# NEXUS BETWEEN STUDENTS', TEACHERS' AND SCHOOL SYSTEM EFFECTIVENESS:  CONSTRUCTION AND FACTORIAL VALIDITY OF A MEASURING INSTRUMENT

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**ABSTRACT:** *This study explored the nexus between teachers', students', and school system effectiveness in Cross River State, following a factorial research design. One null hypothesis was formulated to guide the study. Convenient sampling technique aided in selecting a sample of 271 principals and 329 teachers from a population of 271 principals and 4,336 teachers respectively. "Teachers', Students' and School System Effectiveness Scale (TSSSES)" was constructed. The validity of the instrument was established through Factor analyses (EFA and CFA) with Promax rotation and eigenvalues greater than one. Cronbach Alpha yielded reliability coefficients of .982, .983, .930, and .941 obtained for teachers', students', school system effectiveness, and the overall instrument. The Kaiser-Meyer-Olkin measure of sampling adequacy was employed and revealed a coefficient of .960 providing sufficient evidence to conduct factor analysis. The confirmatory factor model fit determined by RMSEA (.068), CFI (.935), TLI (.931), and SRMR (.029) all indicated a good model fit for accepting the proposed model. The null hypothesis was tested at .05 level of significance using Path analysis. All the computations and analyses were aided using MS-EXCEL v2016, Stata v15, SPSS v23, and Amos v23. Findings from the study revealed, among others that, there is a significant direct and indirect parsimonious nexus between teachers' effectiveness, students' effectiveness, and school system effectiveness. It was recommended that the government at all levels should provide funds and supply public schools with good school plants such as buildings, laboratories, libraries and teaching aids towards promoting effectiveness.*

**KEYWORDS:** factorial validity, exploratory factor analysis, teachers' effectiveness, students' effectiveness, confirmatory factor analysis, school system effectiveness.

## INTRODUCTION

Schools generally, and secondary schools specifically, were established to boost the manpower of an economy, erase illiteracy, promote and sustain economic development. As the mediators, secondary schools were expected to receive inputs from the primary schools, improve them through proper training, building on their prior knowledge gained, and preparing them for not only a useful living but also as good inputs for the tertiary level of education. Only schools with a high focus and effectiveness can cope with the daunting task of shaping learners' behaviour and preparing them for the future. The overall activities that take place in the school, can be used as parameters for assessing whether a school system is effective or not (Taiwo & Ade-ajayi, 2015; Owan, 2019).

School system effectiveness refers to the extent to which every unit within a school, carry out their routine functions that can promote or hinder the attainment of set objectives (Owan, 2019). School system effectiveness implies a state where activities within every school are tailored towards students' development, school growth, and goal attainment. An effective secondary school is one that engages

in activities according to prescribed patterns, standards, and expectation (Owan, Arop, & Agunwa, 2019). Scheerens (2016) disclosed that an effective school is one with achievement orientation, high students' and teachers' expectations, quality educational leadership, consensus and cohesion among staff, curriculum quality, opportunity to learn, school climate, evaluative potential, classroom climate, effective learning time (classroom management), structured instruction, feedback/reinforcement and parental involvement, are all indicators of an effective school system.

Owan (2019) asserted also that schools with motivated teachers, positive students' academic performance, good relationship with the community, good leadership, effective school climate, goal attainment, strong administrative leadership, an orderly atmosphere, basic skills acquisition (the schools' primary purpose), capacity to divert school energy and resources to advance the school's basic purpose, instructional leadership, clear and focused mission, safe and orderly environment, climate of high expectations, frequent monitoring of student progress, positive home-school relations, and opportunities to learn. Good students' academic performance in standardized examinations, adequate leadership orientation, effective staff disposition, high school enrolment figures, good quality of leadership, high secondary school graduates' enrolment into tertiary institutions, low extent of truancy, low drop-out rates and low class- repeating figures, amongst others, are indices for judging an effective secondary school (Owan et al., 2019).

Insight has been provided as to what constitutes an effective school. It follows, therefore, that the judgment of any school depends on five major aspect – the teachers, students, principals or school leaders, the physical facilities, and the school environment. It is one thing to understand what constitutes an effective school, as it is yet another thing to measure the effectiveness of a school. Studies have reported that the rate of students' academic performance in internal and external examinations is poor, and some teachers do not discharge their teaching duties as expected, resulting in truant and inconsistent work attitudes (Okereke & Oghenetega, 2014; Ahmad, Ch, & Ayub, 2017; Owan, 2018). School enrolment statistics have also been dwindling and unstable, coupled with paltry graduates' tertiary enrolment figures of most secondary schools. Only a few secondary school graduates are able to pass the Unified Tertiary Matriculation Examinations (UTME) (Owan et al., 2019).

