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The Impact of Students' Teamwork and the Development of 21st Century Skills: The Case of Some Selected Secondary Schools in Mfoundi Division

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ARTICLE INFORMATION	ABSTRACT
Article history: Published: February 2026 **Keywords:** Collaboration Knowledge sharing Communication Teamwork 21st-century skills	The study investigates the impact of student teamwork and the development of the 21st century on some selected secondary schools in Mfoundi Division. The problem of this study stems from the fact that many teachers often place students in teams with little or no guidance on how to properly function. Thus, teachers are ignorant with little understanding of teamwork and 21st-century skills. The following objectives were postulated: (i) to assess students' collaboration and the development of 21st-century skills in some selected secondary schools in Mfoundi Division. (ii) To investigate how students' knowledge sharing and the development of 21st-century skills are reflected in some selected secondary schools in Mfoundi Division. (iii) To evaluate the effect of students' communication and the development of 21st-century skills in some secondary schools in Mfoundi Division. A descriptive survey design using percentages, frequency, the mean, and standard deviation was used for data analysis using SPSS version 25 to derive these results. A Likert Scale Questionnaire was used. The Hypotheses were also tested using simple linear regression. Student collaboration has a strong positive predictive power (Beta = 0.984) on the development of 21st-century skills, and this is statistically significant at 0.00 (p = 0.00). Knowledge sharing has a strong positive predictive power (Beta = 0.977) on the development of the 21st-century skills, and this is statistically significant at 0.00 (p = 0.00). Students' communication has a strong predictive power (Beta = 0.959) on the development of 21st-century skills, and this is statistically significant at .000. (p = 0.00)The findings of the study revealed that student teamwork has a positive contribution and impact on the development of 21st-century skills.

1. Introduction

With globalisation and rapid advances in information and communication technology, organisations as well as schools are pressured to search for methods that will improve organisational and educational performance and maximise goal achievement. There is an increasingly urgent need for a country's human capital that meets the current needs of the organisation, institutions, and job market. Thus, soft skills have become an important element in producing efficient and excellent human resources. There are many more skills that are being developed in the world today to meet up with its varied school milieu, and improve learners' abilities to be problem solvers in the 21st century. It is observed that teamwork is one of the best methods of achieving this goal.

1.1 Statement of the problem

The development of 21st-century skills such as collaboration, communication, critical thinking, and creativity has become a central goal of contemporary education systems worldwide (Trilling & Fadel, 2009). Among the pedagogical approaches promoted to foster these skills, students' teamwork has been widely recognized as a powerful instructional strategy that enhances active learning and social interaction (Johnson, Johnson, & Smith, 2014). However, despite policy reforms and curriculum recommendations encouraging collaborative learning in secondary schools, evidence suggests that teamwork is often poorly implemented or underutilized in many classroom settings, particularly in developing contexts (UNESCO, 2015). In Cameroon, and specifically in secondary schools within the Mfoundi Division, teaching practices remain largely teacher-centered, with limited structured opportunities for students to engage in meaningful teamwork activities (Tambo, 2012). This situation raises concerns about students' preparedness for the demands of the modern workforce, which increasingly values teamwork and transferable skills over rote knowledge (OECD, 2018). Moreover, while several studies have examined teamwork and skill development in general terms, there is a noticeable lack of empirical research focusing on how students' teamwork specifically contributes to the development of 21st-century skills in Cameroonian secondary schools. The absence of localized data makes it difficult for educators and policymakers to design effective instructional strategies suited to the learners' socio-educational context. Consequently, this study seeks to investigate the impact of students' teamwork on the development of 21st-century skills in selected secondary schools in the Mfoundi Division, with the aim of providing evidence-based insights to improve teaching and learning practices.

1.2 Research question

❖ What is the link between students' collaboration and the development of 21st-century skills in some selected secondary schools in the Mfoundi Division?

❖ To what extent do knowledge sharing and the development of 21st-century skills impact some selected secondary schools in Mfoundi Division?

