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Role Model Attributes as Correlates of Slow Learners' Motivation and Understanding of Chemistry Concepts in Lagos State Schools

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Abstract. The purpose of the study was to investigate the influence of role model attributes (creativity; confidence and moral) and school locations (urban and peri-urban) on slow learners motivation and understanding of chemistry concept in Lagos State secondary schools of Nigeria. Slow learners considered were Senior Secondary School Three (SSS3) chemistry students that scored 20% and below in the urban and peri-urban locations during the 2019 Mock Examinations. Five null hypotheses guided the study. It was an ex-post facto research design involving 180 urban and peri-urban Senior Secondary School three chemistry slow learners in two Districts of Lagos State, Nigeria. Chemistry Understanding Test (CUT); Role Model Attributes Scale (RMAS) and Slow Learners Motivational Scale (SLMS) were the three instruments used in data collection. Data were analyzed using mean, standard deviation, Pearson correlation coefficient, regression analysis and independent t-test. The results show a strong positive influence of role model creativity; a weak positive influence of role model confidence and a non-significant influence role model moral attributes respectively on slow learners motivation and understanding of chemistry concept. There was a significant combined influence of role model creativity, moral and confidence but a non-significant influence of urban and peri urban locations on secondary school slow learners' motivation and understanding of chemistry concept. The paper concludes that role models should serve as confidant, counselor and objective adviser for performance improvement of secondary school slow learners in chemistry and recommends that school administrators, teachers and parents in both urban and peri-urban locations should be students' role models by setting high moral standard, self-confidence, positive attitude and values for their successful accomplishment in secondary school chemistry learning outcomes.

Keywords: Creativity, Confidence, Moral, Urban, Peri-Urban

1. Introduction

Chemistry is a branch of science that deals with the study of matter and changes matter undergoes under different conditions. It plays a central role in promoting and sustaining research, innovations and human needs through its relevance and functionality in content, practice and application (Okafor, 2018). Chemistry influences all aspects of human life especially in making decisions concerning health, environmental conservation and dieting required for quality of life (Tenaw, 2015). Studies have shown that most secondary school

students perceive chemistry as abstract and difficult (Okafor, 2018, Sirhan, 2007). Potvin, & Hasni (2014) posited that perception of science and technology as difficult subjects was due to poor motivation, negative attitude and lack of interest resulting to poor learning outcomes. Shaw (2008) showed concern that negative motivation is accompanied with dread, boredom, rejection, and academic failure among learners with diverse needs. Taber (2012) identified three levels of learners to include the: above average (gifted learners); average learners and below average (slow learners). Some challenges of secondary school slow learners have been identified byb some researchers to include; inadequate teaching pedagogies, lack of mentors and role models resulting to poor motivation and poor understanding of chemistry (Blackett 2014; Okafor, 2019; Tenaw 2015;Vans, 2004). School locations have been identified as part of obstacles inhibiting slow learners from achieving academic excellence (Carter, 2013). Bold (2019) and Dean (2014) outline some attributes of positive role models such as humorous, self-respect, honesty moral, confidence and creativity and how they have influenced secondary school students interest and motivation in meaningful understanding of science concepts. This paper examined only three attributes of role models (creativity, confidence and morals) and school locations (urban and peri-urban) to determine their influence on secondary school slow learners' motivation and achievement in chemistry. Secondary school slow learners considered in this paper are those Senior Secondary School Three (SSS3) chemistry students of the sampled schools who scored 20% and below in the urban and peri-urban locations during the 2019 Mock Examinations. 40% and above scores were accepted as average and above average scores during the 2019 Mock examinations.