On the part of teachers, studies have reported that most teachers display unprofessional attitudes to work in the areas of punctuality, instructional delivery, record keeping, time management, discipline of learners (Owan & Ekpe, 2019), negligence to students, unethical behavior such as collection of bribes, giving bribes to external inspectors/supervisors, refusal to perform assigned duties, poor attitudes towards writing note of lessons, and so on (Tshiunza, Shilongo, & Bina, 2017; Arop, Ekpang, & Owan, 2018). All these attitudes displayed by school players suggests that many schools in Cross River State are ineffective. Going by the reports from studies, it becomes pertinent for an instrument to be developed that will enable researchers and scholars measure effectively the rate of teachers', students', and school system effectiveness for informed decision making. Teachers' effectiveness is the rate at which teachers are discharging their duties teaching, grooming students, and contributing their quota to the development of the teaching profession, following ethical practices (Owan, 2012).

An effective teacher has a high rate of punctuality, good time management, good academic performance of students, good relationship with other staff, respect for rules and authority, adherence to school norms, effective communication, proper record keeping, and good professional behavior (Owan, 2012). Akomolefe (2010) identified the characteristics of effective teaching to include:

attention on students achievement, quality teaching that is responsive to students' learning processes, effective and efficient learning opportunities, pedagogical practices that create cohesive learning communities, effective links between school and cultural context of the school, multiple tasks to support learning cycles, aligned curriculum goal effectively, pedagogy scaffolds feedback on students' task engagement among others. Students' effectiveness, on the other hand, refers to the degree of students' attitudes towards academic and co-curricular activities of a school, including performance in test, examination, and other forms of assessment. The manifestation of students' effectiveness is on their academic performance in examinations, task performance, and their quality after school. Given the importance of the school in promoting societal development, coupled with the reported ineffectiveness, some studies have made efforts to evaluate the association between various school effectiveness variables.

For instance, Akiri and Ugborugbo (2009) examined the influence of teachers' classroom effectiveness on students' academic performance in public secondary schools in Delta State, Nigeria. Results showed that effective teachers produced better performing students. Using Pearson Product Moment Correlation and Multiple regression Arop, Owan, and Ibor (2019) revealed that there is a significant relationship between quality of school facilities (r = .478, p< .05), quality of leadership (r = .928, p< .05) quality of supervision (r = .881, p< .05) respectively with secondary school teachers' job performance.

Oviawe (2016) found that teachers' effectiveness had an influence on student's achievement and that there was no significant difference in students' achievement due to teachers' gender. Heck (2009) discovered first, that the effectiveness of successive teachers was related to student achievement in reading and mathematics. Secondly, it was discovered that collective teacher effectiveness, as an organizational property of schools, was positively associated with achievement levels. Thirdly, the stability of the school's teaching staff and the quality of its academic organization and teaching processes were positively related to achievement levels.

Owan et al. (2019) used a path analytic approach to examine the composite interaction of supervisory and records management with secondary school system effectiveness in terms of students' academic performance, teachers' job effectiveness and principals' administrative effectiveness. Findings from the study established amongst others that supervisory management and records management practices had a significant influence on students' academic performance (F= 1183.641, p<.05), teachers' job effectiveness (F= 1465.615, p<.05), and principals' administrative effectiveness (F=3924.763, p<.05).

Owan, Nwannunu, and Madukwe (2018) investigated the problems of school management and secondary school students' academic performance in Calabar Education Zone of Cross River State. Findings from the study revealed among others that disciplinary control, classroom management, and teachers' motivation significantly influence secondary school students' academic performance respectively. A study also found a significant relationship respectively between principals' interpersonal relationship (r=0.364, p<. 05), teachers' participation in decision-making (r=0.624, p< .05) and principals' delegation of responsibilities (r = 0.538, p< .05) with teachers' job performance in secondary schools (Arop, Owan, & Madukwe, 2019).

Having reviewed the literature pertaining to this study, it was discovered that there is still a paucity of research evidence that has created a nexus between teachers, students, and school system effectiveness. This seems to be the first of its kind that will develop and validate different instruments

for measuring the construct of teachers', students', and school system effectiveness using Exploratory and Confirmatory Factor Analyses. It was based on this gap that this study was undertaken to design and validate an instrument for measuring teachers', students' and school system effectiveness including the association between the three constructs.

## Purpose of the study

The primary purpose of this study is to examine the nexus between teachers, students, and schools' effectiveness in secondary schools. However, the specific objectives of this study include:

i.        To design and validate an instrument for measuring teachers', students', and school system effectiveness.

ii.       To determine the parsimonious nexus between teachers', students' and school system effectiveness in secondary schools.