❖ What is the link between students' communication and the development of 21st-century skills in some selected secondary schools in Mfoundi Division?

1.3 Research Methodology

The sampling technique is referred to as the process of selecting several individuals from a population, preferably in such a way that individuals are selected Amin (2005). The sample size of 167 participants was determined using the Krejce and Morgan Table (1970). A Simple Random Sampling Technique, which was used to select the sample schools. According to Osula (1991), random sampling is the method of drawing a portion of a population so that each member of that population has an equal chance, and it also ensures there is fairness and equality in the distribution of the questionnaires. The schools were drawn from the public secondary schools in Yaoundé 1 sub-division. A Likert scale questionnaire was used for the data collection process. A Cronbach's alpha coefient 0.962 proved the instrument to be reliable for the study. The study adopted a quantitative research design.

2. Findings

The findings of the study were presented according to the research questions. For each case, the frequencies, percentages, weighted mean, and standard deviation were used.

Table 1 : Students' Collaboration

Statement	Strongly Agree	Agree	disagree	Strongly Disagree	Mean	Standard Deviation
	Frequency and Percentage; N=167					
	F(%)	F(%)	F(%)	F(%)		
1 Students dialogue with other students.	52(31.1)	101(60.5)	9(5.4)	5(3)	3.24	0.670
2 The teacher provide opportunities to actively interact with students in small groups.	45(26.9)	105(62.9)	7(4.2)	10(6)	3.10	0.737
3 We are engaged in meaningful discussions during classroom time.	30(18)	102(61.1)	16(9.6)	19(11.4)	2.85	0.845
4 The teacher provides students opportunities to interact but not necessarily collaborate.	25(15)	50(29.9)	40(24)	52(31.1)	2.28	1.065
5 Students are engaged in learning activities such as reading, using software programs like Microsoft word and social media facilities.	27(16.2)	100(59.9)	30(18)	10(6)	2.86	0.752
6 During group work, we are just about 4 to 5 students in a group.	55(32.9)	70(41.9)	10(6)	32(19.2)	2.88	1.072
7 We are given tasks to enable us learn and better explain concepts.	60(35.9)	65(38.9)	31(18.6)	11(6.6)	3.05	0.901
8 We usually corporate during teaching and learning.	73(43.7)	64(38.3)	19(11.4)	11(6.6)	3.19	0.884
9 We have and use technological tools that makes learning easier and better.	45(26.9)	45(26.9)	52(31.1)	25(15)	2.97	1.034
Overall total					2.93	0.884

Source: Fieldwork, 2022

The above table represents the respondents' view of students' collaboration. The first item, which was to determine if students dialogue with each other, had 101 carrying 60.5% agreeing. Teachers provide opportunities to actively interact with students in small groups. 45 students strongly agreed with a percentage rate of (62.9%), and 105 stood for agreeing with the statement. We are engaged in meaningful discussions during classroom time, respondents disagreed 52 (31.1%). Students are engaged in learning activities such as reading, and using software programs like Microsoft Word and social media facilities 100 (59.9%) agree. During group work, we are just about 4 to 5 students in a group; 70 (41.9%) agree. We are given tasks to enable us to learn and better explain concepts. 65(38.9%)agree. We usually cooperate during teaching and learning, 73 (43.7%) strongly agreed. We have and use technological tools that make learning easier and better. 52 (31.1%) disagreed.

Our grand mean of 2.93 is above our cutoff mean of 2.5, respondent strongly agree that Students' collaboration helps the development of 21st-century skills.

