MATHEMATICS TEACHERS’ LEADERSHIP STYLES AND LEARNING MOTIVATION AMONG SECONDARY SCHOOL STUDENTS IN CROSS RIVER STATE, NIGERIA

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ABSTRACT: The study investigated Mathematics teachers’ leadership styles and learning motivation as perceived by secondary school students in Calabar Education Zone of Cross River State. The study utilized descriptive research design. Three research questions were asked to guide the study. Sample size was five hundred and ninety nine (599) SSII students randomly selected from 49 public secondary schools through stratified random sampling technique. Mathematics Teachers’ Leadership Styles and Learning Motivation Questionnaires (MTLSMQ) with reliability coefficient of 0.74 were used to gather data for the study. Data was analyzed using descriptive statistics and multiple regression statistical technique. Result showed that there is significant positive relationship between teachers’ leadership styles and students learning motivation. Based on the findings, it was recommended among others that training programme on leadership and general attitude to work should be organized for mathematics teachers in particular and teachers in general. This will help them to realize that they are leaders in the classroom.

KEYWORDS: Teacher, leadership style, learning, motivation, students, Cross River

INTRODUCTION

The school system as an organization is a social set up with a boundary that divides it from its environment. The system pursues its own collective goal and control its own performance. Interactions in any school organization are rationally coordinated and directed through time on a continuous basis and the person at the helm of affairs is usually the leader (Ekeland, 2005). The principal or headmaster is the primary leader in a school organization while the teacher is the primary leader in the classroom management because he is the one that models, motivates and initiates acts of leadership. Ngambi (2011) defined leadership as a process of influencing others commitment toward realizing their full potential in achieving a value added shared vision with passion and integrity. The nature of this influence is such that the members of the team cooperate voluntarily with each other in order to achieve the objectives which the leader has set for each member as well as for the group. Okon (2016) sees it as the use of power, authority, influence, vision, and persuasion and communication skill to coordinate the behaviour of individuals and groups so that their activities and efforts are in harmony and produce goal accomplishment it is described by Ekpiken (2016) as a process of directing the behaviour of others towards the accomplishment of goal. Michael (2011) posits that leadership has a direct cause and effect relationship upon organizations and their success because leaders determine values, culture change tolerance and employee motivation they shape institutional strategies including their execution and effectiveness. In other words, leadership is an important function of management which helps to maximize efficiency and to achieve organizational goals.

Since leadership is described as an effort that directs organizational activities to achieve a common goal and with the ever changing educational landscape, principals should ensure the
incorporation of a wide range of leadership and styles in order to direct their schools toward common goal and its well-directed vision. It is also an input into an organization which involves interpersonal influences as one initiates structures and acts that result in a consistent pattern of group interaction aimed at productivity and individual fulfilment. Leadership vary depending on the character of the leader and each has its own style. The relationship between the leader and employee as well as the quality of employee performance according to (Jeremy, 2011) is significantly influenced by the leadership style adapted by the leader. So, leadership style can be defined as the kind of behaviour and abilities which managers have and which enables them to interact with his subjects (Hesham, 2010).

Obiwuru, Okwu, Akpa and Nwakere (2011) described leadership style as one of the factors that play significant role in enhancing or retarding the interest and commitment of the individual. Yuning (2007) sees leadership styles as leader’s behaviour that influence the action of students with goal attainment as the motivating force. Leadership style according to Achua (2010) is the combination of traits, skills and behaviours that leaders use as they interact with followers. Leadership style is the behaviour a leader exhibit while leading or guiding members of the organization to the achievement of specific objectives. (Aigboje, 2013). Transformational, transactional (Contemporary leadership styles) and laissez- faire were the three leadership styles proposed by Burns (1978).

Transformational leadership style was first described by Max Weber in 1947, popularized by Burns (1978) and expanded by Base and Avolio (1997). It is the type of leadership style in which the leader motivates by making followers more aware of the importance of task outcomes (Akpa, 2011) and as a result there is an increase in the levels of performance and commitment to goals for their organization in a positive way (Hiller, 2009). Fenn and Mixon (2011) confirmed that transformational style increases the efficiency and productivity of an organization because of its flexibility and how it gives the followers the chance to be creative. Transformational leaders are knowledgeable, dynamics, proactive and capable of leading themselves and the subordinates to embrace chances, exerting extra effort to meet the ever increasing demand of competition (Ahanager, 2009). Leaders with transformational mind-set tend to take their followers beyond their own self-interest for the benefit of their group, organizations or societies (Ergeneli 2007). This leadership style enhances the motivation, morale and performance of followers through a variety of mechanism. Transformational leadership has four components namely intellectual stimulation, individualized consideration, idealized influence (Charisma) and inspirational motivation. When employing this type of leadership style members feel trust, admiration, loyalty and respect toward their leader, being able motivated to achieve more than they themselves initially expected. This type of leader transforms and motivates their subordinates by increasing their awareness regarding the importance of task result and also their innovative thinking.