## Statement of hypothesis

$Ho_1$: There is no significant parsimonious nexus between teachers', students' and school system effectiveness in secondary schools

## METHODS

This study adopted a factorial research design which was considered suitable to this study due to the examination of several factors measuring different constructs and the examination of multiple variables for an association. The population of this study comprised 271 principals and 4,336 teachers distributed across 271 public secondary schools in Cross River State, Nigeria. Convenient sampling technique was adopted by the researchers in selecting the entire 271 principals and 329 teachers. A 41-item instrument tagged: Teachers', Students' and Schools' System Effectiveness Scales (TSSSES) was constructed by the researchers and partitioned into three sections. Section A comprised 15 items arranged on a five-point scale developed by the researchers (see Appendix) to measure teachers' effectiveness. Section B was also designed with 15 items arranged on a 10-point rating scale developed by the researchers (see Appendix) to measure students' effectiveness. While section C was constructed with 11 items arranged on a five-point Likert Scale (see Appendix) to measure schools' system effectiveness. Before administering the instrument, the researchers hypothesized a model which was proposed prior to the conduct of the factor analysis. The hypothesis was that all the items developed will measure their respective constructs effectively. The hypothesized model is presented in Figure 1 below.
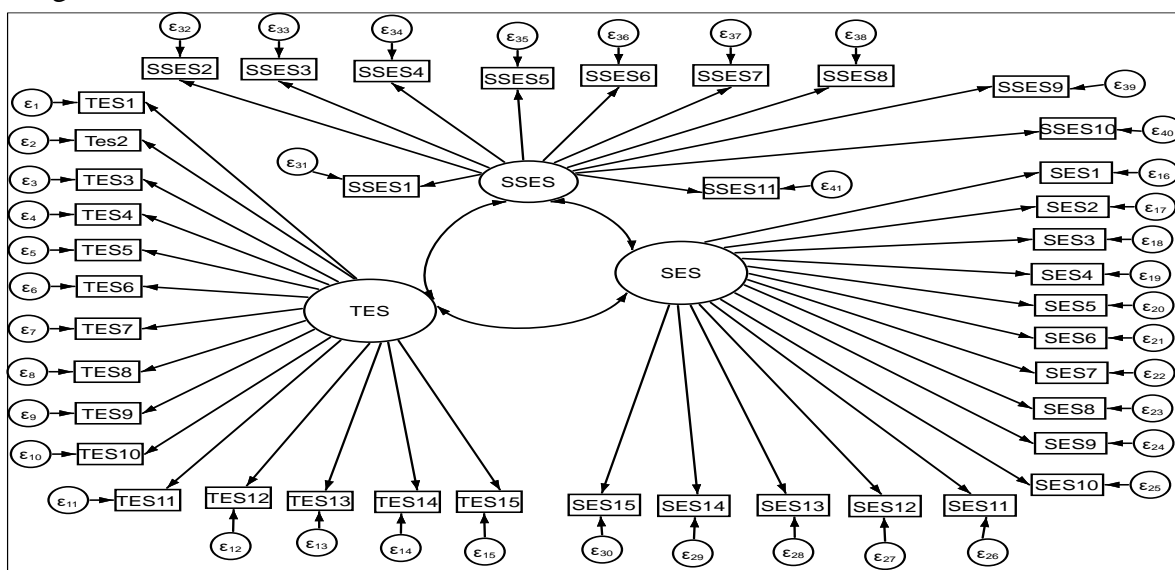
**FIGURE 1**: Hypothesized model developed and proposed by the researchers.

A survey was carried out where the instruments were administered to the selected respondents by the researchers. The researchers targeted 600 respondents, however, only 598 completed instruments were retrieved during the data collection process representing a 99.7% rate of return. Method of analysis followed the quantitative approach based on the proposed research model. According to Moslehpour, Altantsetseg, Mou, and Wong (2018), the quantitative model is the best suitable method to draw conclusions utilizing techniques that emphasize the validity and the reliability of the model. Thus, after data collection, the instruments were validated and tested for reliability using Exploratory and Confirmatory Factor Analyses respectively, with the support of Cronbach Alpha for the reliability of the instrument. The null hypothesis formulated was also tested using Path analysis. All computations in this study were performed using MS-EXCEL v2016, SPSS v23, AMOS v23, and Stata v15 and the results are presented in the following section.

