INTELLECTUAL STIMULATION PRACTICES ADOPTED BY PRINCIPALS FOR ENHANCING TEACHERS' TECHNOLOGY INNOVATION IN PUBLIC SECONDARY SCHOOLS IN ANAMBRA STATE.

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ABSTRACT
Despite the global era of technology and its impact on the economic development of the country, some teachers are still not competent in the use of technology for creativity and innovation in the curriculum delivery. This study becomes imperative to ascertain the intellectual stimulation practices adopted by principals for enhancing teachers' technology innovation in public secondary schools in Anambra State. The study adopted a descriptive research design. The population of the study was 263 public principals and 505 principals of private secondary schools. Two research questions guided the study and two hypotheses formulated. A simple random sampling technique was used to select a sample of 381, comprising 129 principals of public and 252 principals of private secondary schools in Anambra State. Questionnaire was used to collect data and data was analyzed using descriptive and inferential statistics. To answer the research questions, the responses from the research instrument were analyzed using frequency and percentage scores. Validity of the instrument was determined by consulting 3 experts, 2 experts were from the department of educational management and Policy, while 1 expert was from the department of Educational Foundations (Measurement and Evaluation Unit) both from Nnamdi Azikiwe University, Awka Anambra state, in order to establish the face and content validity in line with the purpose of the study. The scores obtained after collating the questionnaire were measured using Cronbach Alpha to determine the inter consistency of the instrument and whose reliability yielded a coefficient ® value of 0.74, indicating that the instrument was reliable and dependable to conduct the study. However, the two null hypotheses were tested using Chi-Square statistic 0.05 level of significance. Result showed that principals recommend teachers for professional training and also involve teachers in decision making among others. It was recommended that principals should emphasize on the expertise on the delivery of assigned work.

Keywords: Intellectual Stimulation Practices, Principals, Teachers' Technology Innovation

INTRODUCTION

Schools in the 21st century are facing diversified challenges in effort to remain afloat and survive the dynamic environmental conditions. However, the school management are forced to review their strategies thus opening up various innovative ways in the internal processes for competitive advantage. The environment has also become dynamic with forces of globalization, changing how things are done in so many new ways. Therefore, teachers are expected to exhibit high levels of technology competence, motivation and job satisfaction in curriculum delivery. On the study by Leiponen (2008) on knowledge intensive organization identifies the intellectual assets as a key factor in driving innovative behavior in institution. Thus, these institutions highly depend on how well knowledge is stimulated for competitive advantage. In such institution, creativity and innovation is the key objective where investment in incentives and knowledge creation is a strategy for both survival and success in the institution they operate in.

The term intellectual stimulation traces its origin in the work that has been advanced on the model leadership called transformational leadership. The term has been defined as the capability by the leader to take risks, solicits followers' ideas and stimulates creativity and innovation by use of various tools such as asking questions, thinking deeply and figuring out better ways of achieving the various roles (Bass, 2008). Also, intellectual stimulation refers to getting followers to question the tried and true methods of solving problems while encouraging them to improve upon those methods. It also involves the consistent effort of the leader to stimulate subordinates to be innovative and creative as well as encouraging them to question tasks reframe problems and approach them in new ways (Aydin, 2012).

In other words, intellectual stimulation involves teachers developing new and different solutions to common problems and doing work in new ways.

Tepper (2018) asserted that it is the intellectual stimulating behavior in the transformational leader that makes team members to respond better to various situation especially when they face various challenges at their work place. Whereas each individual has a specific task and duties, most institutions have embraced team and group work to take advantage of synergy in performance. Avolio (2010) posited that intellectual stimulation brings the best out of a team for a higher performance. No wonder Jaroliya and Gyanchandani (2020) argued that the impact and role of transformational leadership in an IT team environment is one of the recent studies linking intellectual stimulation and the technological innovativeness of the team. In furtherance, a principal who practices intellectual stimulation motivates teachers to higher technological performance through providing them with proper direction and stirring the spirit of creativity.

