EVALUATION OF THE IMPLEMENTATION OF THE NATIONAL CURRICULUM FOR BASIC SCIENCE IN UPPER BASIC SCHOOLS IN IMO STATE, NIGERIA

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Abstract
This research was designed to evaluate the implementation of the national curriculum for Basic Science in Imo State, Nigeria. Six research questions and two null hypotheses were formulated for the study. Related literature was reviewed and a theoretical framework using the CIPPC evaluation model was adopted in the study. A descriptive survey research design was used and a sample size of 269 from a total population of 820 teachers was selected using the Taro Yarmanes (1969) formula for finite population. The instrument used for data collection was a modified Likert type of rating scale structured questionnaire, which was validated by three experts in Measurement and Evaluation. Cronbach alpha reliability method was employed to obtain a reliability index of 0.81. Data analysis was carried out using Mean and Standard Deviation. Results of the analysis show that students of Upper Basic school level were not performing creditably in the Basic Education Curriculum examination due to poor implementation as a result of such factors like inadequacy of provision of necessary instructional materials, inadequate and poor quality teachers, non-use of recommended instructional methods and appropriate techniques etc. It is recommended among others that government should equip schools with Basic Science facilities and materials required for implementating the curriculum.

Key Words: Basic Education, Basic Science, Evaluation, Implementation, and National Curriculum.

Introduction

Basic Science is the bedrock to advance studies in science, technology and engineering, (NERDC, 2012).It stimulates in the child the tendency to explore his environment and find out the why of things. In that bid, scientific questions are raised and in trying to provide appropriate answers to such questions, the child discovers new ideas. Science is an activity that involves the three domains of behavior that interplay to produce desired results.We live in a world of science and it affects our lives every day. Meanwhile, the impact of science on the life of man has become more striking now than ever before that any nation without scientific prowess now risks being alienated from the global village (Oyedeji, 2013).

However, science was taught in our schools as Integrated Science and because it was not achieving the curriculum goals for technological advancement for which it was designed, there was a curriculum reform in 2006 whose goals were to reflect depth, appropriateness and inter-relatedness of the curricula content (Idoko, 2010). This reform broke the Integrated Science into Basic science and Basic technology, but later reviews made the subject to be studied this day as Basic Science, Basic Technology, Physical and Health Education, and Information Technology at the Upper Basic level of the education system. Basic Science is the foundation upon which other science subjects operate. Students who wish to study Medicine, Nursing, Pharmacy, Forestry, Fisheries, Botany, Zoology and other vocational courses like technical education and entrepreneurship studies must first start with Basic science at the lower level of the education industry.

Meanwhile the main objectives of the Basic Science programme according to the National Policy on Education (2013) include:

- To prepare students to acquire laboratory and field skills
- Inculcation of meaningful and relevant knowledge in Basic Science
- The ability to apply scientific knowledge to everyday life in matters of personal, and community health and agriculture, reasonable and functional scientific attitude.

As a matter of fact, one is not sure whether the above stated objectives are achieved as documented evidences of the National Research Council (2013) have shown that most lower, middle and upper basic school teachers in Nigeria by standards do not know the recommended teaching methods in the curriculum talk less of applying them. Furthermore, some research reports have shown that even though many students seem to find the subjects very interesting, many of them still obtain poor results year in year out in the Basic Education Curriculum Examination (BECE). Reasons according to Sambo et al. (2014) are such factors like language problems and poor attitudes to teaching and learning of the subject by both teachers and students.

The Federal Government of Nigeria's National Policy on education (2004) statement that there should be equal educational opportunities to individuals irrespective of gender does not only hinge on all levels of schooling but also on all types of subjects and professionalization. Obviously, in Imo State the equal educational opportunities being clamoured for seem to be shifting towards the female side because practically as observed in the school system now the get-quick rich syndrome and low teaching incentives has bewildered the males from taking teaching jobs and has given the females to flood the schools, hence many Basic Science teachers are females and many more females pick interest in the learning of Basic Science and other science related subjects and are seen taking the lead. These female students now aspire to excel in such grey areas that formerly appeared to be male subjects. With new trends in education, many cultural biases have been broken and Basic Science teachers try to teach the subject to the best of their abilities but the only problem is that some of them are not professionals in Basic Science, and their

teaching methods/techniques seem to vary. This may be from the fact that some of them haven't seen the curriculum document what more knowing the teaching methods recommended therein.

