



**BRIDGING LANGUAGE AND SCIENCE: TEACHERS' VIEWS
ON INTEGRATING ENGLISH AND AGRICULTURAL SCIENCE**

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Abstract: The study was carried out to investigate teachers' perception of curriculum integration of junior secondary school Agricultural Science and English Language for training. Descriptive survey design was adopted for the study with two research questions answered. The population for the study was 200 secondary school teachers in Dekina L.G.A., Kogi State. Sample size of 100 secondary school teachers were selected using the stratified proportionate random sampling technique. The instrument for data collection was a 17- item questionnaire which was constructed by the researchers and validated by three experts. It gave a reliability coefficient of 0.74 which was obtained using Cronbach Alpha method. The data collected were analyzed with mean and standard deviation. The findings showed that the curriculum is adequate for integration for training, broadfield design approach should be adopted and no significant mean difference between male and female teachers. Based on the findings, the following recommendations were made that collaborative curriculum designing be adopted in Nigeria, teachers were encouraged to pay attention to difficult areas for the students, students should be able to tell their teachers areas they find difficult for proper teaching and learning process etc.

Keywords: Curriculum integration, secondary school, Agricultural science, English Language

Introduction

A teacher is a person who helps another person to learn. The teacher does the work of facilitation in the teaching and learning process as he comes between the learner and the learning material to ensure that the learner gains meaningful knowledge from being exposed to the learning material. Teachmint (2023) says that a teacher helps a learner to gain knowledge, competence and virtue. This idea of a teacher presents him/her as a professional who plays intermediary role. Also, the teacher is one who cultivates an environment that is friendly enough to encourage learning in the learner. For Calaby (2023), it is said that a teacher is that individual who develops in the learner the passion to learn and encourage them in the habit of life-long learning. This presents the teacher as

a person who guides in the learning process in order for the learner to be able to impact the world around him in the future. The whole message conveys that the teacher represent different things to different groups of learners at the same time. According to Indeed Career Guide (ICG, 2023) the teacher plays a very significant role in the school and its students. Some of the responsibilities so associated with the teacher may include: creation of educational materials, gathering of materials for presentation, management of classes adequate learning, planning of school events, organizing classrooms to encourage proper teaching and learning process, meet any other needs of the learners, collaborate with parents to move the school forward, encourage and promote motivation in the learner, evaluate the learning and performance of the learners. Among the things a teacher is said to do is the preparation of learning materials; a process curriculum experts refer to as curriculum construction/design. Curriculum design is a process of arranging information (knowledge), skills attitudes and values that learners are exposed to at any given period of time in the school. Nwafor (2002) had perceived the process of curriculum design as an art of bringing to form a whole the various blocks required to serve as objects of learning. This process could be viewed as the integration of elements that form the content that a learner experience in a teaching and learning process. Integration is an act and art of blending the knowledge, skills, attitudes and values in such a manner that is learnable to the learner. This integration process enables the teacher to simplify complex abstract-like contents in that it blends with the learning experience of the learner suitably and without affecting previous learning negatively rather enriching it. Integration is a process of blending two or more ideas in a teaching and learning process in order to create a more meaningful understanding of the learning experience the learner is being exposed to. Thus, integration is a concept that is used in sync with curriculum to convey that learning experience from different learning area is blended to produce better output. So, curriculum integration could be viewed as the blending or combining of two or more topics or subject to obtain a wholistic knowledge that is more meaningful than if only one subject or topic was taught or learnt in isolation. TEH (2023) sees curriculum integration as a process of bringing different subjects into a piece for the sake of learning. The idea here is that combining ideas or information from different subjects or topics encourage better output in learning. Dillion and Boyd (2022) say that curriculum integration is a process where borderlines or subject boundaries are removed thus, there is the unifying of concepts, topics, ideas, contents or subjects thereby encouraging good connection of ideas and dissolution of boundaries. This they said drive in critical thinking and understanding. Wall and Leckie (2017) view curriculum integration as the combining of past and present experiences to foster new learning. It is hence, the blending of knowledge when content areas and concepts come together through the effort of the teacher and the learner to focus on an issue. The concept of curriculum integration seems to be project-based and makes learners active participant. Some of the advantages highlighted by Brown (2016) about curriculum integration are: meet students' needs, makes students and teachers learners, makes student to be full and functional members of the society after school (Springer, 2013). These importances of curriculum integration are the drivers for encouraging it in secondary school education where individuals are trained and they are able to choose to continue for higher education or join the world of work where the skills they have learnt while in school are brought to bear.