Relatedly, Liepman (2004) asserted that principals operating with intellectual stimulation promote critical thinking and problem solving to make the school better, challenging the status quo, encouraging teachers to create innovative solutions and alternatives to current practice. Contributing to the discussion, Joo and Lim (2013) explained that intellectual stimulation involves exciting individuals' cognitive ability, so that teachers can engage in independent thinking in the course of carrying out job responsibilities in school. Also, Dansereau, Yammarino, Markham, Alutto and Newman, (2013) opined that by creating intellectual stimuli, principals can excite teachers' ability to experiment with new practices and generate ideas that can greatly impact job performance. It is obvious that when the above listed ways are applied, teachers' knowledge of, and abilities in handling educational issues using technology will be greatly enhanced.

Technological innovation is when inventions of new things or new ways of doing things are transformed into usable devices and applications to enable organisations and users of technology to take advantage of important opportunities, to cope with problems or environmental threats. Technological innovation plays an important role in society for satisfying needs, achieving goals and solving problems of users of technology directed to support corporate, industrial, economic and social change for competitive advantage of firms and nations and improving overall human progress (Coccia, 2019). Explaining further, innovation is not a unified phenomenon: some innovations disrupt, destroy and make obsolete established competence, others refine and improve. Thus, different kinds of innovation require different kinds of organizational environments and different managerial skills. According to Coccia and Watts (2020), technological innovation is underpinned in technology, which can be defined as a complex system composed of more than one entity or subsystem of technologies and a relationship that holds between each entity and at least one other entity in the system for achieving specific goals.

However, principals are the personnel manager in every secondary school, and should exhibit strong and visionary leadership by applying intellectual stimulation for enhancing teachers' technology innovation in secondary schools. This could be done through soliciting for teachers' ideas, taking risk, encouraging teachers to do critical thinking, encouraging teachers to be creative and innovative, sending teachers on professional training, among others. This has equally been our major issue of concern that has continued to draw attention from various teachers in the public secondary schools in Awka south, Anambra state. It was observed that teachers are no longer sent on professional development to update their knowledge with that of the 21st century. Teaching at this 21st century, no longer count on paper and pen and teacher centered with less student participation; but the use of technological devices to facilitate learning. When teachers are not given opportunity for such training, they will not be committed to duties and will continue to use complicated methods of teaching which students find difficult to understand, thus not achieving the set goals. It is against this backdrop that the study sought to investigate intellectual stimulation practices of principals for enhancing teachers' technology innovation in public secondary schools, Awka south, Anambra State.

PURPOSE OF THE STUDY

The main purpose of the study was to ascertain principals' application of intellectual stimulation for enhancing teachers' technology innovation in public secondary schools in Anambra State. Specifically, the study sought to determine principals' :

1. Recommendation of teachers for professional development for enhancing teachers' technology innovation in secondary schools in Anambra State;
2. Involvement of teachers in decision making for enhancing teachers' technology innovation in secondary schools in Anambra State

RESEARCH QUESTIONS

The following research questions guided the study.

1. What percentage of principals recommend teachers for professional development for enhancing teachers' technology innovation in secondary schools in Awka South, Anambra State?
2. What percentage of principals involve teachers in decision making for enhancing teachers' technology innovation in secondary schools in Awka South, Anambra State.

HYPOTHESES

The following formulated null hypotheses were tested at 0.05 level of significance.

1. There is no significant difference in the responses of principals of public and private secondary schools on the principals' recommendation of teachers for professional development for enhancing teachers' technology innovation in secondary schools in Anambra State.

2. There is no significant difference on the responses of principals of public and private secondary schools on principals' involvement of teachers in decision taking for enhancing teachers' technology innovation in secondary schools in Anambra State.

METHOD

The descriptive survey design was adopted for the study, which sought out to collect data on the opinions of the respondents (principals of both private and public secondary schools). This design was employed in order to conduct a field survey and gather data from only the principals (respondents), within the public secondary schools in Awka South, Anambra state. According to Nworgu (2015), the descriptive survey design aims at collecting data on subjects and describing it in a systematic manner, because of its observatory nature of describing and interpreting situation in their realities. The population consisted of a total of 263 principals of public ssecondary schools and 505 principals of private secondary schools in public secondary schools in Awka South, Anambra state. The sample size for this study comprised 381 respondents comprising 129 principals of public secondary schools and 252 principals of private secondary schools. The selected clusters were sampled from the 263 principals of public secondary schools and 505 principals of private secondary school in the State. This sample consisted 50 percent of the population of principals from each education zone. The selection was done using the simple random sampling technique without replacement. This was to ensure that the subgroups in the population participated in the study in the same proportion, as they existed in the population. To do this, the simple balloting technique was used to select randomly principals in Awka South which was carried out by writing yes and 'No' alternatives on pieces of papers, folded them and two research assistants were asked to pick. Those with 'Yes' alternatives were selected for the sampling, while those having No alternatives were not selected. The sample represented fifty percent (50%) of the entire population of the principals.