1.1 Concept of Slow Learners' in Urban and Peri-Urban Locations

Slow learners are students with learning problems but require special educational needs such as: difficulty in understanding abstract concepts; limited vocabulary; lacking motivation; borderline mentally retarded, dull, below average children (Balado, 2003; Lowenstein, 2003). They are basically slow learners when faced with tasks requiring abstract and virtual learning for acquisition of conceptual knowledge in chemistry (Okafor, Okunuga & Ojo, 2019; Lowenstein, 2003). Academically, slow learners are identified based on their attained scores on intelligence tests, with IQs ranging from 75-89 (Anastasia, Elein & Effi, 2006). A slow learner differs slightly from a normal child in learning ability levels, though some low learners may have special educational needs while some may not fit into such special education but could study at the normal school system (Mroczka, 2003; Shaw, 2008). These set of slow learners' desire motivation, mentorship and role modeling to cope in meaningful understanding of chemistry concepts (Okafor, 2021; Ajeyalemi, Okafor & Yewande 2015). Gomstyn (2008) stated that approximately 14.1% of children are academic slow learners excluding those with learning disabilities, retardation and autism. Denti (2012) and Johnson & Strange (2009) explained that slow learners in the public rural classrooms find it difficult to identify role models that could motivate them in meaningful understanding of chemistry because most teachers lack competencies in carrying out the tasks. Some slow learners' are deficit in skills, concentration, memory, imagination, self-image, communications, abstract thinking, self-concept and role ideology thereby making them vulnerable of psychosocial problems (Taber, 2012; Woolfolk 2004). Peacock (2012) and Anastasia et al., (2006) suggested incorporation of role

modeling attributes for women who can jungle home and work in the inclusive urban and peri-urban environment. Learners residing in urban setting have forms of livelihood and income generation activities in diverse ways while those in peri-urban are characterized by reliance on agricultural entrepreneurship and role modeling (Bosman, Hessels, Schutjens, Vans,& Verheul, 2012). Peri-urban dwellers are located on the outskirts of cities but retain rural characteristics. This paper considered the influence of role model attributes on secondary school students that scored 20% and below in the urban and peri-urban locations during the 2019 chemistry Mock Examinations and explored the influence of each of those attributes and school locations on secondary school slow learners motivation and understanding of concepts in chemistry.

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1.2 Role Model Attributes as Teaching Tools

Role modelling is a teaching tool for passing knowledge, skills and values on any given profession. Role modeling allows students to learn behaviors without trial and error of doing things (Bandura, 2001). It is a form of learning from experience that uses humanist and social learning theories (Paice, Heard & Moss, 2002). Role modelling involves learning by observing and imitating an achiever of particular disciplines through reflection (Dean, 2014; Fraser, 2014).

Nelms (2010) posited that role modelling is a method of nurturing students' education in acquiring possible skills and knowledge. Role modelling is a mean of motivating and inspiring individuals to achieve their potentials which is commonly found among underrepresented and stigmatized groups (Campbell & Wolbrecht, 2006; Wright,Wang & Neiwill 2007). Fraser (2014) stated that young women need female role models to inspire success and further illustrated that inadequate role models is responsible for under-representation of stigmatized and negatively stereotyped groups in prestige positions. It is also responsible for underrepresentation of girls and women in Science, Technology, Engineering, and Mathematics (STEM); poor leadership roles; the under-representation of individuals from low-income families; living with disability; ethnic and racial minorities (Pereira, 2012; Carter, 2013; Blackett, 2014). Nguyem (2012) and Yousra (2019) suggested that role model attributes could foster achievement and encourage learners of different fields of study. Collet (2002) and Galton (2009) explained that role model motivates learner towards learning by creating sense of curiosity, resourcefulness and abilities to achieve dimensionally. Bosman (2010) stated that right brain often left brain thinking creatively. In addition, confidence is one of the attributes of role models that draw admiration positively from individuals without being arrogant (Bold, 2019). Kind words and praises build self-confidence among slow learners. Role models are expected to show good moral values with sympathy and empathy on people (Peacock 2014).

1.3 Motivation towards Learning

The motivation of students can be external or internal (intrinsic). Extrinsic or external motivation is comprised of recognition and praise for a well done assignment in a given subject while internal or intrinsic motivation encompasses an internal desire to learn about specific science topic or do a particular assignment (Vans, 2004). These researchers contended that intrinsically motivated student processes information deeply and achieves higher scores than those extrinsically motivated. Motivation is one of the factors influencing success or failure of students during teaching-learning (Potvin & Hasni 2014). Woolfolk (2004) recommended that teachers should give students proper attitudinal orientations towards the

learning tasks to be motivated scientifically. Glynn et.al, (2009) posited that motives are rooted in needs, experiences, perceptions, concepts and persuasions which are manifested subjectively in emotions, desires, inclinations, aspirations, interests, ideals and dreams. Some researchers argued that the relationship between students' achievement and motivation to learn chemistry has not been fully determined (Okafor and Yewande, 2015).