## RESULTS

### Exploratory Factor Analysis

The factorial structure of the 41-items instrument was subjected to an exploratory factor analysis with Promax rotation. The Kaiser-Meyer-Olkin measure of sampling adequacy was employed and revealed a coefficient of KMO=0.960 as shown in Table 1. The correlation structure was tested to determine the adequacy for factor analysis using Bartlett's test of sphericity, with a value of 29444.15, $p<.05$ (n= 598) providing sufficient reasons to conduct factor analysis. The Maximum Likelihood (ML) approach with the cut-off mark set at point .40 and the Kaiser's criterion of eigenvalues greater than 1 was adopted specifically for the Exploratory Factor Analysis (EFA). Maximum Likelihood (ML) and Least Squares (LS) are the commonly preferred methods which consider the data structure (Koyuncu, & Kılıç, 2019). Continuous variables, a large sample size, and multivariate normal distribution of variables are among the other assumptions of the ML method (Brown & Moore, 2012). All these assumptions were met since the study sample is 598 participants, and usually, a sample of n=400 is large enough for performing factor analysis (Bassey, Owan, & Agunwa, 2019).

The results yielded a three factors solution as the best fit for the data which accounted for 96% of the variance. The three factors were modelled to include: Teachers' effectiveness factors, Students' effectiveness factors, and schools' system effectiveness factors. Teachers' effectiveness factors with an eigenvalue of 12.413 accounted for 30.933% of the variance. Students' effectiveness factors with an eigenvalue of 11.040 accounted for 28.085% of the variance; while school system effectiveness factors with an eigenvalue of 6.158 contributed a variance of 14.787%. Residuals were computed between observed and reproduced correlations. There were 15 (2.0%) non-redundant residuals with absolute values greater than 0.05 which is very good since the obtained value of 2% is less than 5% error rate. The results are summarized in Table 1.

TABLE 1
Exploratory Factor Analysis of the structure of the instrument measuring students', teachers', and school system effectiveness.

| Variables | Items | Mean | SD | % variance | FACTOR LOADINGS of EFA | CFA | Cronbach's Alpha |
|---|---|---|---|---|---|---|---|
| Teachers' effectiveness | TES1 | 3.00 | 1.385 | | .765 | .77 | |
| | TES2 | 2.96 | 1.390 | | .918 | .92 | |
| | TES3 | 2.92 | 1.357 | | .786 | .79 | |
| | TES4 | 2.95 | 1.399 | | .911 | .91 | |
| | TES5 | 2.91 | 1.407 | | .727 | .73 | |
| | TES6 | 2.95 | 1.382 | | .931 | .93 | |
| | TES7 | 2.97 | 1.392 | | .915 | .92 | |
| | TES8 | 2.94 | 1.399 | 30.933 | .905 | .90 | .982 |
| | TES9 | 2.96 | 1.366 | | .767 | .77 | |
| | TES10 | 2.93 | 1.380 | | .944 | .94 | |
| | TES11 | 2.95 | 1.362 | | .947 | .95 | |
| | TES12 | 2.92 | 1.354 | | .924 | .92 | |
| | TES13 | 2.95 | 1.372 | | .922 | .92 | |
| | TES14 | 2.93 | 1.369 | | .950 | .95 | |
| | TES15 | 2.93 | 1.357 | | .910 | .91 | |
| Students' Effectiveness | SES1 | 5.68 | 2.875 | | .862 | .86 | |
| | SES2 | 5.58 | 2.867 | | .901 | .90 | |
| | SES3 | 5.63 | 2.785 | | .938 | .94 | |
| | SES4 | 5.56 | 2.836 | | .930 | .93 | |
| | SES5 | 5.54 | 2.865 | | .814 | .82 | |
| | SES6 | 5.60 | 2.809 | | .928 | .93 | |
| | SES7 | 5.65 | 2.813 | 28.085 | .895 | .89 | .983 |
| | SES8 | 5.66 | 2.811 | | .910 | .91 | |
| | SES9 | 5.51 | 2.801 | | .804 | .80 | |
| | SES11 | 5.54 | 2.885 | | .894 | .89 | |
| | SES12 | 5.54 | 2.820 | | .938 | .94 | |
| | SES13 | 5.55 | 2.863 | | .902 | .90 | |
| | SES14 | 5.59 | 2.878 | | .901 | .90 | |
| | SES15 | 5.57 | 2.873 | | .914 | .91 | |
| School system effectiveness | SSES1 | 2.97 | 1.412 | | .860 | .86 | |
| | SSES2 | 2.94 | 1.421 | | .833 | .83 | |
| | SSES3 | 2.97 | 1.395 | | .645 | .64 | |
| | SSES4 | 2.99 | 1.435 | | .747 | .75 | |
| | SSES5 | 2.96 | 1.406 | | .833 | .83 | |
| | SSES6 | 2.98 | 1.418 | 14.787 | .616 | .62 | .930 |
| | SSES7 | 2.94 | 1.415 | | .672 | .67 | |
| | SSES8 | 2.93 | 1.426 | | .822 | .82 | |
| | SSES9 | 2.94 | 1.431 | | .803 | .80 | |
| | SSES11 | 3.02 | 1.426 | | .722 | .72 | |
| Instrument Total | Kaiser-Meyer-Olkin (KMO) | | | .960 | | | |
| | Bartlett's Test of Sphericity | | | 29444.15 | | | .941 |
| | p-value | | | .000 | | | |