The main instrument for data collection was researcher's designed questionnaire which consisted 7 items and drawn in a 2-point scale of Do not Apply (DA) and Apply (A) responses designed for answering the research questions. The research instrument titled Intellectual Stimulation practices of principals' questionnaire (ISPPQ), which contained 7 items and designed on a 2-point scale formed the basis for the primary data and was equally used by researcher to collect data based on mean and standard deviation. Validity of the instrument was determined by consulting 3 experts, 2 experts were from the department of educational management and Policy, while 1 expert was from the department of Educational Foundations (Measurement and Evaluation Unit) both from Nnamdi Azikiwe University,

Awka Anambra state, in order to establish the face and content validity in line with the purpose of the study. The scores obtained after collating the questionnaire were measured using Cronbach Alpha to determine the inter consistency of the instrument and whose reliability yielded a coefficient ® value of 0.74, indicating that the instrument was reliable and dependable to conduct the study. The responses from the research instrument were analyzed using frequency and percentage scores. The data collated were analyzed using descriptive and inferential statistic. However, the two null hypotheses were tested using Chi-Square statistic 0.05 level of significance. This was used in order to determine whether there could be any significant difference between the expected and observed value. The p-value was used to determine the significance of the difference in the responses of principals of public and private secondary schools. A null hypothesis was said not to be significance because the probability p- value obtained was less than the stipulated significance level of 0.05. On the other hand, because the probability P- value obtained was greater than the significance level of 0.05 a null hypothesis was said to be significant.

RESULTS

Research Question One: What percentage of principals recommend teachers for professional development for enhancing teachers' technology innovation in secondary schools in Anambra State?

Table 1: Frequencies and Percentages on Principals recommendation of teachers for professional development for Enhancing Teachers' Technology Innovation

		PUBLIC (n= 129)					PRIVATE (n=252)				
		YES		NO			YES		NO		
		Freq	%	Freq	%	Remark	Freq	%	Freq	%	Remark
1.	Give teachers room to express their views.	92	71.3	37	28.7	Apply	188	74.8	64	25.4	Apply
2.	Emphasize on expertise in the delivery of assigned work.	80	62.0	49	38.0	Apply	67	26.6	185	73.4	Do not Apply
3.	Encourage creativity in the delivery of assigned task.	80	62.0	49	38.0	Apply	164	65.1	88	34.1	Apply
4.	Pay attention to the development of teachers through in-service training	75	58.1	54	41.9	Apply	176	69.8	76	30.2	Apply

Table 1 shows that public secondary school principals apply all the four listed items on principals' recommendation of teachers for professional development for enhancing teachers' technology innovation in secondary schools in Anambra State.

Research Question Two: What percentage of principals involve teachers' in decision making for enhancing teachers' technology innovation in secondary schools in Anambra State?

Table 2: Frequencies and Percentages on Principals' involvement of teachers in decision making for Enhancing Teachers' Technology Innovation

		PUBLIC (n= 129)					PRIVATE (n=252)				
		YES		NO			YES		NO		
		Freq	%	Freq	%	Remark	Freq	%	Freq	%	Remark
1.	Give room for innovation in the performance of teachers' assigned duties.	74	57.4	55	42.6	Apply	193	76.6	59	23.4	Apply
2.	Ensure that there is opportunity for the exchange of ideas among teachers by involving them in decision making.	100	77.5	29	22.5	Apply	173	68.7	79	31.3	Apply

3.	Ensure that teachers are allowed to attend correspondence courses which will enable them improve their knowledge base.	111	86.0	18	14.0	Apply	168	66.7	84	33.3	Apply

Hypothesis 1: There was no significant difference on the responses of principals of public and private schools on principals' recommendation of teachers for professional development for enhancing teachers' technology innovation in secondary schools in Anambra State.