According to FRN (2016) secondary school education shall be for preparation of persons for:

- A. Useful living within the society ; and
- B. Higher education

But junior secondary school education falls under the purview of basic education in Nigeria which the same (FRN, 2016) has said that that level of education shall teach basic subjects which will allow pupils to gain knowledge and skills. This means that the junior secondary school level of education, though basic, permits that room be created to the gaining of knowledge which must not be in one area but in various areas that would enable the learner to become a full and functional member of the society. This by implication conveys that the idea of curriculum integration had been built into junior secondary education practice even though it may not be pronounced on the surface of the curriculum content, thus, this discourse is re-emphasizing the intent desired originally. Therefore, encouraging that English Language content should bear knowledge, skills, attitudes and value on Agricultural Science and a welcomed development as it would consolidate the original desire the curriculum designers had for educational practice.

Okorie (2001) highlighted that agriculture in secondary school education was compulsory for every students in the past and was meant to achieve the following objectives:

1. Stimulate and sustain students' interest in agriculture
2. Help students gain knowledge and acquire skills that are practical in nature
3. Enable students integrate knowledge with skills in agriculture etc.

These and more objectives are the pursuits of the agricultural science curriculum knowing that what is taught in junior secondary school is what is elaborated on in senior secondary school, thus, the objective number 3 here captures the intention for curriculum integration of knowledge and skills; a point that affirms curriculum integration strongly. Considering that English Language is a core subject; otherwise compulsory subject which often as reflected by most school time table is taught 4 or 5 times in a week, could be a very good channel for enhancing the knowledge of agriculture among learners which in recent times unlike before is now an elective subject, thereby, making knowledge in that area elusive. This would make both subjects to have simultaneous and smooth delivery to the learners as they would complement each other. Hence, training is encouraged on both ends. Training which has been viewed is a process of teaching and learning experience done to enable one gain knowledge and acquire skills for the reasons of applying it to what they do (Chand, 2023). The information here, says that training increases the knowledge and skills a person has to be able to act as a better person who is useful to the society. The idea of curriculum integration could help for training in Agricultural Science and English Language at the same time if they are adequate blended into each other, thereby fostering training for better people in a better society. This idea also of integration of curriculum content was necessitated by the experience shared by a teacher of a corps member who was posted to a rural school and found out that melon was a crop grown in the ground, maintained, harvested, processed and peeled before being sold to be used in cooking unlike what he had thought of it as something that existed in the form he has always known it naturally. So it becomes pertinent to asks a few question in line with the above problem. Do you not think that there are more persons who think like this young corps members in the society? Do you not believe that curriculum integration would have solved or reduced this problem to achieve the desire objective of curriculum integration for training in Agricultural Science and English language? Therefore teachers' perception of curriculum integration of junior secondary school Agricultural Science and English language for training. The study is meant to achieve the following objectives:

1. Determine the extent of teachers' perception of the adequacy of content of curriculum integration of junior secondary school Agricultural Science and English language for training

2. Determine the extent of teacher perception on the design approach that would encourage curriculum integration of junior secondary school Agricultural Science and English Language for training.
3. Determine extent of male and female teachers' perception of the adequacy of content of curriculum integration in junior secondary school Agricultural Science and English Language for training.

Research Question

The following research questions guided the study:

1. What is the extent of teachers' perception of the adequacy of content of curriculum integration of junior secondary school Agricultural Science and English Language for training?
2. What is the extent of teachers' perception on the design approach that would encourage curriculum integration more of junior secondary school Agricultural Science and English Language for training?
3. What is the mean difference between the male and female teachers' perception of content of curriculum integration of junior secondary school Agricultural Science and English Language for training?

Hypothesis

This hypothesis guided this study ($P=0.05$)

1. There is no significant mean difference between the male and female teachers' perception of the extent of adequacy of content of curriculum integration of junior secondary school Agricultural Science and English Language for training.

Research Methods

The study was carried out in secondary schools in Kogi State, Nigeria, particularly, in twenty (100) selected secondary schools in Dekina. The population for the study is made up of 200 Agricultural Science and English Language teachers in Dekina Local Government Area, Kogi State. The sample for the study is made up of 100 secondary school teachers drawn using the stratified proportionate random sampling technique. The instrument used by the researchers for data collection was a questionnaire titled: Teachers' Perception of Curriculum Integration for Secondary School Agricultural Science and English Language Content Questionnaire (TPCISSASELCQ) which was constructed by the researchers. It consists of 17 items which were arranged in two sections A and B. Section A contains the biodata, while section B consists of two subgroups on adequacy of the curriculum content and curriculum designing approach. The questionnaire was built on a four-point Likert Scale, namely: Strongly Agreed (SA), agreed (A), Disagree (D) and strongly disagree (SD) and the levels of responses are weighted as 4, 3, 2, 1 respectively. The instrument was face validated by three experts (one from Measurement and Evaluation Unit and two from Curriculum Unit) of the Department of Educational Foundations of Prince Abubakar Audu University, Anyigba, Kogi State. The suggestions given were used in producing the final copy of the instrument. Cronbach alpha was used in calculating the reliability which gave an alpha value of 0.74 which was considered high. The instrument was administered and collected by the researchers. The data obtained were analyzed using, mean and standard deviation for answering the research questions.