Generally, the results as presented in Table I revealed that all the items loaded highly on their respective constructs except items SES10 (Students' attitudes towards co-curricular activities) and

SSES10 (Graduates enrolment into tertiary institutions) which loaded double into other factors they were not designed to measure. They also had relatively weak coefficients .432 and .501 respectively, consequently they were removed from the model to avoid issues of model fit. Cronbach alpha reliability was further performed to ascertain the internal consistency of the instrument and estimates of .982, .983, .930, and .941 were obtained respectively for teachers' effectiveness, students' effectiveness, schools' system effectiveness, and the overall instrument.

**Confirmatory Factor Analysis (CFA)**
The Confirmatory Factor Analysis was performed after Exploration to verify the goodness of fit of the model. After conducting the Exploratory Factor Analysis (EFA), variables SES10, and SSES 10 were removed due to their weak coefficients in order to get a better fit for the model. The goodness of fit of the model was determined using the Chi-square technique, the Root Mean Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), the Standard Root Mean Squared Residual, the Akaike's information criterion (BIC), and the Bayesian information criterion. The results from the analysis are presented in Table 2 below.

TABLE 2
Comparison of the fit of the models using various goodness of fit indices

| Fit Indices | $X^2$ | RMSEA | CFI | TLI | SRMR | AIC | BIC |
|---|---|---|---|---|---|---|---|
| Value | 2620.735 | .068 | .935 | .931 | .029 | 66071.7 | 66598.7 |
| p-value | p<.05 | p<.05 | | | | | |

Given the strengths and weaknesses labelled against various fit indices, it has been recommended that several fit indices be used in testing models for reliable results. According to Cabrera-Nguyen (2010), researchers should define the model accurately, determine its constant and variable parameters, use more than one fit indices, give factor loads in tandem with significance values, explain the reasons of modifications and choose an appropriate parameter estimation method. The a priori for using the Chi-Square as a measure for testing for model fit is that the results must not be significant. If the Chi-Square is significant, then the model is not a good one. As shown in Table 2, the Chi-Square value of 2620.735, p<.05 is significant, by implication, the model is not fit following the Chi-Square measure. However, one observation labelled against the measure of Chi-Square is that a large sample size (n≥400) will yield significant results, thus making the measure unreliable (Wheaton 1987; Brown, 2015; Kline 2016; Bassey et al., 2019; Koyuncu, & Kılıç, 2019).

The results presented in Table 2 shows that the RMSEA value of .068 indicated a good model fit that is statistically significant (p<.05). The RMSEA tells us how well the model, with unknown but optimally chosen parameter estimates, would fit the population's covariance matrix (Byrne, 1998). The RMSEA ranges from 0 to 1, with smaller values indicating better model fit (Hu & Bentler, 1999). Brown (2015) disclosed that an RMSEA value of .06 or less is indicative of an acceptable model fit.

The CFI value of .935 indicated a good model fit. Values for this statistic range between 0.0 and 1.0 with values closer to 1.0 indicating good fit (Hooper, Coughlan, & Mullen, 2008). A cut-off criterion of CFI ≥ .90 was initially advanced however, recent studies have shown that a value greater than .90 is needed in order to ensure that mis-specified models are not accepted (Hu & Bentler, 1999). The Tucker-Lewis Index (TLI) of .931 also confirmed that the model was a good fit. For the TLI, a model fit of .80 and above have been recommended as a good model fit (Hooper, et al, 2008).

The SRMR value of 0.029 also suggested that the model proposed in this study is properly fitted. The SRMR is a very good measure especially when instruments of different scales are used (e.g. two questionnaires, one on a 0–10 scale, the other on a 1–5 scale as in this study). Values for the SRMR range from 0 to 1.0 with well-fitting models obtaining values less than .05 (Byrne, 1998; Diamantopoulos & Siguaw, 2000).

