SJ Education Research Africa
Vol. 1 No. 4 (2024): April 2024 Issue
https://doi.org/10.51168/sjeducation.v1i1.6
Original Article

THE INFLUENCE OF COMPETENCY-BASED CURRICULUM PROMOTED STUDENTS' INNOVATIVENESS IN SELECTED GOVERNMENT-AIDED SECONDARY SCHOOLS OF WAKISO DISTRICT, UGANDA. A CROSS-SECTIONAL SURVEY.

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Abstract

Background
The study aims to establish a competency-based curriculum on students' innovativeness in selected government-aided secondary schools of Wakiso District, Uganda.

Methodology
The study applied descriptive research design with qualitative and quantitative research approaches. Data was collected randomly from 10 head teachers, 30 class teachers, and 120 students using a self-administered questionnaire and a key informant interview guide.

Results
According to the study results, competency-based curriculum implementation was highly promoted or highly promoted students' innovativeness in selected government-aided secondary schools of Wakiso District, Uganda. Through a competency-based curriculum, students became more innovative and creative. When students were instructed on competency, they were more likely to develop new problem-solving abilities, understand challenges that are prominent in the real world, become more competent in the use of technological gadgets like computers, and develop the ability to come up with alternative ways of addressing their problems. Therefore, a competency-based curriculum highly promoted students' innovativeness in selected government-aided secondary schools of Wakiso District, Uganda. Thus a lot of support should be given to such schools to have competent students who will help in the development of the country. There was a high positive linear relationship between competency-based curriculum and students' innovativeness.

Conclusion
Similarly, it was confirmed that a competency-based curriculum highly promotes students' innovativeness in selected government-aided secondary schools of Wakiso District, Uganda.

Recommendation
The school administration should work hard towards ensuring that they offer necessary support to teachers, not only that but the teachers should be involved so much in the innovativeness of the students to give them an upper hand in whichever invention they may have come up with in the CBC. In addition, there should be rewards for best-performing teachers and students as a form of motivation to enhance the CBC in secondary schools.

keywords: Innovativeness, Curriculum, Competency, Government Schools.
Submitted: 2023-11-16 *Accepted: 2024-01-14*
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Background of the study
This study intends to assess the association between Competency Based Curriculum and students' innovativeness. Its main focus is to reveal how students have been able to come up with different innovations through the development of new skills, knowledge, products, and services. Naumescu (2008) opines that competency can broadly be addressed to include among others: the management and performance of tasks, the ability to respond to issues, the capacity to take responsibility, and the ability to put one's knowledge, skills, and attitudes to new tasks.

Mlaudzi (2009) in his study on the implementation of the South African national curriculum argues that a Competency Based Curriculum is the best-proposed strategy for making and promoting student innovativeness. It is a fact that it is quintessential to upgrade and improve educating and teaching-learning methods according to the changing dynamics of the education industry. Technology is the most integral part of the equation when it comes to implementing active learning. Hence, innovative pedagogical methods used in the subject matter curriculum are essential to constantly drive the wheel of learning. It helps learners develop problem-solving abilities, understand and solve challenges that are prominent in the real world, break ineffectual social constructs, and contribute generously towards a sustainable future.

Based on a study by Marks (2000) on student engagement in instructional activity: Patterns in the elementary,

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middle, and high school years in the United States of America, innovation in education is not just restricted to the traditional pedagogical methods anymore but the introduction of the modern Competency Based Curriculum to make students more innovative, practical rather than theoretical. In the implementation of a Competency-Based Curriculum, various tools, strategies, and resources help teachers build structured and interactive teaching plans that cater to the needs of diverse learners in a classroom. Personalized learning and differentiated opportunities for students due to new innovative practices are key components that prepare them for the global, competitive workforce of the 21st century. In this digital age, students learning in such engaged and advanced classrooms can potentially retain more information and process it at a much deeper level.
The study aims to establish a competency-based curriculum on students' innovativeness in selected government-aided secondary schools of Wakiso District, Uganda.

Methodology

Research Design

A cross-sectional descriptive research design was applied in this research because it involves analyzing information about a specific population within a specific period or phenomenon (Creswell, 2015). This study also applied both quantitative and qualitative research approaches whereby quantitative

Research Population

There was a total of 27 public secondary schools in Wakiso District. However, this study sought to target a total of 10 public secondary schools in the District. The 10 schools were arrived at based on a serialization procedure, keeping in mind that they were public schools located in different areas within the District and of mixed gender of both boys and girls. The study targeted head teachers, class teachers of seniors 1, 2, and 3 as well as 12 students in each of the schools.