Transactional leadership style according to Bolkan and Goodboy (2009) implies exchanging process which may enhance subordinate conformism with their leaders request without necessarily generating enthusiasm and engagement related to task objectives. Transactional leaders have an instrumental, task-oriented approach, extrinsically conditioning their good outcomes and criticism or preventing their performance (Harrison, 2011).This leadership style emphasizes the transaction or exchange taking place among leaders subordinates and colleagues. The transactional leadership implies that leaders together with his subordinates establish what is important or necessary as well as both conditions and rewards for task accomplishment. Tengilimoglu (2005) proposed that transactional leadership styles generally
work with focus on continuing the works of the past and transforming them into the future. They are effective in getting specific task completed by managing each portion individually. Laissez-faire leadership style is one in which the leaders never intervene in the administrative processes and gives limitless freedom to followers. This autonomy can lead to job satisfaction but it can be damaging if the team members do not manage their time well or if they do not have the knowledge, skills or self-motivation to do their work effectively. Laissez-faire leadership can also occur when the managers don’t have control over their people. All leaders exhibit characteristics of transformational and transactional and both are required to effectively manage knowledge (Almansour, 2012).

Students’ motivation as pointed out by Spring and Kritsonis (2008) is a key component connected to students achievement. Motivation which is psychological multidimensional construct(Zhu and Leung, 2010) according to Nwali and Okpata (2012) is the ability of influencing the activities of others without any form of coercion or threat toward the realization of the goals of a group, enterprise, organization or nation. It is the needs, desires and concepts that cause staff to act in a particular end through the manipulation of incentives (Okorie, 2012). Students’ motivation is reflected in personal investment and in cognitive, emotional and behavioural engagement in school activities.(Fredricks, Blumenfield and Paris 2004). The degree to which teachers utilize motivation in the classroom determines successful learning. Motivation which is an inferential concept is referred to by Ormond (2003) as a process that directs behaviour towards particular goal, lead to increase in effort and energy, increase initiation of and persistence in activities, enhance cognitive processing, determine what consequences are reinforcing leads to improved performance.

Teachers can be powerful conductors of motivation by creating a climate within the classroom that values and challenges all learners. When students perceive that teachers care about their success and are willing to give every effort to help them become successful, students make an internal commitment to give just as much even more in setting high goals. It is important to remind them to review their goal frequently and discuss where they are in terms of achieving them (Kristonis, 2008). Equally, when teachers are motivated, the morale will be high and this facilitates the attainment of educational goals. It then implies that motivation leads to high morale and productive efficiency of workers, increase the interest of the teachers and students on the teaching/learning confidence and enthusiasm in activities they carry on. In other words, using leadership styles is useful in increasing student’s motivation in studying. If a teacher teaches using good leadership style, it will motivate student perform better. Teachers exhibit leadership by participating in professional teacher organizations, including holding position of influence; making students and learning their priority; setting high expectation for performance; using multiple source of data to assess learning; defining what students need to know and be able to do, including developing standards for curriculum and assessments; sharing ideas with colleagues, including leading professional development programme for colleagues.

Lin and Chuang(2014) conducted a research to investigate the effect of leadership styles of science teachers on the learning motivation, using 2800 students and 165 teachers as participants. The finding showed that both transformational and transactional leadership styles moderated learning motivation. Padapurackal (2006) research work on teachers’ leadership style and classroom motivation using Leader Behaviour Descriptive Questionnaire as one of the main instrument revealed that consideration factor was more perceived than initiating structure and also there was a high positive correlation between teachers leadership style and classroom motivation. A case study on the relationship between leadership style and learning
motivation by Yung (2005) showed a possible influence of leadership style in particular and a positive effect of transformational and participative leadership style on employees learning motivation. Ageda (2014) carried out a research study on leadership style and motivation and delegation in one selected tertiary institution in Kogi State using 100 participants. The result revealed that democratic (participative) leadership is sustainable and there was also sufficient level of motivation and delegation of authority and this could improve staff performance thereby enhancing the realization of its goal and objectives. Torabi, Khodayari and Kohandel (2013) research work on the relationship of leadership style with achievement motivation and self-efficiency found no significant correlation between them while teachers leadership style had significant lower positive direct effect on psychological characteristics in the research study of Seritanondh (2013) on teacher leadership style and student characteristics.