After meeting all the assumptions in the Exploratory Factor Analysis with good factor loadings, the proposed model has been further accepted with little modifications through the Confirmatory Factor Analysis. Going by the judgment of all the indices of model fit, the model passed all the tests exception of the Chi-Square index due to the large sample size of the model. The new and modified model is presented as Figure 2 with the problematic items (SES10 and SSES10) removed.
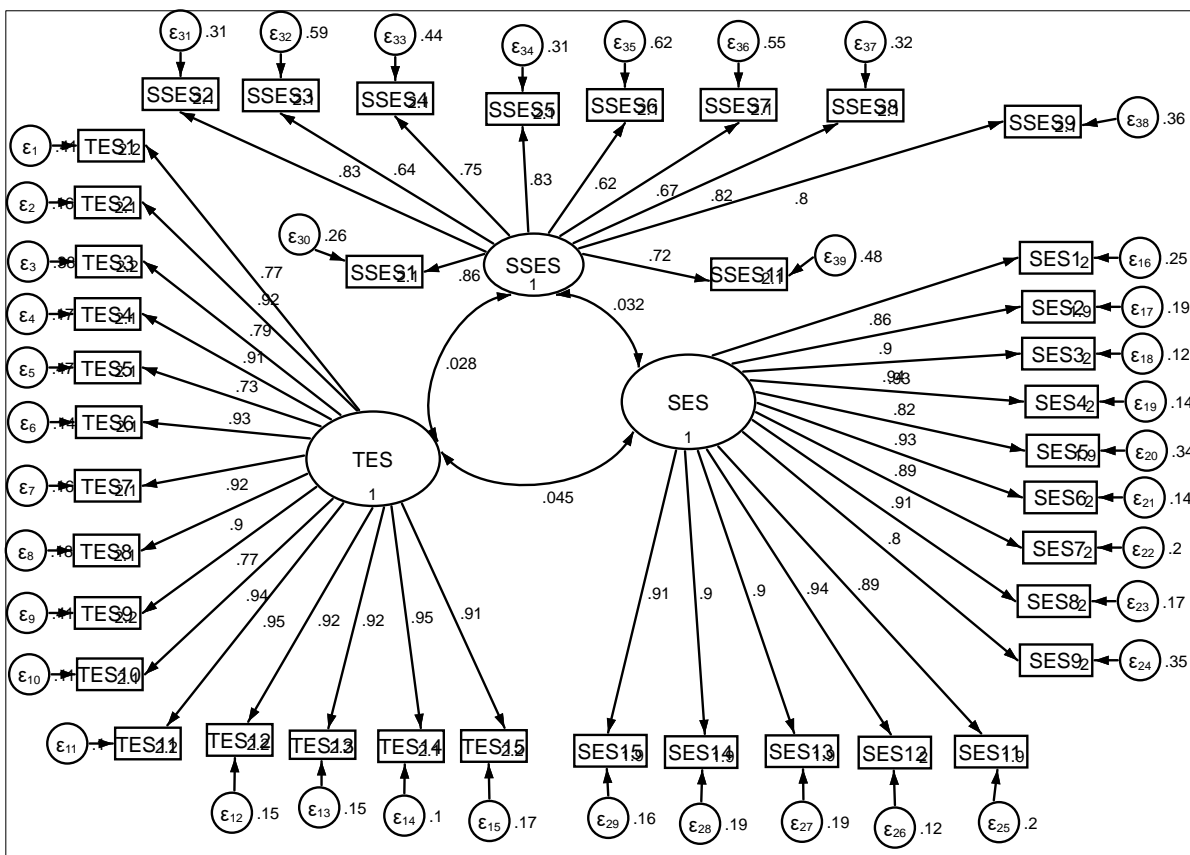


**FIGURE 2:** Three-factor model of teachers', students', and school system effectiveness with Items SES10 and SSES10 deleted. Source: Researchers' computation (2019)