Earlier than now, it has always been thought and said that males of ten times perform better in science and science related subjects: integrated science, mathematics and the likes and this might have been from the obvious fact that more males enroll and pursue such science related courses like engineering, medicine, mathematics, botany, zoology, anthropology and other science related professional courses, situation that seems to make those professions as if they are solely meant for males only. Such insinuation needs to be empirically investigated and proved beyond doubts because sinice about four years now, the above insinuation seem to be swinging to the opposite direction where in most secondary schools in the zone under study, observation shows that majority of the Basic Science teachers are females, and the overall performance of Basic Science students in Basic Education Curriculum (BEC) examination for the past four years now learn towards the females beating the males handsdown. In rank order assessment, the females occupy the first and second positions in Basic Science results while the males manage to take the third position (Source: Exam Development Centre Owerri).

A closer look at the above circumstance shows that the performance of students on the Basic Science curriculum lies heavily on the implementation process. Implementation of the revised curriculum commenced in September, 2008 and the first batch of students graduated in June, 2010 after sitting for the BECE. Examining the result of that year and other subsequent years, one finds out that those results have been poor and not as impressive as expected since inception compared to other subjects results. On where the problem lies, two things must be focused on: curriculum implementation and curriculum evaluation for it is one thing to implement the curriculum and another thing to evaluate the implementation process. Curriculum implementation according to Ali (2013) specifically entails the interaction between the curriculum planner, the teacher, the learners and the learning environment. He maintained that the teacher is the key player in the implementation process since what he does with it in the classroom determines to a larger extent whether the set goals would be achieved or not.Invariably many researchers have discovered that many impeding factors have been carelessly ignored during the implementation process and thus has created big gap in the successful implementation of the curriculum and consequent achievement of curricula objectives (Ifeobu, 2014 & Sambo et al., 2012).

However, the result of curriculum implementation is often assessed through curriculum evaluation because it is the process of evaluation that exposes in a comprehensive way the worth and true picture of what happens to the curriculum at its implementation. If the evaluation process is faulty, many impediments to the implementation of the curriculum would not be fully discovered (Aguokagbuo, 2014).Curriculum can be evaluated in a number of ways using different evaluation models but the model adopted for this study is the context, input, process, product

and constraint (CIPPC) evaluation model propounded by Stufflebeamin 2009. The CIPPC model was chosen for this study because of its comprehensiveness, purposefulness and acceptability, and often used by curriculum evaluators in different parts of the world (Oladimji, 2013).Consequently, as every educational programme needs to be periodically monitored to assess the extent to which the objectives are being achieved, there is need to evaluate the implementation of the national curriculum for the Basic science subject examining such variables like availability of the curriculum document in schools, teachers use of the recommended teaching methods, quantity and quality of teachers who implement the curriculum, evaluation techniques employed by teachers for feedback, learner factor, 21st century pedagogy factor, physical facility factor, gender stereotype factor, financial factor and lack of technology- driven environmental factors, among others.

The main purpose of this study is to evaluate the implementation of the national curriculum for Basic Science in Upper Basic schools in Imo State, Nigeria. Specifically, the study sought to:

1. Determine the availability of the curriculum document in schools.
2. Find out the level of use of the recommended methods by teachers as enshrined in the curriculum.
3. Find out the quality of teachers who implement the curriculum.
4. Find out the quantity of Basic Science teachers that implement the curriculum in schools.
5. Identify the evaluation techniques employed by teachers in assessing for feedback.
6. Find out other factors that militate against proper implementation of the curriculum.

Research Questions

The following research questions guided the study:

1. To what extent is the national curriculum document available in our schools?
2. To what extent do teachers use the recommended instruction methods enshrined in the curriculum for teaching?
3. What are the quality of teachers that implement the curriculum in our schools?
4. What are the quantity of Basic Science teachers that implement the curriculum in schools?
5. What are the evaluation techniques employed by teachers in assessing their learners for feedback?
6. What other factors militate against the proper implementation of the curriculum?

Research Hypotheses

1. There is no significant difference between male and female teachers mean score responses on the quality of teachers in schools.
2. There is no significant difference between the mean scores of male and female

teachers on the evaluation techniques employed by teachers for feedback.