Table 2: Students' knowledge sharing

Statement		Strongly Agree	Agree	disagree	Strongly Disagree	Mean	Standard Deviation
		Frequency and Percentage; N=167					
		F(%)	F(%)	F(%)	F(%)		
10	During lessons, there is a classroom discussion that brings about innovation and development.	67(40.1)	55(32.9)	25(15)	20(12)	3.01	1.018
11	There is a sharing of ideas amongst peers in the teaching/learning process.	40(24)	102(61.1)	15(9)	10(6)	3.02	0.756
12	The teacher gives everyone the opportunity to share his or her idea in class.	92(55.1)	60(35.9)	10(6)	5(3)	3.43	0.740
13	My classmates are not selfish with their ideas during lessons	35(21)	62(37.1)	50(29.9)	20(12)	2.67	0.941
	Overall total					3.03	0.86

Source: Field work 2022

The table above contains respondents' views on knowledge sharing. The first item looked at how classroom discussion brings about innovation and development during lessons. 67 students responded strongly agree 40%, There is sharing of ideas amongst peers in the teaching/learning process 105 (61.1%) of respondents agree, The teacher allows everyone to share his or her idea in class 92 (55.1%) of respondents strongly agree, My classmates are not selfish with their ideas during lessons 63 (37.1%) of respondent agree.

Our grand mean of 3.03 is above our cutoff mean of 2.5, respondent strongly agree that Students' knowledge sharing helps in the development of 21st-century skills.

Table:3 Students' Communication

Statement		Strongly Agree	Agree	disagree	Strongly Disagree	Mean	Standard Deviation
		Frequency and Percentage; N=167					
		F(%)	F(%)	F(%)	F(%)		
14	During the teaching and learning process, we talk more than the teacher does	9(5.4)	31(18.6)	67(40.1))	60(35.9)	3.07	0.872
15	We learn better during lessons when we discuss with each other	35(21)	72(43.1)	55(32.9)	5(3)	2.82	0.794
16	The teacher gives us the opportunity to freely express ourselves in class	35(21)	102(61.1)	20(12)	10(6)	2.97	0.756
17	Students have the opportunity to explain ideas taught in their own way.	10(6)	87(52.1)	50(29.9)	20(12.2)	2.52	0.783
18	Students' variety of ideas is accepted in a class by teachers	15(9)	60(35.9)	64(37.4)	28(16.8)	2.35	0.868
	Overall total					2.75	0.81

Source: Fieldwork,2022

From the table above, we can observe that it represents the respondent's view on students' communication skills. During the teaching and learning process, we talk more than the teacher does 67 (40.1%) of respondents disagree, We learn better during lessons when we discuss with each other 74 (43.1%) of respondents agree; The teacher allows us to freely express ourselves in

class 102 (61.1%) of respondent agree; Students have the opportunity to explain ideas taught in their own way 87 (52.1%); Students variety of ideas is accepted in a class by teachers 64, (37.4%) of respondent disagree.

Our grand mean of 2.74 is above our cutoff mean of 2.5, respondent strongly agree that Students' communication is in the development of 21st-century skills.

Table 4:Dependent variable

Statement		Strongly Agree	Agree	disagree	Strongly Disagree	Mean	Standard Deviation
		Frequency and Percentage; N=167					
		F(%)	F(%)	F(%)	F(%)		
19	Learning skills	75(44.9)	75(44.9)	12(7.2)	5(3)	3.31	0.737
20	Literacy skills	35(21)	100(59.9)	18(10.8)	14(8.4)	2.93	0.808
21	Life skills	60(35.9)	62(37.1)	33(19.8)	12(7.2)	3.01	0.921
	Overall total					3.01	0.822

Source: Fieldwork,2022

Table 12 above shows information about students' knowledge of learning skills. 75 (44.9%) students strongly agree. In literacy skills, 100 (59.9%) respondents agreed, and in life skills, 63 (37.1%) respondents agreed with the statement.

Inferential test of Hypothesis using simple linear regression

Hypothesis H01: There is no significant relationship between students' collaboration and the development of 21st-century skills in some selected secondary schools in Mfoundi division.