**Hypothesis 1**

There is no significant parsimonious nexus between teachers', students' and school system effectiveness in secondary schools. This hypothesis was tested using the Root Mean Square Error of Approximation (RMSEA) index of the path diagram presented as Figure 3 below.
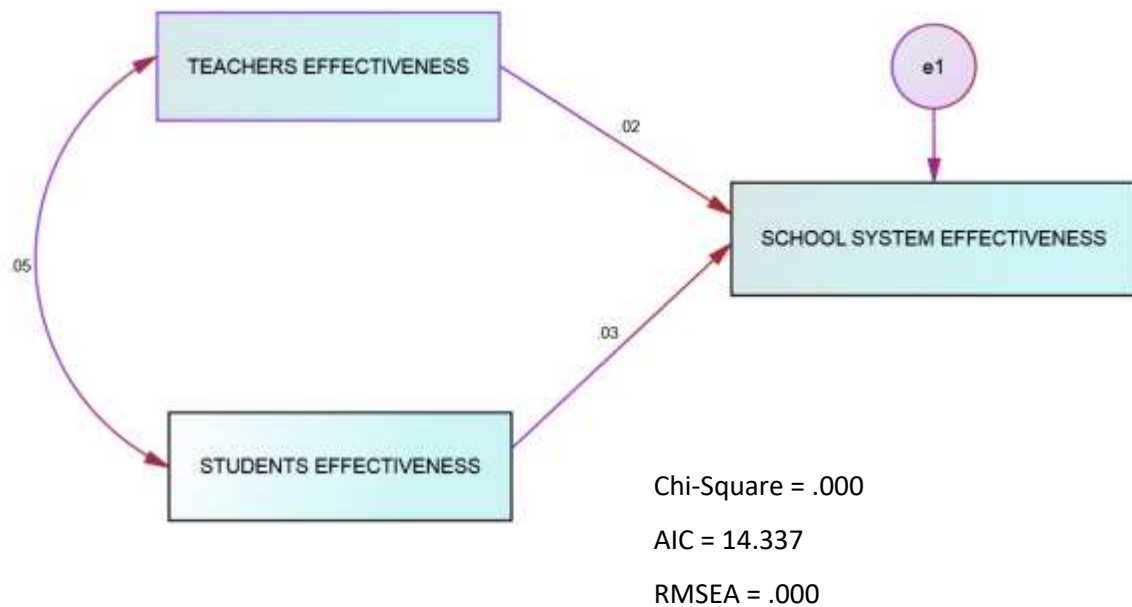
**FIGURE 3:** Path Diagram showing the nexus between teachers', students' and school system effectiveness.

The RMSEA value of .000 for the model above indicated a good fit of the model. The results indicated there is a direct significant relationship between teachers' effectiveness and school system effectiveness and between students' effectiveness and school system effectiveness. There is however an indirect relationship between student's effectiveness and school system effectiveness with teachers' effectiveness as the mediating variable. There is also indirect nexus between teachers' effectiveness and school system effectiveness with students' effectiveness mediating the association. Given these results, the null hypothesis was rejected, while the alternative hypothesis is upheld, implying that there is a significant parsimonious nexus between teachers', students' and school system effectiveness in secondary schools in of Cross River State, Nigeria.

In terms of total effects, teachers' effectiveness contributed a total of 20% ($R^2$= .027) to the total variance in teachers' job effectiveness; students' effectiveness accounted for 30% ($R^2$ = .017) of the total variance in school system effectiveness. Jointly, teachers' effectiveness and students' effectiveness could be held accountable for 50% of the total variance in school system effectiveness, with the remaining 50% explained by other independent variables not included in the model. The implication of this result is that, other things being equal, a unit increase in teachers' and students' effectiveness, will increase the level of school system effectiveness by 20% and 30% respectively. The value of .50 as indicated in Fig.3 indicates a moderate positive covariance (association) between teachers' effectiveness and students' effectiveness. This indicates a positive relationship between the two variables such that as teachers' effectiveness increases, students' effectiveness also increases, and vice versa. The results in the path diagram is further simplified in Table 2 for clarity.

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TABLE 2
Regression Weights of the path diagram in Figure 3.

| Variables and paths | | | Est | S.E. | C.R. | P |
|---|---|---|---|---|---|---|
| Schools' system effectiveness | <--- | Teachers' effectiveness | .02 | .151 | 58.513 | *** |
| Schools' system effectiveness | <--- | Students' effectiveness | .03 | .147 | 53.176 | *** |
| Teachers' effectiveness | <--> | Students' effectiveness | .54 | .543 | 1.305 | .192 |

**DISCUSSION OF FINDING**

The finding of this study is discussed based on the results from the test of the hypothesis. The study established that there is a significant parsimonious nexus between teachers', students', and schools' system effectiveness. These results suggest that a school's system effectiveness is dependent on the effectiveness of both teachers and students. The practical implication of this study is not unconnected from the fact that the main personnel within the school system are the staff and students. When teachers are discharging their duties following ethical patterns, the issues of gross misconduct, truancy, lateness and other forms of ineffectiveness will be in the past. This finding also aligns with the results from the study of Arop, Owan, and Ibor (2019) which revealed that there is a significant relationship between quality of school facilities, quality of leadership, quality of supervision, respectively with secondary school teachers' job performance. Other studies too have shown that effective teachers produce better performing students, and effective teachers contribute significantly to the effectiveness of the school system (Heck, 2009; Akiri & Ugborugbo, 2009; Oviawe, 2016; Owan, et al, 2018; Owan et al. 2019; Arop, et al, 2019)

Teacher effectiveness level correlating with students' effectiveness also tells you that there is an interwoven nexus connecting the school, teachers, and students. As teachers become effective, they will be able to groom effective students through their attitude, instructions, and guidance. The sum of teachers' and students' effectiveness is an effective school system. It follows also that in an effective school, the activities of both the teachers and students are closely monitored, corrected, and appreciated, until the best is gotten, thus, making them effective.