Results

Research Question 1: What is the extent of teachers' perception of the adequacy of content of curriculum integration of junior secondary school Agricultural Science and English Language for training?

Table 1: Mean, Standard deviation and Remark on teachers' perception of the adequacy of content of curriculum integration of junior secondary school Agricultural Science and English Language for training

S/N	ITEMS	MEAN	SD	N	REMARK
1.	Curriculum content has basic agricultural science adequately for training	3.4	1.45	100	A
2.	Land and its uses content are adequately integrated	3.0	1.26	100	A
3.	The elementary agricultural engineering contents are adequately integrated for training	2.7	1.15	100	A
4.	Crop production curriculum content are adequately integrated for training	3.3	1.38	100	A
5.	The animal production curriculum content are adequately adopted for training	2.7	1.17	100	A
6.	Agricultural economics and extentsion curriculum content find adequate integration for training	3.0	1.26	100	A
Grand Mean and Standard Deviation		3.02	1.27		

Source: Field Survey 2024

Table 1 results shows that questionnaire was responded to by the respondents affirmatively as possessing contents that cover all the areas in secondary school Agricultural Science . This is based on the mean obtained for each content area needed for knowledge, skills, attitudes and values. The grand mean and standard deviation (3.02 and 1.27) speaks volume of the result.

Research Question 2: What is the extent of teachers' perception on the design approach that would encourage curriculum integration more of junior secondary school Agricultural Science and English Language for training?

Table 2: Mean, Standard deviation and Remark on perception of teachers on the design approach that would encourage curriculum integration of junior secondary school Agricultural Science and English language for training

S/N	ITEMS	MEAN	SD	N	REMARK
1.	Subject curriculum design would encourage curriculum integration more	3.3	1.36	100	A
2.	Broadfield curriculum design would encourage curriculum integration more	3.5	1.45	100	A
3.	Correlated curriculum design would encourage Curriculum integration more	2.7	1.20	100	A
4.	Activity curriculum design would encourage curriculum integration more	2.9	1.23	100	A
5.	Humanistic curriculum design would encourage curriculum integration more	2.3	1.92	100	D
6.	Problem centred curriculum design would Encourage curriculum integration more	3.2	1.38	100	A
7.	Life situation curriculum design would encourage curriculum integration more	2.8	1.21	100	A

8.	Transformatory curriculum design would	2.6	1.03	100	A
9.	Reconstructionist curriculum design encourage curriculum integration more	2.9	1.23	100	A

Grand Mean and SD**2.9****1.33****Source: Field Survey 2024**

Table 2 shows the result obtained for curriculum designing approach adopted for agricultural science and perhaps how that would facilitate its integration with English language in secondary schools. All the respondents agreed to the various curriculum design approaches except for the humanistic approach and this may be because students would want to dodge the idea of learning by doing which encourage discipline in the students, thereby, avoiding the work completely and this would make teachers to force them to learn and do even if they do not have interest to. However, the grand mean and standard deviation (2.9 and 1.33) show that the curriculum designing approach adopted would produce the desired result.

Research Question 3: What is the mean difference between the male and female teachers' perception of content of curriculum integration of junior secondary school Agricultural Science and English Language for training?

Table 3: Mean and standard deviation for male and female teachers on the extent of adequacy of content of curriculum integration of junior secondary school Agricultural Science and English Language for training

S/N	Group	Mean	SD	N	Mean Difference
1	Male	3.06	0.90	57	0.11
2	Female	2.95	0.87	43	

Source: Field Survey 2024

The result on table 3 above indicate that the mean for male (3.06) and the mean for female (2.95) are quite close with only a marginal mean difference of (0.11). The conveys that there is no much difference in the perception of male and female teacher on the adequacy of the content of curriculum integration for training in both Agricultural Science and English Language in Nigeria. **Hypothesis** There is no significant mean difference between the male and female teachers' perception of extent of adequacy of content of curriculum integration in junior secondary school for training in Agricultural Science and English Language in Nigeria

Table 4: Z-test for male and female teachers' perception of the extent adequacy of content of curriculum integration of junior secondary school Agricultural Science and English Language for training

Group	Mean	SD	N	df	Z _{calculated}	Z _{critical}	Decision
Male	3.06	0.90	57	98	1.1	1.90	Rejected
Female	2.95	0.87	43				

Sources: Field Survey, 2023.