Study Sample size

In this study, a total of 10 schools out of 27 were considered as the unit of analysis whereby 10 head teachers (1 from each of the 10 targeted schools), 30 class teachers (specifically class teachers of Senior 1, 2, and 3 in each of the targeted schools), and 120 students (12 students from each of the targeted schools) were considered as the unit of inquiry. A snowball sampling technique was used in selecting the students and teacher respondents since it targeted respondents of similar characteristics (under CBC). Therefore, the total study, target, and sample size population was 160 respondents.

Table 1: Population of the Study

Category	Population	Sample Size	Sampling Procedure
Head Teachers	27	10	Purposive
Class Teachers	30	30	Purposive
Students	120	120	Purposive
Total	**177**	**160**	**Purposive**

Sampling Techniques

Based on the nature of the respondents, this research used a Purposive sampling technique in selecting the head teachers, class teachers, and student respondents.

Purposive Sampling

Amin (2005) explains that a convenience sampling technique is a procedure that allows those who are available and willing to participate in the study by answering the tools of data collection. This type of sampling does not force anyone to participate in the study and only those who were available in the targeted public secondary schools during the day of data collection, and signed the consent form were given a chance to participate in this study.

Tools Used

The research used a questionnaire as the main method and instrument of data collection to provide quantitative data from the class teacher and student respondents. In addition, the researcher made use of a key informant interview guide to collect qualitative data from the head teachers of the 10 targeted secondary schools. According to Creswell (2015), it is appropriate to use a questionnaire for data collection because it is time and cost-effective. Creswell (2015) states that many instruments of data collection were used to collect data from the field to answer study objectives. This researcher therefore considered the use of a self-administered questionnaire to help in collecting data from the class teachers and students. The study also used a face-to-face interview to collect data from the head teachers.

Quality Control

For the quality of data achieved, the researcher subjected the questionnaire and the interview to a validity and reliability analysis.

Reliability

To ensure that the questionnaire was reliable, the researcher carried out a pilot study on some school class teachers in another working environment to ascertain the reliability of the research instrument or tool. The pilot study questionnaires were analyzed using IBM version 26 to determine the Cronbach's Alpha confidence or reliability scale whereby the minimum recommended value is 0.7 or above. As illustrated in Table 3.2, the questionnaires were reliable at a reliability analysis scale of 0.802.

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Table 2: Reliability Test

Cronbach's Alpha	No of Items
0.802	24

n=25, Source: Primary Data from Piloted schools in Luwero District (2023)

Validity

To ensure that the questionnaire and the interview schedule were valid, the researcher formulated the study-specific objectives. After doing so, the researcher involved the supervisors and other experts in the field of education and curriculum management to review if the items (questions) in the instruments were answering the specific study objectives. Amin (2005) states that a research instrument is determined through expert judgment, whereby the minimum recommended CVI of 0.7. Therefore, as illustrated in the workings underneath, the questionnaire v of 0917.

$$Content\ Validity\ Index\ VI) = \frac{Numberofitemsrelevant}{Totalnumberofitemsinthequestionnaire} Content\ VVI) = \frac{22}{24} Content\ Validity\ Index\ (CVI) = 0.917$$

Data Collection

After the approval of the dissertation, the researcher was availed with an introduction letter by the University introducing him as a student of TEAM UNIVERSITY. The researcher then presented the letter to the District Education Officer who authorized him to access the respondents (head teachers, class teachers, and students) in Wakiso District, who were required to provide the researcher with an acceptance letter permitting him to interact and collect data from the respondents in the targeted secondary schools. Then the researcher made appointments with the head teachers on specific days to collect data. The researcher collected data from each school on one specific day meaning that the process of data collection took a total of 10 days (one day for each school). Data from each school was collected concurrently with the interview schedule of the HM, class teachers, and students. Thus, the researcher visited the school in the morning, interviewed the head teacher then distributed the questionnaires to the class teachers and students on the same day.

Data Analysis

The raw data from the field was analyzed using IBM statistics (SPSS Version 26) because it is suitable and has several statistical and mathematical functions. The raw data collected using a questionnaire was analyzed descriptively through descriptive statistics and presented in tables and graphs of frequencies, percentages, mean, and standard deviations. To establish the influence of the independent variable on the dependent variable, the researcher subjected the data to Pearson's correlation moments as well as multiple regression analysis.

The qualitative data collected from the key informant interview schedule was analyzed through thematic analysis or narration approach where the directors' views were presented as quotes or italics.