1.4 Theoretical Framework

Children observe the behavior of people around them in various ways as role models. Some of their behaviors are influenced by their parents, immediate family members, TV presenters, friends, peer group, teachers and among others (Tousra, 2019). These are role models who provide observable behaviours to be imitated (Bold, 2019). They consciously and unconsciously emulate their role models, encode their behaviors and gradually copy them. The attributes individuals possess are modeled by its admirers who observe behaviors, values, beliefs and attitudes of the person for identification (Yousra, 2019). Bandura (2001) a Social Learning Theorist (SLT) proposed identification of mediational process during the learning process. He believes that humans are active information processors especially on how mental (cognitive) factors are involved during learning process. He explained that observational learning cannot take place unless cognitive processes are functional. These mental factors mediate in the learning process to determine if a new response is acquired. However, individuals do not automatically observe the behaviors of role models and imitate them but must have had prior thought before imitation. This is called mediational processes and it happens between observing a behavior (stimulus) and imitating it or not (response). The four mediational processes proposed by Bandura (2001) include: attention, retention, reproduction and motivation. Any behavior to be imitated must draw attention. An observed behaviors might not always be remembered which obviously prevents imitation. It is therefore very important that a memory of the behavior is formed and retained to be remembered by the observer for reproduction.

1.5 Statement of Research Problem

Persistent poor performance of secondary school students in chemistry during June/July National Examinations Council (NECO) resulting to inadequate preparation during mock examinations have received several research attention (Okafor, 2013-2017). Several studies suggested that teachers inability of citing role models and mentors during teaching has resulted to students conception that chemistry is abstract and cannot be understood meaningfully (Okafor, 2018). Johnson & Strange (2009); Lowenstein (2003) and Perein (2012) stated that role model attributes could motivate and enhance students understanding of science subjects especially the secondary school slow-learners in both urban and peri-urban locations. Students in peri-urban may be disadvantages by the narrow scope of curriculum they use (Johnson et.al. 2009). They might lack access to the government support in the provision of educational resources.(Johnson & Strange, 2009). Maclntyre & Blackie (2012) observed the decline of middle school students interest, attitudes and motivation in chemistry. This paper therefore investigated the influence of role model attributes (creativity; confidence and moral) and school locations (urban and peri-urban) on slow learners motivation and understanding of chemistry concept in Lagos State secondary schools of Nigeria. The objectives of this study were to: (1) Determine the influence of each of the role model attributes (creativity;

confidence and moral) on secondary school slow learners' motivation and understanding of chemistry concept. (2) Ascertain the combined influence of role model attributes (creativity, confidence and moral) on secondary school slow learners motivation and understanding of chemistry concept. (3) Examine the influence of urban and peri-urban locations on slow learners motivation and understanding of chemistry concept. Four null hypotheses guided the study which include:

HO_1: There is no significant influence of role model creativity on slow learners motivation and understanding of chemistry concept.

HO_2: There is no significant influence of role model confidence on slow learners motivation and understanding of chemistry concept.

HO_3: There is no significant influence of role model moral on slow learners motivation and understanding of chemistry concept.

HO_4: There is no significant combined influence of role model creativity, confidence and moral on slow learners (a) motivation and (b) understanding of chemistry concept.

HO_5: There is no significant influence of urban and peri-urban locations on slow learners motivation and understanding of chemistry concept.

2. Research Methodology

The study adopted an ex-post facto research design involving urban and peri-urban Senior Secondary School three chemistry slow learners in two Districts of Lagos State, Nigeria. In the Six Educational Districts of Lagos State, District 4 (urban) and District 3 (peri-urban) were randomly selected due to their locations and outstanding performance of its students during the 2019 Mock Examinations. In each of the two Districts, Two secondary schools whose principals hold Master degree in chemistry education were chosen (2 urban and 2 peri-urban locations).In each of the selected schools, 2019 Mock examination results of students who scored 20% and below in each of the urban and peri-urban locations were considered in the study and are adjudged to be Slow Learners. Items were drawn on chemical bonding to ensure that all the slow learners can attempt the questions as suggested by the SSS3 chemistry teachers of the sampled schools. On the whole, the sample is comprised of 180 slow learners (104 urban and 76 peri-urban locations). Gender issue was not considered in the study. Three instruments used in the study were Chemistry Understanding Test (CUT); Role Model Attributes Scale (RMAS) and Slow Learners Motivational Scale (SLMS)