Alfaahad, Alhajiri and Algahtani (2013) on the relationship between school principals leadership styles and motivation of teachers using 320 head of instructional departments. Finding showed that transformational leadership style was prevalent among principals and the teacher’s achievement motivation was positive. There was also positive correlation between principal’s transformational leadership styles and the teachers’ achievement motivation. Ukaidi (2016) work to explore the influence of leadership style on organizational performance showed that democratic inclination can motivate workers. Almansour (2012) demonstrated that there was a significant relationship between leadership style and motivation of managers. Eval and Rott (2011) concluded by establishing that leadership style is a significant factor in the motivation of students, Doug (2011) added that leaders should focus on their own behaviour, the type of leadership style they use and the actions they take in order to motivate their subordinate for more task.

Barbuto (2005) work on motivation and transactional charismatic and transformational leadership style using 186 leaders and their 759 assessors. Result revealed that transactional leadership (contingent reward, management by exception (active) and management by exception (passive) have significant and positive relationship with intrinsic motivation. Research work on impact of transformational and transactional leadership styles on learning motivation of students using 400 students from different universities by Islam, Aamir Ahmed, Muhammed (2012) revealed that relationship between both of the leadership styles with motivation and academic performance exist. But relationship between transactional leadership style and motivation was found to be greater.

Having reviewed and meted the many influences of leadership styles on the employees and learning motivation of students at various levels, it is pertinent that the researchers should carry out the study, it is important to assess the leadership styles of mathematics teachers and how they can influence the learning motivation of students since mathematics is a very important and compulsory subject.

Statement of the problem

The process of teaching and learning is filled with hurdles which the teacher is expected to resolve in order to achieve his stated objectives/goals. One of these challenges is the teachers’ role of motivating or reinforcing his students’ behaviour. Observations have shown that many students hate mathematics as a subject and have and phobia for figures which has translated itself into failures in external examinations.
Government on their own part has made several efforts to reverse the various situations in schools by organizing workshops for mathematics and by releasing funds to maintain the schools. They from time to time recruited additional teachers into the public schools in response to increased students enrolment, mathematics teachers have used range of pedagogic strategies available to them and relevant techniques to arouse and sustain interest in student but all to no avail, many students still fail mathematics. Research works have shown that students’ motivation leads to a better academic achievement (Gbollie and Keamu, 2017). Therefore, this paper attempts to find out if mathematics teachers’ leadership styles in the classroom have been purposeful in yielding effective learning motivation of secondary school students in Cross River State.

**Purpose of the study**

Specifically, the study sought to examine:

1. The relationship between independent variable: Leadership styles (Transformational, transactional and laissez- faire) and dependent variable (learning motivation of students).
2. The combined predictive impact of transformational, transactional and laissez-faire leadership styles and learning motivation of students.
3. The relative predictive impact of transformational, transactional and laissez-faire leadership styles on learning motivation of students.

**Research Questions**

The following research questions served as guide to the study

1. What is the relationship between the independent variable: leadership styles(Transformational, transactional and laissez- faire) and dependent (learning motivation) of students?
2. What is the combined predictive impact of transformational, transactional and laissez-faire leadership styles on learning motivation of students?
3. What is the relative predictive impact of transformational, transactional and laissez-faire leadership styles on learning motivation of students?