Methodology

The design of this study is a descriptive survey design with the aim of acquiring valuable information/data for the research. The design was chosen for the study because it involved the collection of extensive and cross sectional data via a representative sample from a target population. The purpose is to describe and interpret an existing situation under study and finally draw conclusion based on the analysis of available data. The population of the study comprised of 182 Basic Science teachers of 40 secondary schools in Imo State Secondary School System. To determine the sample size of the study the researchers used Taro Yarmane's (1969) formula for finite population. Using this formula, a sample size of 125 Basic Science teachers was obtained and used as sample for the study. The instrument used for data collection was a structured questionnaire of the modified Likert type of rating scale. The response modes are Strongly Agree (SA=4pts), Agree (A=3pts), Disagree(D=2pts) and strongly Disagree (SD=1pt). This instrument was validated by three experts in Measurement and Evaluation of the department of Psychology Guidance and Counseling, Alvan Ikoku Federal college of Education Owerri. Cronbach alpha reliability method was adopted to obtain a reliability index of 0.81 establishing the interna lconsistency of the instrument. All the researchers were involved in the distribution of the questionnaire to the respondents in their schools on a one and one data collection approach which resulted to a hundred percent return rate. Hence, all the 125 questionnaire were collected back, reorganized, tabulated and analyzed. The mean score and standard deviation used for data analysis and a benchmark of 2.5 from a total response of 10 points was reached and adopted as criterion mean. Any strategy with a mean score of 2.50 and above is considered appropriate for use while any one whose mean score (strategy) is below 2.50 is considered inappropriate for use in the study.

Results

Research Question One: To what extent is the national curriculum document for Basic Science available in our schools?

Table I: Mean score responses on the level of availability of the curriculum document in our secondary schools.

S/N	Items Statement	Male Resp. $\bar{X}$	SD	Female Resp. $\bar{X}$	SD	Average $\bar{X}$	Average SD	Decision
1.	The curriculum document is never in our schools	2.8	0.95	2.9	1.05	2.9	1.08	Not accepted
2.	The curriculum document has never been seen by many of the teachers in schools	2.7	0.88	2.6	0.98	2.7	0.73	Not accepted
3.	Principals don't care whether they got the curriculum for their school or not	2.5	0.91	2.4	0.93	2.5	0.92	Not accepted
4.	School heads don't monitor the use of the curriculum contents for instruction	2.1	1.42	2.2	1.09	2.2	1.26	Accepted
5.	School principals are no longer interested in the outcome of the curriculum implementation	2.0	0.76	1.9	0.74	2.0	0.75	Accepted
	Cluster mean	**2.4**	**0.98**	**2.4**	**0.96**	**2.5**	**0.95**	

Table shows the mean score responses on the availability level of the curriculum document in our secondary schools. Mean scores of 2.9 and 2.7 accepts the curriculum documents are available in schools and that many teachers had seen this document. It also revealed principals always collected their own share of the curriculum document for their schools. In item No.4, a mean of 2.2 and a standard deviation of 1.26 indicate that school heads actually didn't monitor the use of the curriculum contents for instruction. Another mean score of 2.0 representing the fact that many schools principals are not interested in the outcome of the curriculum implementation as observed in item No. 5

Research Question Two: To what extent do teachers use the recommended methods enshrined in the curriculum for teaching?

Table 2: Mean score response analysis on the extent teachers use the recommended teaching methods enshrined in the curriculum.

S/N	Items Statement	Male Resp.		Female Resp.		Average	Average	Decision
		X	SD	X	SD	X	SD	
1.	Lecture method	1.0	0.95	1.9	1.02	2.0	0.99	Seldom used
2.	Project method	2.2	0.87	2.2	0.91	2.2	0.89	Seldom used
3.	Demonstration method	3.2	0.78	3.2	0.87	3.2	0.83	Often used
4.	Discovery method	2.7	0.63	2.7	0.86	2.7	0.75	Often used
5.	Individualized method	1.9	0.53	2.0	0.65	2.0	0.59	Seldom used
6.	Discussion method	3.2	0.48	3.6	0.52	3.4	0.50	Often sued
7.	Concept mapping	1.5	0.95	1.8	0.79	1.7	0.87	Seldom used
8.	Inquire method	3.1	0.83	3.1	0.74	3.1	0.79	Often used
9.	Laboratory method	1.7	0.92	2.0	0.88	1.9	0.90	Seldom used
10.	Programmed instruction	1.7	0.87	1.7	0.81	1.7	0.84	Seldom used
11.	Analogy	1.7	0.88	1.6	1.38	1.7	1.13	Seldom used
12.	Team teaching	1.8	1.00	1.8	1.02	1.8	1.01	Seldom used
13.	Role playing	2.9	1.05	2.9	1.05	2.9	1.05	Often used
14.	Simulation and games	2.2	1.04	2.2	1.01	2.2	1.03	Seldom used
15.	Scaffolding	1.7	0.71	1.6	0.79	1.7	0.75	Seldom used
16.	Cooperative learning	3.1	0.88	3.1	0.90	3.1	0.89	Often used
17.	Excursion/field trip	1.9	1.15	2.3	0.88	2.1	1.02	Seldom used
	Cluster mean	**2.2**	**0.85**	**2.3**	**0.83**	**2.3**	**0.87**	