Chemistry Understanding Test (CUT) was adapted from Norris (2010) with some modifications which covered Twenty-items on Multiple Choice objectives with Four-options. Each correct answer earns one (1) mark such as (1) Which type of bond is formed by the transfer of electrons from one atom to another? (A) Hydrogen bond (B) Coordinate covalent bond (C) Covalent bond (D) Ionic bond (2) Which pair of atoms will share electrons when a bond is formed between them? (A) K and Cl (B) Li and I (C) Br and Cl (D) Ba and I and (3) Given the reaction: $H_2 + Cl_2 \rightarrow 2HCl$ Which of the following statements best describes the energy change as bonds are formed and broken in the reaction?

(A) The breaking of the Cl-Cl bond releases energy. (B) The forming of the H-Cl bond absorbs energy. (C) The forming of the H-Cl bond releases energy. (D) The breaking of the H-H bond releases energy.

Role Model Attributes Scale (RMAS)

RMAS was in two sections, A and B. Section A covered biodata on name of school and location (urban or peri-urban). Section B was adapted from Woolfolk

(2004) with some modifications which covered three attributes of identified role models such as creativity, confidence and moral. Each of the attributes has Five statements which the Slow learners are to tick the statement that appeals to them on a Five point Likert-Scale of Strongly Agree, Agree, Rarely, Disagree and Strongly Disagree. For example, two questions in each of the creativity (Concepts linked to students' daily activities could promote their creativity; Demonstration during practical works enhances creativity among slow learners of chemistry); Confidence (Engaging slow learners in difficult chemistry task as a group builds their self-confidence; Encouraging slow learners to give explanations on responses to questions posed at them could foster confidence in understanding of difficult concepts in chemistry); and Moral (Reporting an experimental observations honestly is an aspect of moral ethics in chemistry; Building positive image, descent dressing and discipline foster moral development).

Slow Learners Motivational Scale (SLMS) was adopted and adapted from Glynn & Brickman (2009) with modifications which contained twenty statements on a Five point Likert Scale of Strongly Agree, Agree, Rarely, Disagree and Strongly Disagree. Example (1) Whenever I answer chemistry questions correctly in the class, my chemistry teacher demands the entire class to clap for me. (2) My parents give me incentives for scoring 50% above in chemistry. (3)Spending quality time in solving chemistry tasks builds critical thinking and creative skills in competing favourably in the global world. The content, construct and face validity of Chemistry Understanding Test (CUT); Role Model Attributes Scale (RMAS) and Slow Learners Motivational Scale (SLMS) instruments respectively were determined. The instruments were administered to 75 secondary school slow learners in two different schools of a District that did not form part of the study. The reliability indices of each of the instruments was determined to be for CUT= 0.79; RMAS=0.72(Creativity) 0.75 (Confidence) and 0.70 (Moral) and SLMS=0.78 showing evidence of internal consistencies. Each of the instruments was administered to the respondents and their responses were analyzed using mean, standard deviation, Pearson Correlation Coefficient, Regression Analysis and independent T-test.

3. Results and Discussions

The results of the findings are discussed as delineated below

Table 1: Descriptive Statistics of Chemistry Understanding Test (CUT)

TEST	N	Minimum	Maximum	Mean	Standard Dev.
Chemistry Understanding Test	180	5	18	10.06	3.37

Table 1 shows that the lowest score obtained in Chemistry Understanding Test (CUT) is 5 while the highest score obtained is 18. More so, the average score of all the respondents is 10.06 with standard deviation of 3.37. This implies that the slow learners have average understanding of chemistry concept.

HO_1: There is no significant influence of role model creativity on slow learners' motivation and understanding of chemistry concept.