Table 5: Model Summary of students' collaboration and the development of the 21st century

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.984[a]	0.968	0.968	0.140

a. Predictors: (Constant), Students' Collaboration

The regression model predicted 96.8% change in 21st century skills, which is accounted for by students' collaboration. The scatterplot showed a strong positive linear relationship between student collaboration and 21st-century skills development. which was confirmed with a Pearson's correlation coefficient of r = 0.965. The model was a good fit for the data ($F_{(1, 156)}$ = 4986.095, $p < 0.000$).

Table 6 : ANOVA of the relationship between the students' collaboration and the development of the 21st century

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	97.321	1	97.321	4986.095	0.000[b]
	Residual	3.221	165	0.020		
	Total	100.542	166			

a. Dependent Variable: 21st Century Skills

b. Predictors: (Constant), Students' Collaboration

The relationship between the students' collaboration and the development of the 21st century is very strong. Indicate the overall regression model statistically and significantly, and predict the outcome value. The model was a good fit for the data ($F_{(1, 156)}$ = 4986.095, $p < .000$).

Table 7: Coefficient

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-0.050	0.030		-1.671	0.097
	Students Collaboration	0.933	0.013	0.984	70.612	0.000

The regression model shows a significant relationship between students' collaboration as a predictor of 21st century skill development (t=70.612, p < 0.000). The slope coefficient for students' collaboration is 0.984, so 21st-century skills increase by a factor of 0.984.

Hypothesis H02: Knowledge Sharing has no significant impact on the development of 21st-century skills in some selected secondary schools.

Table 8: Model Summary of knowledge sharing and the development of the 21st century

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.977[a]	0.954	0.953	0.168

a. Predictors: (Constant), Knowledge Sharing

The regression model predicted 95.4% change in 21st century skills, is accounted by knowledge sharing. The scatterplot showed a strong positive linear relationship between knowledge sharing and 21st-century skills development. which was confirmed with a Pearson's correlation coefficient of r = 0.83. The model was a good fit for the data (F (1, 156) = 3402.182, p <0 .000).

Table 9: ANOVA of the relationship between knowledge sharing and the development of the 21st century

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	95.891	1	95.891	3402.183	0.000[b]
	Residual	4.651	165	0.028		
	Total	100.542	166			

a. Dependent Variable: 21st Century Skills

b. Predictors: (Constant), Knowledge Sharing

The relationship between knowledge sharing and the development of the 21st century is very strong. Indicate the overall regression model statistically and significantly, and predict the outcome value. The model was a good fit for the data (F (1, 156) = 3402.182, p < 0.000).

Table 10: Coefficient of relationship between knowledge sharing and the development of the 21st century

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.074	0.034		2.159	0.032
	Knowledge Sharing	0.935	0.016	.977	58.328	0.000

a. Dependent Variable: 21st Century Skills

The regression model shows a significant relationship between knowledge sharing as a predictor of 21st century skill development (t=58.328, p < 0.000). The slope coefficient for knowledge sharing is 0.977, so 21st-century skills increase by a factor of 0.977.
HypothesisH03: There is no relationship between students' communication and the development of 21st-century skills.

Table 11: Model Summary of students communicaton and the development of the 21st century

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.935[a]	0.873	0.873	0.278

a. Predictors: (Constant), Students' Communication

The regression model predicted 87.3% change in 21st century skills, which is accounted for by students' communication. The scatterplot showed a strong positive linear relationship between students' communication and 21st-century skills development. which was confirmed with a Pearson's correlation coefficient of r = 0.85. The model was a good fit for the data (F (1, 156) = 1138.837, p < 0.000)

Table 12: ANOVA relationship between the students communicaton and the development of the 21st century

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	87.818	1	87.818	1138.837	0.000[b]
	Residual	12.723	165	0.077		
	Total	100.542	166			

a. Dependent Variable: 21st Century Skills

b. Predictors: (Constant), Students' Communication

The relationship between the students communicaton and the development of the 21st century is very strong. Indicate the overall regression model statistically and significantly, and predict the outcome value. The model was a good fit for the data (F (1, 156) = 3402.182, p < .000).