Ethical Considerations

Just like any other profession, researchers are required to observe research ethics which include confidentiality and privacy of the respondents. In this study, therefore, the researcher requested the respondents to consent by signing the consent form. Then the researcher treated respondents' data with uttermost privacy and confidentiality by ensuring that individual respondents' views were not disclosed and that the information was only used for academic purposes. In addition, to hide the respondents' identity, the research only used pseudonyms to represent respondents' names.

Results

Profile of the Respondents

The study addressed respondents' demographic information in terms of gender, age, job experience, academic levels of teachers and head teachers, and class of the students.

Table 3: Profile of Student Respondents

		Frequency	Percent
Gender	Boys	54	45.0
	Girls	66	55.0
Age	10-15 years	61	50.8
	16-20 years	59	49.2
Students' current class	S1	40	33.3
	S2	40	33.3
	S3	40	33.3

N=120, Source; Primary data from the field by the researcher (2023)

Table 3/fig 3 presents information on student respondents' demographic information in terms of gender, age, and class.

Gender of Student Respondents

Findings indicate that the majority 66(55%) of the students who participated in this study were girls while 54(45%) were boys. This shows the dominance of girls in this study and this can be explained by the fact that most of the girls were sampled and consented more to the study than boys. However, both boys and girls were involved in the study and this eliminated the problem of gender biases in data collection.

Age of the Student Respondents

Findings in Table 3 indicate that 61 (51%) of the student respondents were aged between 10-15 years, while nearly half 59(49%) were aged between 16-20 years of age. This shows the dominance of students under 20 years of age and this can be explained by the fact that this is the normal age range for secondary school students in Uganda.

Student Respondents' Current Class

Findings indicate that there was an equal representation of S1, S2, and S3 students in the study at an average representation of 40 (33.3%) in each of the targeted classes. This shows that each class targeted in the study and currently implementing CBC was represented in the study and hence there was no bias.

Table 4.: Profile of Teacher Respondents

		Frequency (f)	Percent (%)
Gender	Male	17	56.7
	Female	13	43.3
Age	18-23 years	1	3.3
	24-29 years	6	20.0
	30-35 years	19	63.3
	36 and above years	4	13.3
Job Experience	Less than 3 years	1	3.3
	3-6 years	9	30.0
	7-10 years	17	56.7
	11 and above years	3	10.0
Teacher academic level	Diploma	3	10.0
	Bachelors	25	83.3
	Masters	2	6.6

Table 4 presents empirical information on the demographic information of teacher respondents in terms of gender, age, and job experience.

Gender of the Teacher Respondents

Findings in Table 4 show that the majority of 17 (57%) of the class teachers were male while 13(43%) were female. This shows the dominance of male class teachers' involvement in this study, though a significant number of female class teachers were also involved in the study indicating that there was no gender-related bias in the data collection from the class teachers of each of the targeted secondary schools.

Age of the Teacher Respondents

Findings in Table 4 show that the majority of 19 (63%) of the class teachers were aged 30-35 years, while fewer 1(3%) were aged 18-23 years. However, it was also observed that almost all age brackets were represented in this study.

Job Experience of the Teacher Respondents

Findings in Table 4 show that the majority 17(57%) of the teacher respondents had 7-10 years of experience with fewer than 1 (3%) having less than 3 years experience in the teaching profession. This shows that most of the class teachers in the targeted secondary schools were mature enough and highly experienced and this translated to quality data for the study based on their knowledge and experience in the teaching profession.

Teacher academic level

Findings in Table 4 indicate that the majority 25(83.3%) of the teachers were bachelors holders and 3(10%) were diploma holders while the 2(6.6%) were masters holders. This means that all the teachers were professional and qualified enough to respond to the questions required for this study.

Competency-based curriculum on student innovativeness

The study was to examine how a competency-based curriculum has promoted students' innovativeness in selected government-aided secondary schools of Wakiso District, Uganda. The description was assessed based on the computed 5-mean range Likert scale as follows; 1.00-1.79 (Very low), (1.80-2.59 (low), 2.60-3.39 (moderate), (3.40-4.19 (high) and, 4.20-5.00 (very high). A standard deviation of >1 indicated that the respondents were homogeneous and hence able to respond with a minimal variance.