Table 2: Correlation Analysis of Role Model Creativity influence on Slow Learners Motivation and Understanding of Chemistry Concept

		Motivation	Understanding
Role model Creativity	Pearson Correlation	0.57	0..51
	Sig. (2-tailed 0.05)	0.00	0.02
	N	180	180

Source: *Field Survey, 2021*

The influence of role model creativity result on Table 2 shows a Pearson correlation values of 0.57 and 0.51 with significant values of 0.00 and 0.02 for motivation and understanding of chemistry concept respectively by the secondary school slow learners'. These imply that role model creativity has strong positive influence on slow learners' motivation and understanding of chemistry concept since the significant values for motivation and understanding are less than 0.05 and the correlation values are greater than 0.05. Hence, null hypothesis one is rejected.

HO_2: There is no significant influence of role model confidence on slow learners motivation and understanding of chemistry concept.

Table 3: Correlation Analysis of Role Model Confidence influence on Slow Learners Motivation and Understanding of Chemistry Concept

		Motivation	Understanding
Role model Confidence	Pearson Correlation	0.235	0.173
	Sig. (2-tailed 0.05)	0.001	0.02
	N	180	180

Source: *Field Survey, 2021*

Table 3 shows Pearson correlation analysis results of .235 and .173 with significant values of .001 and 0.02 for motivation and understanding of chemistry concept respectively. These have shown that role model confidence has a weak positive influence on slow learners motivation and understanding of chemistry concept respectively since the obtainable correlation values are extremely lower than the maximum expected correlation value of one (1) for the role model confidence to influence slow learners' motivation and understanding of chemistry concept. These show a significant influence of role model confidence on slow learners motivation and understanding of chemistry concept since the significant values for motivation and understanding of chemistry concept are extremely lower than 0.05. Thus, the rejection of null hypothesis 2.

HO_3: There is no significant influence of role model moral on slow learners' motivation and understanding of chemistry concept.

Table 4: Correlation Analysis of Role Model Moral influence on Slow Learners Motivation and Understanding of Chemistry Concept

		Motivation	Understanding
Role model Moral	Pearson Correlation	0.142	0.130
	Sig. (2-tailed 0.05)	0.057	0.081
	N	180	180

Source: *Field Survey, 2021*

Result in Table 4 shows a weak influence of role model moral on slow learners' motivation and understanding of chemistry concept. This is depicted on extremely low Pearson correlation values of .142 and .130 with significant values of .057 and .081 for motivation and understanding of chemistry concept respectively when compared to the expected maximum value of 1 for all correlational analysis. It is also observed that the significant values of .057 and .081 for motivation and understanding of concept are greater than 0.05 significant coefficients. Hence, this implies that role model moral will not have any influence on slow learners motivation and understanding of chemistry concept. Therefore, the hypothesis 3 is accepted

HO_4: There is no significant combined influence of role model creativity, confidence and moral on slow learners (a) motivation and (b) understanding of chemistry concept.

Table 5a: Regression Analysis of Combines Influence of Role Model Creativity, Confidence and Moral (attributes) on Secondary School Slow Learners Motivation in Chemistry.

	Sum of Square	Df	R Square	Mean Square	F	Sig.	Remark
Regression	32.195	3	.333	.57710	29.22	0.00	Significant
Residual	64.63	1	179	.367		p<0.05	
Total	96.82	6	179				

Source: *Field Survey, 2021*

As shown in Table 5a, the role model creativity, moral and confidence when combined account for 33.3% of the total variance on secondary school slow learners motivation in chemistry with R Square value of .333 at p<0.05 as well as corresponding F-value of 29.22 and Significant value of 0.00 which is less than 0.05.These show that role model creativity, confidence and moral (attributes) when combined could significantly influence slow learners' motivation in chemistry. Therefore, null hypothesis 4 is rejected.

Table 5b: Regression Analysis of Combined Influence of Role Model Creativity, Confidence and Moral (attributes) on Secondary School Slow Learners Understanding of Chemistry Concept

	Sum of Square	Df	R Square	Mean Square	F	Sig.	Remark
Regression	398.7	3	.256	.506132.99	20.16	0.00	Significant
Residual	1161.27	176		6.598		p<0.05	
Total	1560.24	179					

Source: *Field Survey, 2021*

Table 5b has shown the combined influence of role model creativity, moral and confidence on secondary school slow learners understanding of chemistry concept with account of 25.6% of the total variance and R Square value of .256 at p<0.0 as well as corresponding F-value of 20.16 at significant value of 0.00 which is less than 0.05. These have shown that role model creativity, confidence and moral (attributes) when combined could significantly influence slow learners' understanding of chemistry concept. Therefore, null hypothesis 4b is also rejected.