Table 13: Coefficient of relationship between the students communicaton and the development of the 21st century

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-0.464	0.074		-6.305	0.000
	Students Communication	0.959	0.028	0.935	33.747	0.000

a. Dependent Variable: 21st Century Skills

The regression model shows a significant relationship between student communication as a predictor of 21st century skill development (t=33.747,p < 0.000). The slope coefficient for students ccommunicaation 0.977, so 21st century skills increase by a factor of 0.935

2.1 Discussion of finding

From the findings, the first hypothesis stated that "Students' Collaboration has a statistically significant influence on the development of 21st-century skills in some selected secondary schools in Mfoundi Division. The researcher verified this hypothesis by using a simple linear regression technique based on certain conditions that described the data. The results indicated that students' collaboration and the development of 21st-century skills were significantly correlated. This relationship was seen to be significant because it is a good sign of 0.05. This means that students' collaboration has a positive effect on the development of 21st-century skills. It is evident that students' collaboration has a positive significant effect on the development of 21st-century skills.

Hakkinen et al. (2017) investigated the educational pedagogical framework for twenty-first-century learning practices. A finding revealed that collaboration was an essential aspect of learning. When students work in groups, they improve their performance on tasks (Hakkinen et al., Zhu, 2021). Therefore, the results showed that students' collaboration has a significant impact on their performance. Students' collaboration also has a significant impact on the development of 21st-century skills. Thus, students' collaboration has generally been accepted as a necessary skill for achieving meaningful and effective results. This is also supported by Rusdin and Ali (2019) that students were satisfied and had a high level of interest in activities based on collaborative learning in classes.

It was concluded that the independent variable 'students' communication' has a strong predictive power (Beta = .0959) on the dependent variable 'the development of 21st-century skills and this is statistically significant at .000. (p = 0.00)

The second hypothesis depicts that knowledge sharing has a statistically significant influence on the development of the 21st century in some selected secondary schools in Mfoundi division. The independent variable 'knowledge sharing' has a strong positive predictive power (Beta = .977) on the dependent variable 'the development of the 21st-century skills and this is statistically significant at 0.00 (p = 0.00).

Lastly Students' communication has a statistically significant influence on the development of 21st-century skills in some selected secondary schools in Mfoundi division. Communication is seen as one of the most critical aspects of social success (Ravitz, 2014), and solving problems using information and communication technology. Students were satisfied, and their grades improved. As a result, students' communication learning style significantly influences students' effectiveness (Hadiyanto et al., 2021). Another finding revealed that interaction and communication amongst learners significantly impact the learners more. Thus, students' communication has a significant impact on the development of 21st-century skills.

The independent variable 'students' communication' has a strong predictive power (Beta = .959) on the dependent variable 'the development of 21st-century skills and this is statistically significant at .000. (p = 0.00)

3. Recommendations and conclusion

It is believed that this study will enable the government to look into teamwork. This could be done by the government working in collaboration with schools and curriculum experts. Here, they will take into consideration that the appropriate team strategies are put in place in the curriculum and teachers are trained constantly to meet the current changes in the modern trends of technology and education, which involves 21st-century skills that should be fitted in the curriculum at the level of secondary schools.

Statistics from this study show that students' collaboration, knowledge sharing, and communication have a significant relationship with the development of 21st-century skills. We, therefore, recommend that administrators have a proper follow-up of teachers to attend seminars and training, especially training geared towards the development of 21st-century skills. Teachers should also go through training that will enable them better assist the students in attaining teamwork and 21st-century skills. Teamwork plays an essential part in the development of 21st century skills.

Disclosure of conflict of interest

The author declares that there is no conflict of interest.

Statement of informed consent

All participants involved in this study were fully informed about the procedure and the scope of the study entitled «The impact of students' teamwork and the development of 21st century skills: the case of some selected secondary schools in Mfoundi division » and voluntarily participated in the study.

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