Table 5: Competency-Based Curriculum Has Promoted Students' Innovativeness

Class Teachers' Views on CBC and Students Innovativeness	**Mean**	**S.D**
Because of the CBC program, my students have developed new problem-solving abilities.	3.57	.817
CBC has made my students understand challenges that are prominent in the real world	3.60	.968
CBC has made my students competent in the use of technological gadgets like computers.	3.50	.952
My students can come up with alternative ways of addressing their problems	3.57	.828
Aggregate Mean and S.D	**3.56**	**0.891**
Students Views on CBCI and Students' Innovativeness	**Mean**	**Std. D**
The CBC program has made me develop new problem-solving abilities.	3.66	.874
CBC has made me understand challenges that are prominent in the real world	3.74	.939
CBC has made me to be more competent in the use of technological gadgets like computers.	3.69	.786
CBC has made me to be able to innovate alternative ways of addressing problems	3.60	.893
Aggregate Mean and S.D	**3.67**	**0.873**
Grand Mean and S.D	**3.62**	**0.882**

Table 5 presents empirical information on how competency-based curriculum implementation has promoted students' innovativeness in selected government-aided secondary schools of Wakiso District, Uganda, based on the views of both the class teachers and the student respondents.

Class Teachers' Views on CBC and Students' Innovativeness

Findings in Table 5 show that class teachers generally agreed that because of the CBC program, their students have developed new problem-solving abilities, CBC has made their students understand challenges that are prominent in the real world, CBC has made their students competent in the use of technological gadgets like computer, and that their students can come up with alternative ways of addressing their problems. The results imply that a competency-based curriculum has highly promoted (or highly promotes) students' innovativeness in selected government-aided secondary schools of Wakiso District, Uganda (Agg mean=3.56, S. D=0.891). This means that class teachers are highly satisfied with the contributions derived from CBC in terms of promoting students' innovativeness.

Students Views on CBC and Students' Innovativeness

Findings in Table 5 show that S1, S2, and S3 students generally agreed that the CBC program has made them develop new problem-solving abilities, CBC has made them understand challenges that are prominent in the real world, CBC has made them more competent in the use of technological gadgets like computer, and CBC has made them be able to innovate alternative ways of addressing problems. The results imply that a competency-based curriculum has highly promoted (or highly promotes) students' innovativeness in selected government-aided secondary schools of Wakiso District, Uganda (Aggr mean=3.67, S. D=0.873). This means that students are highly satisfied with the contributions derived from CBC in terms of promoting student's innovativeness.

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https://doi.org/10.51168/sjeducation.v1i1.6
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Table 6: Correlation between competency-based curriculum and students' competency in innovativeness in selected government-aided secondary schools of Wakiso District, Uganda.

Correlations			
		CBC Implementation	Students' competency in innovativeness
CBC Implementation	Pearson Correlation	1	.618*
	Sig. (2-tailed)		.001
	N	30	30
Students' competency in innovativeness	Pearson Correlation	.618**	1
	Sig. (2-tailed)	.001	
	N	30	30

**. Correlation is significant at the 0.01 level (2-tailed).

Table 6 presents correlational results to determine the relationship between competency-based curriculum and students' competency in innovativeness in selected government-aided secondary schools of Wakiso District, Uganda. Findings show that there is a high positive linear relationship between competency-based curriculum and students' competency in innovativeness in selected government-aided secondary schools of Wakiso District, Uganda at a correlational coefficient r=0.618*, P value 0.000<0.05). About government-aided secondary schools in Wakiso District, the results mean that, when the CBC improves, students' competency level in terms of innovativeness improves as well, and when the CBC fails, students' competency in terms of innovativeness declines or fails as well. Therefore, since the CBC is positively achieved, students' competency in terms of innovativeness is also positively experienced and achieved in selected government-aided secondary schools of Wakiso District, Uganda.

The qualitative data derived from the key informant interview supports the quantitative findings by indicating a positive influence of competency-based curriculum implementation on students' innovativeness in selected government-aided secondary schools of Wakiso District, Uganda. The interviewed head teachers felt that because of the competency-based curriculum implementation, their students have developed new problem-solving abilities, understand challenges that are prominent in the real world, are more competent in technological innovations and the use of technological gadgets like computers, with the ability to come up with alternative ways of addressing their problems. Some of the key views given by the head teachers included the example of one head teacher who said;

"…as the head teacher of this school, I am surprised by the ability in which the students in S1, S2, and S3 have developed immense ability to solve their problems. They can work as a group and come up with a solution to a problem that is affecting them. They can improvise and ensure that a certain problem in class or the sporting field is addressed without directly involving the teachers…" **(Source: KI 1).**

Future more, another head teacher has to say;

"…the CBC implementation is a success to me and my school because today my students undertaking the CBC program are more informed about the real world problems and when you have a discussion with them you realize that they have their self-thought solutions based on their environment on how to address such challenges without necessary copying or addressing them the way other countries in the world have addressed them…" **(Source: KI 4).**