HO_5: There is no significant influence of urban and peri-urban locations on slow learners Motivation and (b) understanding of chemistry concept.

Table 6a: Independent Sample t-Test of the influence of Urban and Peri-Urban Locations on Secondary School Slow Learners Motivation in Chemistry

School Location	N	Mean	Mean Diff.	Std	Df	t-cal	t-tab.	Sig.	Remark
Urban	104	4.58		.51					
			0.46		178	4.57	1.96	.04	Significant
Peri-Urban	76	4.12		.81					

Source: *Field Survey, 2021*

Table 6a shows 0.46 as the mean difference between the mean score of urban (4.58) and that of pre urban (4.12) on slow learners' motivation in chemistry. This implies the influence of school locations on slow learners' motivation in chemistry with urban having greater influence than the peri-urban location (urban>peri-urban). To ascertain if there is significant influence or not, an independent sample t-test result in Table 5a shows that the t-cal (4.57) is greater than the t-table (1.96) at 0.05 level of significance. Hence, the null hypothesis 5a is accepted since the significant value of .04 is less than 0.05 thereby indicating no significant influence of urban and peri urban on slow learners' motivation in chemistry.

Table 6b: Independent Sample t-Test of the influence of Urban and Peri-Urban Locations on Secondary School Slow Learners Understanding of Chemistry Concept

School Location	N	Mean	Mean Diff.	Std	Df	t-cal	t-tab.	Sig.	Remark
Urban	104	13.09		2.48					
			1.82		178	4.40	1.96	.01	Significant
Peri-Urban	76	11.27		3.04					

Source: Field Survey, 2021

Table 6b shows 1.82 as the mean difference between the mean score of urban (13.09) and the mean score of peri-urban (11.27) on slow learners' understanding of chemistry concept. There is an indication that urban has greater influence than the peri-urban (urban>peri-urban) on slow learners' understanding of chemistry concept. To ascertain if school locations ((urban and peri-urban) have significant combined influence or not on slow learners' understanding of chemistry concept, independents sample t-test in Table 5b shows that the t-cal. (4.40) is greater than the t-table (1.96) at 0.05 level of significance. Hence, the null hypothesis 5b is accepted since the significant value of 0.01 is less than 0.05 indicating no significant influence of urban and peri-urban on slow learners understanding of chemistry concept.

It is generally observed that the mean difference between urban and peri-urban locations for motivation is 0.46 while the mean difference between urban and peri-urban locations for understanding of chemistry concept by slow learners is 1.82. The evidence is that degree of difference for understanding of chemistry concept (1.82) is greater than that of motivation (0.46). Though no significant influence of urban and peri-urban locations, but their influence on slow learners' understanding of chemistry concept is higher than that of motivation.

4. Discussion on the Findings

The results obtained are discussed below:

The Influence of Role Model Creativity on Secondary School Slow Learners' Motivation and Understanding of Chemistry Concept

The result in Table 2 shows that role model creativity has a strong positive influence on slow learners' motivation

and understanding of chemistry concept. This is in agreement with the work of Jaussi and Dionne (2003) who stated that leaders' unconditional behaviors could influence subordinates creativity. The findings also corroborates with Bold (2019) explanation that a creative role model motivates learner towards achieving learning outcomes and building strong curiosity, resourcefulness and abilities to perform excellently. The result also agrees with Bosman (2010) statement that the right brain often leave brain thinking creatively. It becomes necessary that slow learners should identify their role models for inspiration on how to improve in meaningful understanding of chemistry concept with positive motivation for resilience in self-actualization.

The Influence of Role Model Confidence on Secondary School Slow Learners' Motivation and Understanding of Chemistry Concept

Table 3 result shows that role model confidence has a weak positive influence on slow learners motivation and understanding of chemistry concept. Though confidence influences healthy accomplishment without arrogance. The result negates the work of Bold (2019) who posited that kind words and praises build self-confidence of the learners and draw positive admiration. These words used could not produce strong positive influence on the slow learners. Conversely, confidence was supposed to be a very strong role model attribute for encouraging the slow learners in executing actions on how to think, behave and feel for attainment of chemistry learning outcomes. The weak influence of role model confidence on slow learners might result to poor understanding in trusting the learners' judgement.