Table II shows the teachers' level of use of the recommended teaching methods as indicated in the curriculum. Reactions from respondents indicated that such teaching methods like Demonstration, discovery, discussion, inquiry, role-playing and cooperative learning methods with their mean scores of 3.2, 2.7, 3.3, 3.1, 2.9 and 3.1 respectively were very often or often used by teachers and either ignoring such methods like lecture, project, individualized, laboratory, concept mapping, programmed instruction, analogy,team teaching, simulation andgames, scaffolding and excursion/field trips or rarely use them in their teaching processes. This was confirmed with an average cluster mean of 2.3 and standard deviation of 0.87.

Research Question Three: What are the quality of teachers that implement the curriculum in our schools?

Table 3: Mean score response analysis on the quality of Basic Science teachers in the schools.

S/N	Items Statement	Male Resp. X	SD	Female Resp. X	SD	Average X	Average SD	Decision
1.	Teachers' lack of knowledge of their subject matter in the curriculum poses a problem in implementing the curriculum	3.1	0.89	3.0	0.75	3.1	0.82	Accepted
2.	Non specialist trained teachers are now more in our schools and this leaves a stigma in curriculum implementation	3.3	0.60	2.9	1.05	3.1	0.83	Accepted
	Cluster Mean	**3.2**		**3.0**		**3.1**	**0.83**	**Accepted**

Table 3 shows for item 1 and 2 that the average mean score of 3.1 and 3.1 and their corresponding standard deviations of 0.82 and 0.83 respectively, indicating that respondents agreed that there are too many non-trained specialist subject teachers in our schools, and that lack of adequate knowledge of the subject matter by these ill-trained teachers pose a great draw back to the implementation process.

Research Question Four: What are the quantity of Basic Science teachers that implement the curriculum in schools?

Table 4: Mean score responses on quantity of Basic Science teachers that implement the curriculum in schools.

S/N	Items Statement	Male Resp. X	SD	Female Resp. X	SD	Average X	Average SD	Decision
1	The number of qualified teachers are more in urban schools in rural schools	3.2	0.78	3.0	1.13	3.1	0.96	Accepted
2	Many teachers are not sponsored for academic conferences	2.8	0.95	2.9	1.20	2.9	1.08	Accepted
3	There is inadequate in-service training for many subject teachers year in year out	2.8	1.03	2.9	1.07	2.9	1.05	Accepted
	Cluster mean	**3.1**	**0.85**	**2.9**	**1.04**	**3.0**	**0.95**	**Accepted**

Table 4 above shows for items 1, 2 and 3 that the average mean scores of 3.1, 2.9, 2.9 and their corresponding standard deviations of 0.96, 1.8 and 1.05 respectively indicate that the number of qualified teachers in schools are grossly inadequate, majority of teachers are not sponsored for academic conferences and a lot more are never sent for in-service training. The above are supported with an average cluster mean score of 3.0 and standard deviation of 0.95.

Research Question Five: What are the evaluation techniques employed by teachers in assessing their students as contained in the curriculum.

Table 5: Mean score response analysis on the evaluation techniques employed by teachers during implementation.

S/N	Evaluation techniques	Male Resp. $\bar{X}$	SD	Female Resp. $\bar{X}$	SD	Average $\bar{X}$	Average SD	Decision
1.	Quizzes	2.2	0.88	2.1	0.98	2.2	0.93	Seldom used
2.	Oral questioning	2.9	1.79	3.3	0.85	3.1	1.32	Often used
3.	Essay writing	2.8	1.07	3.0	0.88	2.9	0.98	Often used
4.	Multiple choice questioning	3.4	0.32	3.3	0.72	3.3	0.52	Often used
5.	True or false	2.8	1.04	2.9	0.98	2.9	1.01	Often used
6.	Matching of items	2.2	0.91	2.2	1.08	2.2	1.00	Seldom used
7.	Completion of blanks	2.6	1.09	2.6	0.95	2.6	1.02	Often used
8.	Assignments	2.5	1.08	2.5	0.97	2.5	1.03	Often used
9.	Project	2.1	0.88	2.3	1.01	2.2	0.95	Seldom used
10.	Practical Assignment	2.3	0.94	2.4	0.97	2.4	1.05	Seldom used
11.	Laboratory work	2.2	1.08	2.2	0.96	2.2	1.02	Seldom used
	Cluster mean	**2.6**	**1.01**	**2.7**	**0.94**	**2.5**	**0.93**	