**METHODOLOGY**

The study adopted a descriptive survey design. The population of the study consist of 5992 SSII students Calabar Education Zone in 2016/2017 Academic Session (Cross River State Secondary School Education Board) in 81 public secondary schools. The sample comprised of 599 SSII students randomly selected to report on how they perceive the leadership styles of their mathematics teachers in addition to their own classroom learning motivation. Three research questions guided the study. The instrument used for data collection was self- structured questionnaire which was validated by three experts in educational psychology and measurement and evaluation. The instrument titled: “Mathematics Teachers’ Leadership Styles and Learning Motivation Questionnaire” (MTPLSMQ). MTPLSMQ had three parts: ABC. Part “A” had personal data of the respondent such as age, sex, school. Part “B” had 21 items measuring
mathematics teachers’ styles (items 1-6 measures transformational leadership style, items7-12 measured Transactional leadership style, 13-18 measured laissez- faire leadership style) while Part “C” had 15 items four point Likert type scale measuring learning motivation of the students with reliability coefficient of .74. Response to the items were Strongly Agree (SA), Agree (A), Disagree (D),Strongly Disagree (SD). Face-to- face administration of the instruments to the respondents was done by the researcher and two research assistants. All the copies of the instrument administered were retrieved. Research questions were answered using descriptive statistics and multiple regression statistical technique.

PRESENTATION OF RESULTS

Research question one

What relationship exists between leadership styles (transformational, transactional and laissez-faire) and learning motivation of secondary school students? The inter-correlation coefficient among the variables is presented in Table 1.

TABLE 1: Descriptive statistics and Inter-correlation among the variables (N=599)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning motivation of</td>
<td>21.00</td>
<td>3.28</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>secondary school students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transformational</td>
<td>17.96</td>
<td>4.03</td>
<td>.350</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transactional</td>
<td>16.68</td>
<td>3.00</td>
<td>.316</td>
<td>.330</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>Laissez-faire</td>
<td>13.05</td>
<td>3.66</td>
<td>-.276</td>
<td>-.218</td>
<td>-.311</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*Significant at .05 level of significance.

The result in Table 1 showed that the mean score obtained among the subject as regards to perception of transformational leadership style was 17.96 is greater than the mean score of 16.68 obtained as regards to their perception of transactional leadership style and this is also greater than the mean score of 13.05 obtained as regards their perception of laissez-faire leadership style. The mean score obtained as regards learning motivation of secondary school students was 21.00. The result in Table 1 further showed that the inter-correlation among the variables revealed that significant relationship exist between the independent and dependent variables: perception of transformational leadership style ($r=0.350$, $p<0.05$); perception of transactional leadership style ($r=-0.316$, $p<0.05$) and perception of laissez-faire leadership style ($r=-0.276$, $p<0.05$).

Research question two

What is the combined predictive impact of transformational, transactional and laissez-faire leadership styles on learning motivation of secondary school students? The composite contribution of all the independent variables (leadership styles) on learning motivation of secondary school students was check as presented in Table 2.
TABLE 2: Multiple Regression Analysis showing the combined predictive impact of transformational, transactional and laissez-faire leadership styles on learning motivation of secondary school students

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>Sum of square</th>
<th>Df</th>
<th>Mean square</th>
<th>F-ratio</th>
<th>p-level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1644.984</td>
<td>3</td>
<td>548.328</td>
<td>62.731*</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>6949.011</td>
<td>595</td>
<td>8.741</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8593.995</td>
<td>598</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at .05 level.

The result in Table 2 shows that the Analysis of Variance of the Multiple Regression data yielded an F-ratio which was statistically significant at .05 level of significance; \( F(3, 595) = 62.731 \). This result indicates that when the independent variables were taken together, they significantly predicted learning motivation among secondary school students. The combined contributions of the independent variables to learning motivation of secondary school students produced a coefficient of multiple regression \( R \) of 0.438 with \( R^2 \) of 0.191 and an adjusted \( R^2 \) of 0.188. The adjusted \( R^2 \) of 0.188 implies that when the independent variables were taken together, they accounted for 18.8% of the total variance in learning motivation of secondary school students.

Research question three

What is the relative predictive impact of transformational, transactional and laissez-faire leadership styles on learning motivation of secondary school students?

To find out the relative contributions of each of the independent variables to the leadership styles on learning motivation of secondary school students, a test of regression weight was carried out. The result is presented in Table 3.