Table 3: Chi-square analysis of the difference in the responses of principals of public and private schools on the principals' recommendation of teachers for professional training for enhancing teachers' technology innovation

		PUBLIC (n=129)				PRIVATE (n=252)						
		YES		NO		YES		NO				
		Freq	%	Freq	%	Freq	%	Freq	%	X^2	P-value	Remark
1.	Give teachers room to express their views.	80	62.0	49	37.98	170	67.5	82	32.54	1.09	.49	Sig
2.	Emphasize on expertise in the delivery of assigned work.	80	62.0	49	38.0	67	26.6	185	73.4	5.23	.02	Sig
3.	Encourage creativity in the delivery of assigned task.	80	62.0	49	38.0	164	65.1	88	34.1	.38	.55	Not Sig
4.	Pay attention to the development of teachers through in-service training	75	58.1	54	41.9	176	69.8	76	30.2	27.92	.00	Sig

Table 3 shows that the calculated p-values in three out of the four listed items were less than the stipulated level of significance (0.05). This showed that there was a significant difference in the responses of principals of public and private schools on their recommendation of teachers for professional development for enhancing teachers' technology innovation in secondary schools in Anambra State. The null hypothesis of significant difference between the groups was therefore not rejected.

Table 4: Chi-square analysis of the difference in the responses of principals of public and private schools on the principals' involvement of teachers in decision making for enhancing teachers' technology innovation

		PUBLIC (n=129)				PRIVATE (n=252)						
		YES		NO		YES		NO				
		Freq	%	Freq	%	Freq	%	Freq	%	X^2	P-value	Remark
1.	Give room for innovation in the performance of teachers' assigned duties.	74	57.4	55	42.6	193	76.6	59	23.4	15.03	.00	Sig
2.	Ensure that there is opportunity for the exchange of ideas among teachers by involving them in decision making.	100	77.5	29	22.5	173	68.7	79	31.3	3.30	.04	Sig

3.	Ensure that teachers are allowed to attend correspondence courses which will enable them improve their knowledge base.	111	86.0	18	14.0	168	66.7	84	33.3	16.34	.00	Sig

Table 4 shows that the calculated p-values in all the three listed items were less than the stipulated level of significance (0.05). This showed that there was a significant difference in the responses of principals of public and private schools on their involvement of teachers in decision making for enhancing teachers' technology innovation in secondary schools in Anambra State. The null hypothesis of significant difference between the groups was therefore not rejected

Discussion

Intellectual Stimulation practices adopted by principals for Enhancing Teachers' Technology Innovation

The result of data analysis showed that principals of public school apply all the four listed items on principals' recommendation of teachers for professional development for enhancing teachers' technology innovation in secondary schools in Anambra State.

This key element of intellectual stimulation includes, providing opportunities for teachers to express their views, encouraging creativity in the delivery of assigned task, laying emphasis on expertise in the delivery of assigned work and ensuring that there is opportunity for the exchange of ideas among teachers by involving them in decision making, among others were evidenced in the leadership style of the public school principals that were sampled.

When teachers express their views and exchange their ideas, the wisdom of the saying "two good heads are better than one" becomes manifest. In the course of such interactions, creativity in the delivery of assigned tasks is often the case. Such creativity in turn enhances the achievement of educational goals since it improves teachers' technology innovation. The involvement in decision making affords the teachers some recognition. They realize that the achievement of educational goal is not just the principals' assignment but a task for all in their various capacities. Such pulling together of energy makes the job less difficult for all, on the one hand, and improves job performance, on the other.

This finding is opposed to the earlier report by Anantha, Abdul and Mohammad (2016) which indicated that the level of principals' application of intellectual stimulation was moderate. This deviation in finding could be attributed to location difference. This is in the sense of principals in Anambra State having adequate knowledge of how to intellectually stimulate teachers. The result of data analysis also showed that the difference in the responses of public and private principals on the intellectual stimulation practices of principal for enhancing teachers' technology innovation in secondary schools in Anambra state was significant. The difference could be as a result of not having other respondents (teachers or students) which would have been used as a check on principals' responses.

Recommendation

It was recommended that principals should lay emphases on expertise in delivery of assigned work

Conclusion

The conception of intellectual stimulation practices of a principal for teachers' technological innovation is associated with the idea of teachers' progress in professional development for effective curriculum delivery. When teachers are technologically innovated, they take advantage of important opportunities, cope with consequential problems, and adapt to continuous environmental change. It was concluded that there was a significant difference in the responses of principals of public and private schools on

intellectual stimulation practices of principals for enhancing teachers' technology innovation in secondary schools in Anambra State.

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