Form table 5 above, it was observed that the following evaluation techniques were very often or often used by teachers to assess their students for feedback. They are: oral questioning, essay writing, multiple choice questions, true or false, completion of blanks, and assignments and their average mean score are respectively, 3.1, 2.9, 3.3, 2.9, 2.6 and 2.5 and either ignoring such evaluation techniques like quizzes, matching of items, projects, practical assignments and laboratory works or seldom used them in their implementation process. The cluster mean score of 2.5 and standard deviation of 0.93 is a good indication of the claims.

Research Question Six: What other factors militate against the proper implementation of the upper Basic school curriculum for Basic science?

Table 6: Mean score response analysis on other factors to the implementation process in school.

S/N	Other implementation problems	Male Resp. $\bar{X}$	SD	Female Resp. $\bar{X}$	SD	Average $\bar{X}$	Average SD	Decision
1.	Learner factor	2.6	0.94	2.6	1.27	2.6	1.11	Accepted
2.	Physical facilities factor	2.9	0.88	2.9	0.84	2.9	0.86	Accepted
3.	21st century pedagogy factor	2.7	1.07	2.7	1.09	2.7	1.08	Accepted
4.	Gender stereotypism factor	2.6	1.10	2.5	1.04	2.6	1.07	Accepted
5.	Finance factor	3.1	0.99	3.2	0.78	3.2	0.89	Accepted
6.	Lack of technology driven environment factor	2.8	1.10	3.0	0.94	2.9	1.02	Accepted
	Cluster mean	**2.8**	**0.95**	**2.0**	**0.81**	**2.8**	**1.05**	

Table 6 x-rays mean scores of 2.6, 2.9, 2.7, 2.6, 3.2 and 2.9 and their corresponding standard deviations of 1.11, 0.86, 1.08, 1.07, 0.89 and 1.02 respectively indicating that respondents accepted all the items stated in the table 6 as other problems hindering effective implementation of the said curriculum.

Hypothesis One: There is no significance difference between male and female teachers mean response scores on the quality of teachers in our schools.

Table 7: t-test analysis of significant difference between the mean scores of male and female teachers on quality of teachers for curriculum implementation in schools.

S/N	Variables	No	$\bar{X}$	SD	df	Sig level	t-cal	t-tab	Decision
1.	Male teachers	59	3.2	0.76	123	0.05	0.709	2.021	Accept
2.	Female teachers	66	3.0	0.95					

Sig. at 0.05 level; df = 123

Table 7 shows the t-test analysis of significant difference between male and female teachers mean response scores on the quality of teachers in schools for curriculum implementation. The result of the analysis reveals the t-calculated value of 0.709 which is less than the t-tabulated value of 2.021 indicating that the hypothesis is thus accepted. This therefore implies that the quality of teachers in our schools for the implementation of the curriculum is grossly not encouraging.

Hypothesis Two: There is no significant difference between the male and female teachers responses on the level of use of recommended teaching methods enshrined in the curriculum.

Table 8: t-test analysis of significant difference between the mean response scores of male and female teachers on the level of use of recommended teaching methods enshrined in the curriculum.

S/N	Variables	No	X	SD	df	Sig level	t-cal	t-tab	Decision
1.	Male teachers	59	2.6	0.93	123	0.05	1.161	2.021	Accept
2.	Female teachers	66	2.7						

Sig at = 0.05 level, df = 123

Table 8 above shows t-test analysis of significant difference between the mean response scores of male and female teachers on the level of use of recommended teaching methods enshrined in the curriculum. Results show that t-calculated is 1.61 while the tabulated is 2.021 at 0.05 level of significance and degree of freedom (df) = 123. However since t-calculated is less than the t-tabulated, the hypothesis is retained. This implies that much of the recommended teaching methods in the curriculum are not being employed by teachers in their teaching process.