**CONCLUSION**

The study concluded that there is a tripartite nexus between teachers', students', and school system effectiveness in secondary schools of Cross River State. There is a direct and indirect association between teachers' effectiveness and school system effectiveness and between students' effectiveness and school system effectiveness. Fifty percent of the total variance in school system' effectiveness is accounted for, by the composite effects of teachers' and students' effectiveness citeris paribus. School system effectiveness is a function of teachers' effectiveness and students' effectiveness and improves as the quality of students' and teacher' effectiveness increases.

**Recommendations**
The following recommendations were made based on the findings of this study.
i.      The instrument validated in this study should be used for assessing related constructs and variables as used in future studies.
ii.      Secondary school managers should ensure that there is adequate supervision of both staff and students in order to improve the quality of their activities towards enhancing their effectiveness specifically, and the effectiveness of the school generally.

iii.     Teachers should discharge their primary duties of teaching with all amount of dedication and provide learners with an opportunity to learn. Teaching should be carried out with students at the center of every plan.

iv.     The government at all levels should provide funds and supply public schools with good school plants such as buildings, laboratories, libraries, and teaching aids. This will help teachers convey lessons effectively, and provide students with the opportunity to engage in hands-on activities.

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APPENDIX
TEACHERS', STUDENTS' AND SCHOOLS SYSTEM EFFECTIVENESS SCALES (TSSSES)

**Section A: Teachers' Effectiveness Scale**
**Instruction:** Rate the level of teachers' effectiveness using the scale provided from HI to HE.
HI        -        Highly Ineffective
I        -        Ineffective
F        -        Fair
E        -        Effective
HE        -        Highly Effective

| ITEMS/SCALE | | HI | I | F | E | HE |
|---|---|---|---|---|---|---|
| TES1 | Physical appearance/dressing | | | | | |
| TES2 | Subject mastery | | | | | |
| TES3 | Lesson preparation | | | | | |
| TES4 | Punctuality | | | | | |
| TES5 | Instructional delivery | | | | | |
| TES6 | Classroom management | | | | | |
| TES7 | Engaging students in learning | | | | | |
| TES8 | Understanding learners' individual differences | | | | | |
| TES9 | Monitoring students' progress | | | | | |
| TES10 | Students reinforcement | | | | | |
| TES11 | Keeping students' records | | | | | |
| TES12 | Relationships with students | | | | | |
| TES13 | Getting students to feedback during a lesson | | | | | |
| TES14 | Lesson evaluation techniques | | | | | |
| TES15 | Academic performance of students | | | | | |

**Section B: Students' Effectiveness Scale**
Instruction: Rate the level of students' effectiveness using the scale provided from 1 to 10
1 = Very poor
10 = Very High

| ITEMS/SCALE | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SES1 | Punctuality to classes | | | | | | | | | | |
| SES2 | Time management | | | | | | | | | | |
| SES3 | Students classroom behaviour | | | | | | | | | | |
| SES4 | Class attendance | | | | | | | | | | |
| SES5 | Communication skills | | | | | | | | | | |
| SES6 | Note taking | | | | | | | | | | |
| SES7 | Attitudes towards assignment | | | | | | | | | | |
| SES8 | Study rate | | | | | | | | | | |
| SES9 | Adherence to school rules and regulation | | | | | | | | | | |
| SES10* | Attitudes towards co-curricular activities | | | | | | | | | | |
| SES11 | Relationship with other students | | | | | | | | | | |
| SES12 | Creativity | | | | | | | | | | |
| SES13 | Examination results | | | | | | | | | | |

| SES14 | Concrete tasks performance | | | | | | | | | | | |
| SES15 | Application of knowledge | | | | | | | | | | | |

\* Problematic item

**Section C: School system effectiveness**

Instruction: Rate the level of your schools' effectiveness using the scale provided.

E = Excellent

G = Good

F = Fair

P = Poor

VB = Very Bad

| SCHOOL SYSTEM EFFECTIVENESS | | E | G | F | P | VB |
|---|---|---|---|---|---|---|
| SSES1 | Implementation of planned policies | | | | | |
| SSES2 | School expectations | | | | | |
| SSES3 | Quality of school leadership | | | | | |
| SSES4 | Cohesion among staff | | | | | |
| SSES5 | Relationship with the host community | | | | | |
| SSES6 | School climate | | | | | |
| SSES7 | Teachers' dedication | | | | | |
| SSES8 | Students' academic performance | | | | | |
| SSES9 | Graduates enrolment into tertiary institutions | | | | | |
| SSES10* | Goal attainment | | | | | |
| SSES11 | Environmental Safety | | | | | |

\* Problematic item