The result of table 4.5 shows the Z-test analysis for the difference in perception of male and female teachers. As shown on the table above, the Z-calculated (1.1) is less than the Z-critical (1.90). Hence, the null hypothesis of no

significant mean difference was accepted. This means that the male and female teacher believe that the curriculum content available is adequate for training in both Agricultural Science and English Language.

Discussion of Findings

The results on table1 revealed that the curriculum content of curriculum integration is adequate for the desired training in junior secondary school Agricultural science and English Language in Nigeria is adequate. This conveys that the teachers perceive that when curriculum implementation is followed religiously, that the learners will gain available benefit that may associated with grammatical and vocabulary development in the learners. However, this opinion of teachers contradicts that of the learners as confirm by Amadioha and Akor (2019) who found that when the language for writing a textbook is not at the same level with the learners' intellectual capacity, that learners would experience difficult. Therefore, it is imperative that the content which the teachers have adjudged adequate should also be confirmed to be at the learners' level of learning experience for readiness and willingness to learn to be guaranteed. The next result on table 2 shows that broadfield, subject and problem solving curriculum followed in that order as the ones that would be more acceptable and perhaps produce more results in the learners when applied. However, the Reconstructionist curriculum design approach was following the ones earlier mentioned. This is giving information as to where the age is taking curriculum designing and that curriculum designers should look in that direction in order to obtain the desired result in making learners full and functional members of the society. This confirm by(Huizinga, Nieveen & Handelzalts, 2019) who found that teachers would be better curriculum implementers if they enjoy the ownership of the curriculum design process, thus, promoting reform and achieving the desired results possible in the learners. Hence, teachers' should have a free hand to reconstruct the curriculum that is available to them to suite the type of learners they teach. More so, the result on table 3 and 4 shows that there is little or nothing that gender contribute when it comes to the perception on the adequacy of content of curriculum integration for training in Agricultural Science and English Language in Nigeria.

Conclusion

Following the output of the result here, it clear to say that based on teachers perception that the curriculum content available for training in Agricultural Science and English Language in Nigeria would produce the desired result if only the textbooks provided for learners will have the language used in preparing be at their intellectual level and also that the teachers would exercise freedom in reconstructing the curriculum to be fit for the group of learners they may have at a given period in time in the classroom.

Recommendation

The following are the recommendation given based on the findings of the study:

1. Curriculum designers should not adopt central design approach but do the job in collaboration with teachers in secondary schools from the various geo-political zones in Nigeria in order to have an all-embracing curriculum of a practical subject like Agricultural science.
2. Considering the result of this study where problem solving design and reconstructionist have great output, teachers should be apply such to the classroom situation in order to gain improve learner performance.
3. Elementary agricultural engineering and animal production have the least mean above, thus Agricultural Science teachers and English Language teachers do more in these areas for better students' performance.
4. Students should feel free to tell their teachers areas they find difficult learning so that the teachers can do their best to explain it or them to the level of the students' learning experience.

5. Cooperative curriculum implantation should be adopted by both Agricultural Science teachers and English Language teachers for maximum output of curriculum integration of this nature here.

References

- Amadioha, S.W. & Akor, V.O. (2019). Readability of two senior secondary school agricultural science textbooks for effective curriculum implementation. www.researchgate.net
- Brown, D...F. (2016). Curriculum integration. In S.B. Martens, M. Caskey & N. Flowers (eds), *The encyclopedia of middle grades education* (2nd ed.). Charlotte, N.C.:Information Age Publishing
- Calaby, L. (2023). Teachers' job description. Retrieved 11th October, 2023.
- Chand, S. (2023). Training: Meaning, definition and types. www.articlelibrary.com
- Dillion, A. & Boyd, S. (2022). What is integrated curriculum. Retrieved 12th October, 2023.
- Federal Republic of Nigeria (FRN, 2016). National policy on education. Yaba: NERDC Press.
- Huizinga, T., Nieveen, N. & Handelzalts, A. (2019). Identifying needs for support to enhance teacher's curriculum design expertise. www.link.springer.com
- Indeede Career Guide (ICG, 2023). What do teachers do and how to become one?
- Nwafor, M.O. (2002). Curriculum design. In G.C. Offorma (ed), *Curriculum theory and practice*. Enugu. Family Circle Publishers.
- Okorie, J.U. (2001). Vocational and industrial education in Nigeria. Bauchi: League of Researchers
- Springer, M. (2013). Charting the course of curriculum integration. In P.G. Andrews (ed.), *Research to guide practice in middle grades education*. Westernville, OH: Association for Middle Level Education.
- Teachmint (2023). Teacher.
- The Education Hub (THE, 2023). An introduction to curriculum integration. Wall, A, & Leckie, A. (2017). Curriculum integration: An overview. *Current Issues in Middle Level Education* 22(1): 36-40