The Influence of Role Model Moral on Secondary School Slow Learners' Motivation and Understanding of Chemistry Concept

Table 4 result shows that the role model moral did not have any significant influence on slow learners motivation and understanding of chemistry concept. This negates the statement by Yousra (2019) who observed that children behaviors are influenced by people around them such as parents, immediate family members, TV presenters, friends, peer group and teachers as role models in fostering morality education. Students and slow learners in particular should be taught moral values and how to respect the rights of other individuals especially in accepting responsibility of their own learning (Gomstyn, 2008).

Combined Influence of Role Model Creativity, Confidence and Moral (Attributes) on Secondary School Slow Learners Motivation and Understanding of Chemistry Concept

The result in Tables 5a and 5b show significant combined influence of role model creativity, moral and confidence on secondary school slow learners motivation and understanding of chemistry concept. This supports the statement of Bold (2019) who posited that it is important to be a positive role models to earn trust, confidence and respect on any action being watched and imitated. According to Bosman (2010) creativity requires sense of curiosity, openness and resourcefulness to pursue academic goal and objectives. Therefore, academic role models should be humorous, draw confidence, respect and moral virtues for encouraging the slow learners in actualizing their potentials in secondary school chemistry.

The Influence of Urban and Peri-Urban Locations on Secondary School Slow Learners Motivation and Understanding of Chemistry Concept

Results in Tables 6a and 6b show non-significant influence of urban and peri urban on secondary school slow learners'

motivation and understanding of chemistry concept. This corroborates with the assertions of Carter (2013) and Johnson and Strange (2009) that slow learners from low income peri-urban and rural environment hardly identify role models that could motivate them in meaningful understanding of chemistry concept. Though the mean difference on slow learners' understanding of chemistry concept at both urban and rural locations is greater than the mean difference for motivation. The finding supports Bosman, Hessels, Schutjens, Vans & Verheul (2012) who stated that learners residing in urban setting have livelihood and income generating activities while those in peri-urban are characterized by reliance on agricultural entrepreneurship.

5. Conclusion

There is a growing awareness of the importance of role model attributes in harnessing learners' imagination for positive social change. Role modeling is a process for acquiring inspirational virtues of creativity, confidence and morals which might influence the learning abilities of slow learners' in academic achievement. Schools and educational institutions have roles to play in enhancing and nurturing secondary school students' creativity, confidence and morals consciously and consciously by ensuring that every student irrespective of his/her ability levels impersonates a positive role model but sadly, the educational system in Nigeria often fails to support teaching by imitating role model attributes due to insistence focus on vocational training. Therefore, The role models should redefined and expressed some of these attributes to be imitated by the slow learners for better achievement and career aspiration in chemistry. If an individual wants to be treated with respect, honesty confidence, there should be exhibition of positive behaviors of the role models who serve as confidant, counselor and objective adviser for performance improvement of secondary school slow learners in chemistry.

6. Recommendations

The following recommendations are made:

- Education stakeholders should ensure that learners of different abilities are taught virtues they admire in their role models especially creativity, confidence and moral which foster motivation and meaningful understanding of chemistry concept.
- There should be an inclusion of role model attributes in the senior secondary school chemistry curriculum and its implementation for slow learners' performance improvement.
- Slow learners should be motivated in identifying their talents to be able to follow their academic passion positively.
- School administrators, teachers and parents should be role models to the students by setting standard with good behaviors, self-confidence, decent dressing, positive attitude and values on what they expect from others for better accomplishment.
- Education stakeholders in both urban and peri-urban locations should be of high moral standard within and outside the school premises because learners look up to them and aim at becoming like them in future.
- Teachers should constantly give assignments and other class work to the slow learners' emphasizing on some role model attributes that will help them appropriately in identifying learning difficulties and offering possible solutions.

- The teacher and parents are the slow learners' role models, therefore, they should set good examples by creating enabling environment where self-confidence, creativity and moral virtues are upheld.
- Special attention should be given to slow leaners' in the rural areas who might find it difficult identifying their role models attributes to be observed and copied. Also learners in the urban location should uphold ethical behaviors of their role models acquired through direct and indirect instructions that promote self-regulation, self-efficacy, motivation and meaningful understanding of chemistry concept.

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