Also, another head teacher gave information as;

"…in the past years, we have students who were not competent enough in the application and applicability of technological devices. Currently, the CBC program is producing students who can operate, repair, maintain, and provide guidance on how to use a specific technological gadget such as a computer, projector, camera, flash disc, etcetera…" **(Source: KI 7).**

It was also supported by another headteacher who;

"…when you are instructing the current group of students under the CBC program about a certain problem and how to solve or address it, it is very encouraging that you will get as many alternative ways to solve the problem from the students. The CBC program has provided students with the ability and opportunity to give, or say their mind and how they think some things should be addressed and as a result problem-solving alternatives are many…" **(Source: KI 8).**

It was also emphasized by another head teacher that;

"…the level of creativity demonstrated by my students under the CBC program is high…". "…my students are becoming good innovators in the agricultural sector coming up with different strategies of addressing food security through technology…" **(Source: KI 10).**

CBC has made their students competent in the use of technological gadgets like computers, and their students can come up with alternative ways of addressing their problems

In conclusion, objective 2 results indicate a high grand mean of 3.62 and standard deviation of 0.882 which imply that a competency-based curriculum has highly promoted or highly promotes students' innovativeness in selected government-aided secondary schools of Wakiso District, Uganda.

Discussion

Based on the study results, competency-based curriculum implementation has highly promoted or highly promoted students' innovativeness in selected government-aided secondary schools of Wakiso District, Uganda. Through a

competency-based curriculum, students become more innovative and creative. When students are instructed based on the CBC, they are more likely to develop new problem-solving abilities, understand challenges that are prominent in the real world, become more competent in the use of technological gadgets like computers, and develop the ability to come up with alternative ways of addressing their problems. Therefore, a competency-based curriculum highly promotes students' innovativeness in selected government-aided secondary schools of Wakiso District, Uganda. Thus a lot of support should be given to such schools to have competent students who will help in the development of the country. These findings are also supported by previous study results including that of Mlaudzi (2009) on the implementation of the South African national curriculum who argues that a Competency Based Curriculum is the best-proposed strategy for making and promoting student innovativeness. It is a fact that it is quintessential to upgrade and improve educating and teaching-learning methods according to the changing dynamics of the education industry. Technology is the most integral part of the equation when it comes to implementing active learning. Hence, innovative pedagogical methods used in the subject matter curriculum are essential to constantly drive the wheel of learning. It helps learners develop problem-solving abilities, understand and solve challenges that are prominent in the real world, break ineffectual social constructs, and contribute generously towards a sustainable future.

Conclusion

It was confirmed that a competency-based curriculum highly promotes students' innovativeness in selected government-aided secondary schools of Wakiso District, Uganda.

Recommendation

In addition, the school administration should work hard towards ensuring that they offer necessary support to teachers, not only that but the teachers should be involved so much in the innovativeness of the students to give them an upper hand in whichever invention they may have come up with in the CBC. In addition, there should be rewards for best-performing teachers and students as a form of motivation to enhance the CBC in secondary schools.

Acknowledgment

Above all, I would like to thank the Almighty God for the gift of life, good health, and the intelligence to write this dissertation. Secondly, I would like to express my sincere appreciation and thanks to all those who have supported me in the successful progress through the completion of this research dissertation. Special gratitude goes to TEAM University and my supervisor for their professional assistance, dedication, and patience. Furthermore, another vote of thanks goes to the respondents in the targeted secondary schools for their consent and willingness to provide data for this study. God bless everyone.

List of Abbreviations

SPSS: Statistical Package for Social Sciences
CVI: Content Validity Index
CBC: Competency Based Curriculum
NCDC: National Curriculum Development Centre
BC: Before Christ
MKO: More Knowledgeable Other
ZPD: Zone of Proximal Development
BMP: Bulawayo Metropolitan Province

Source of funding

The study was not funded.

Conflict of interest

The author had no conflict of interest.

Author Biography

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SJ Education Research Africa
Vol. 1 No. 4 (2024): April 2024 Issue
https://doi.org/10.51168/sjeducation.v1i1.6
Original Article

Publisher details:

SJC PUBLISHERS COMPANY LIMITED

Category: Non-Government & Non-profit Organisation
Contact: +256775434261(WhatsApp)
Email: admin@sjpublisher.org, info@sjpublisher.org or studentsjournal2020@gmail.com
Website: https://sjpublisher.org
Location: Wisdom Centre Annex, P.O. BOX. 113407 Wakiso, Uganda, East Africa.