Discussion of Findings

The findings from the analysis of the five research questions and two null hypotheses reveal that (1) From the five items posted in research question 1 of the study, only two of them were accepted and three were not accepted. Those accepted were "school heads don't monitor the use of the curriculum document for instruction and they are no longer interested in the outcome of the curriculum implementation in their school". This implies that the curriculum document is in our schools and has been seen by majority of the teachers denying the fact that principals don't care about collecting the document for their schools. Also from the 17 recommended teaching methods enshrined in the curriculum document and enlisted here, only 6 of them were accepted by respondents as often applied by teachers, the rest 11 methods were either not applied at all or seldom applied. This observation seems to support Odili et al. (2011) who posited that even in the schools where the curriculum document was available, the teachers still didn't have any guides in lesson preparation, and thenceforth teach out of the context of the curriculum and therefore not implementing the curriculum.

Furthermore, on the findings on the variables of quantity and quality of teachers as shown on table 3, it was observed that all the items listed on this table were accepted by majority of the respondents which means that there are many non-specialist and unknowledgeable teachers in our schools and these teachers teach out of the context of the curriculum. Also many qualified teachers are often more in urban than in rural schools. That majority of them are neither sponsored for academic conferences nor sent on in-service trainings to upgrade their knowledge of effective curriculum implementation. Nwadiani (2007), Nwokocha (2007) and Ereh (2005) as respectively cited in Habor-Peters (2013) were consistent in their opinion that teachers knowledge of the curriculum is very essential for its successful implementation. The teacher is an input factor around which the implementation process anchors and if they are not adequate, lack quality and knowledge of the curriculum or subject matter as the case maybe, it means that the document and subjects contents cannot be successfully implemented here in our schools. The result of the hypothesis supports the above findings.

Moreover, on evaluation techniques employed by teachers to get feedback from their students, the findings as seen in table 5 show that from an average cluster mean of 2.5 there is an observation that majority of the teachers often employ majority of the enlisted evaluation techniques required for implementation of the curriculum in schools but critical analysis show that they tend to lean more on the use of cognitive aspects than on the psychomotor aspects that require more practical work or manipulations than theory, and besides the process component of the CIPPC evaluation model now being upheld for use globally lays greater emphasis on the use of practical skills for science and science related options in the curriculum implementation. However, the above positions support Odili et al. (2011) who posit that an important feature of the Nine year Basic education plan/curriculum is its emphasis on process skills like inquiry manipulation, intellectual and societal values

and the curriculum presents these skills so as to relate learning to the immediate environment of the learner. Invariably, a teacher without good knowledge of the curriculum or subject matter will not be able to present learning in a way to achieve these process skills. The result of the hypothesis also attests to the above findings and positions.

Lastly, on other factors militating against effective curriculum implementation in Nigerian schools, as seen in table 8of this write-up, finding show a cluster mean score of 2.8 with its corresponding standard deviation of 1.05 implying that respondents held tenaciously that leaner factor, physical facilities factor, 21st century pedagogy factor, gender stereotype factor, finance factor and lack of technology driven environment factor are among other major problems hindering effective curriculum implementation in Nigerian secondary schools.

Conclusion

The study has painstakingly evaluated the level of implementation of the national curriculum for Basic Science in Owerri Education Zone considering such factors like availability of the curriculum document in schools, teachers use of the recommended teaching methods, qualities and quantity of teachers handling the subject evaluation techniques as well as gender differences influencing the implementation process. It was found out that the above factors seriously hamper appropriate implementation of the curriculum and the recommendations below could foster successful implementation.

Recommendations

The following recommendations are proffered based on the findings the study:

1. There's great need for school heads to closely monitor the use and implementation of the Basic Science Curriculum.
2. They should express full interest in the final outcome of the implementation process.
3. Basic science teachers should try to teach the subject within the context by involving all the methods recommended in the National Curriculum.
4. All non-specialist teachers of Basic Science should be dropped and professionals recruited in schools.
5. Qualified Basic Science teachers should be evenly spread within and rural schools.
6. Adequate number of Basic Science professionals should be recruited by the Government, and from time to time sponsored for academic conferences and in-service training.
7. More evaluation techniques need to be employed and should not be allowed to lean more towards the cognitive than the psychomotor aspects of learning.
8. The stakeholders in the education industry should try to address such other hindering factors to the implementation like: learner factor, physicl facilities factor, 21st century pedagogy factor, gender stereotype factor, finance factor and lack of technology driven environment factor.

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