TABLE 3: Test of regression weights for contributions of each of the sub-independent variables on leadership styles on learning motivation of secondary school students

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>p-level</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>15.899</td>
<td>.908</td>
<td></td>
<td>17.503</td>
<td>.000</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>Transformational</td>
<td>.208</td>
<td>.028</td>
<td>.255</td>
<td>7.479</td>
<td>.000</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>Transactional</td>
<td>.197</td>
<td>.038</td>
<td>.181</td>
<td>5.160</td>
<td>.000</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>Laissez-faire</td>
<td>-.147</td>
<td>.030</td>
<td>-.164</td>
<td>-4.846</td>
<td>.000</td>
<td>&lt; .05</td>
</tr>
</tbody>
</table>

Dependent variable: Learning motivation of secondary school students

The result in Table 3 showed the unstandardised beta weights, standardised regression weights (beta), t-ratio and probability level for each of the variables. As presented, the standardised
regression weights (β) obtained for the independent variables are 0.255, 0.181 and -0.164 for transformational, transactional and laissez-faire leadership styles respectively in predicting learning motivation of secondary school students. In terms of magnitude of the contribution: transformational leadership style had the greatest contribution in the prediction of learning motivation of secondary school students followed by transactional leadership style and lastly laissez-faire leadership style which has a negative prediction.

The result in Table 3 finally showed that for any unit of transformational leadership style added, the learning motivation of secondary school students will increase by 0.21% and for any unit of transactional leadership style added, the learning motivation of secondary school students will increase by 0.20% while for any unit of laissez-faire leadership style added, the learning motivation of secondary school students will decrease by 0.15%.

DISCUSSION OF FINDING

The finding showed that significant relationship exist between mathematics leadership styles and students’ learning motivation. An effective leader (teacher) has the potential to inspire and create passion among his students. Both inspiration and passion which are the key ingredients in motivation can be cultivated through sound leadership style. It then implies that the type of leadership style employed in the classroom can either positively or negatively affect the students learning motivation. The finding is in consonance with finding of Cheung and Wong 2011; Almansour, 2012; Pounder, 2008, who stated in their separate research studies that there is relationship between teachers’ leadership style and students’ learning motivation.

The finding also revealed that the combination of transformational, transactional and laissez-faire leadership styles predicted learning motivation. Rukmani, Ramesh and Jayakrishnan (2010), Erkutlu (2008) stated that transactional and transformational leadership styles have complementary effects on each other and increases leadership effectiveness which in turn enhances motivation. Yuki (2006) stated that transformational increases follower motivation and performance more than transactional leadership, but effective leaders use a combination of both types of leadership.

The findings of the study revealed that in terms of magnitude of the contribution, transformational leadership style had the greatest contribution in the prediction of learning motivation of secondary school students followed by transactional and lastly laissez-faire which has a negative prediction. This finding is because transformational leaders make use of learning opportunities tactically to stimulate critical thinking in their followers, encourage them to learn, reach their potentials and break through learning boundaries. They have high personal commitment to learning because they view learning as a key ingredient in enhancing creativity. Transformational leader motivate and in still learning-oriented behaviour in those around them, Transactional leadership emphasizes the transaction or exchange taking place among subordinates and colleagues and this transaction implies that the leader together with his subordinates establish what is necessary as well as both conditions and rewards for task accomplishment, while laissez-faire leadership style leads to low productivity among group members because this type of leader hands off and allow members to make decisions. Though transformational leadership styles stimulates subordinates motivation and performance more than transactional, effective leaders(math teacher) according to Eyal and Roth(2011) should actually use a combination of the transformational being seen in certain aspect as an extension.
of the transactional. This finding is in agreement with the finding of Cheng and Wong (2011) that transformational leadership challenges individuals and energizes them to seek novel approaches to their work.

CONCLUSION

Motivation is an indispensable factor in the teaching-learning process in the primary, secondary schools as well as the higher institution. Effective learning has to be propelled by appropriate, adequate, potent and effective motivational styles and techniques. One of the ways of ensuring this in mathematics learning is for teachers to adopt and apply an acceptable leadership style that will enhance the motivation of students.

RECOMMENDATIONS

Based on the findings, the following recommendations were made:

1. Training programme on the leadership and general attitude to work should be organized for teachers. This will help them to realize that they are leaders in the classroom. It will also expose them to appropriate leadership style for students’ learning motivation.

2. Teachers should try to be friendly and also try to hold the students in high esteem by calling them by their names and listening to them. This will enable them develop trust in the teacher and also motivate them to perform mathematical tasks in a relaxed mood.

3. Both parents and teachers should nurture the child to progressively acquire task to enable the child to become more dependent for his self fulfilment upon intrinsic than extrinsic motivation.

4. School authorities should communicate school goals to the learners for these serves as an encouragement since they will not like to disappoint the school’s expectations of them.

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