects embraced** more 21st century instructional practice than any other discipline (mean rank=262.64), followed by technical discipline with a mean rank of 262.64, then language discipline with a mean rank of 192.72.
- The teachers of the **art subjects** are the least to adopt the 21st century instructional practice than any other discipline (mean rank=179.90)

5.0 Conclusion

- From the findings above, this study concludes that planning instruction and digital literacy, critical thinking and **Problem solving, in both public and private schools is low.** Technology is seldom used in planning for lessons and students rarely use technology to find information. Critical thinking and problem solving is used at 67%.
- Research based projects are rare. Learners are also rarely given an opportunity **make decisions**, do investigation and solve problems.
- Public schools studied however promote **critical thinking** more than private schools.
- The commonest mode of assessment according to this study is teacher designed **examinations and quizzes.**
- Students' self evaluation and **portfolio projects** are minimally used.
- **Private school** teachers were discovered to use projects for assessment more than their public school counterparts.

5.0 Conclusion cont...

- Both public and private **school teachers rarely use** the skills, collaborator, facilitator and communication.
- However, private school teachers studied facilitate communication better compared to those in public schools.
- The study also revealed that application of 21st century skills in teaching and learning depends on the discipline; teachers **of science embrace the skills more** than those who teach applied sciences while the least are those who teach arts.

5.1 Recommendations

- i) Universities need to design appropriate **contemporary teacher training programmes** to fully equip educators with 21st century skills prior to joining service.
- ii) The Teachers' Service Commission needs to organize **workshops and seminars** on the 21st century skills among all the practicing teachers in Kenya.
- iii) Donors and partners in education need to focus on, and increase funding in **ICT infrastructural development to enhance Web 2.0 technology.**
- iv) Policy planners in the ministry of education's Kenya Institute of Curriculum Development (**KICD**) need to design the appropriate curriculum in line with new global pedagogy and the changing 'workplace'.

END

THANK YOU