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Deductive Versus Inductive Teaching Methods and Learning Outcomes in French Language in selected schools in Ogun State of Nigeria

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Abstract

This study establishes one important fact about the learning of French language in Nigeria which is an Anglophone environment. It indicates that in the Nigerian context, a careful combination of the deductive and inductive methods delivered in a bilingual mode (French & English) will yield higher achievement by students than using the monolingual mode (French only) to teach French as a foreign language. Also, the study showed that student achievement was not significantly affected by the attitude of learners in the language classroom. The study thus indicated that both monolingual teaching methods have the potential to encourage higher achievement in French language considering that both methods did not result in any significant differences in encouraging achievement (mean score of deductive group = 22.57 and mean score for inductive group= 21.18 leading to a statistically insignificant difference of 1.39).

Keywords: deductive, inductive, teaching methods, learning- outcomes, French language, secondary schools.

INTRODUCTION

Since the introduction of the French language into the secondary school curriculum of the Lagos colony which later joined the northern and southern protectorates in 1914 to form the country called Nigeria, French language has been recognised as very important in national development.

French language has always been incorporated into the national policy on education (1977- 2010) which desires to promote the language in Nigerian schools.

Despite the laudable objectives of studying French language, achievement in the subject at secondary school level has remained poor (Iteogu, 2011). The major reason for this situation has been severally attributed to the teaching methods applied (bilingual method). Indeed, some scholars including Emordi (1996), Onumajuru (2003) and Akeusola (2006) have identified three major and minor factors which account for the declining fortune of French language study in Nigerian secondary schools. The major factors include: the problem of selection of teaching methods in the foreign language class (French) which has been affirmed to result in student poor achievement in French language in secondary schools and low enrolment of students in French language study at the senior secondary school level.

Different results have been reported about teaching French as a second or foreign language in an Anglophone nation like Nigeria. While Adelekan (1979) asserts that the monolingual direct method is the best, Obanya (1983) and Araromi (1987) assert that the bilingual method encourages higher achievement in French language. Ajibade (1994) and Ogunbiyi (1998) are of the neutral opinion that it is better to integrate both methods in order to ensure higher achievement by students

Data obtained from a government agency, the Ogun State Ministry Of Education (Abeokuta, Nigeria) reveal that students' achievement in French language at basic nine(jss3) level final examination is not encouraging enough. Below is a table to illustrate this point

Table 1

A Summary of Junior Secondary Certificate Examination in French language, Ogun State (2005 -2008)

Years	Total enrolment	Distinction (A) 65 and above	Credit©51-64	Pass(p)40-50	Fail(f) 0- 39
2005	12,438	1931 (15.5%)	4307 (34.6%)	5755 (46.38%)	445 (3.6%)

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2006	18,936	2218 (11.7%)	7756 (41%)	7713 (40.7%)	1249 (6.6%)
2007	25,125	772 (3.1%)	11,120 (44.3%)	11130 (44.3%)	2122 (8.4%)
2008	27,251	1025 (3.8%)	13186 (48.4%)	11773 (43.2%)	1267 (4.7%)

Source: OGSG (2005-2008) Ministry Of Education, Oke –Mosan, Abeokuta Nigeria (Governor's Office Complex)

This table constitutes an illustration of the declining achievement in French language in public secondary schools in Ogun state of Nigeria. Also it sets the stage for a search for a remedy of the situation which has remained persistent since 2005 up to the present time this table has been included to buttress the point that achievement in secondary school French programme has remained persistently poor and unsatisfactory .

Arising from this background in the need for a remedy which includes a re-examination of the prevalent bilingual method of language teaching (English and French) teaching the language: This is imperative because the poor achievement occurs despite the fact that 30% of the overall performance is based on an internally- controlled continuous assessment. .Therefore in the face of the apparent declining effectiveness of the bilingual method, this study has proposed that anyone of two monolingual variance –the deductive and inductive methods could be a better alternative to the bilingual method. The intention is to improve learners' achievement in secondary school French language programmes.

Apart from sharing a common mode of instruction, the deductive and inductive methods differ in conception. While the deductive method in teacher-centred and expository Moving from the general rules to specific uses/examples, the inductive method in student centred and encourages discovery of grammatical rules by learners. Also the inductive method moves from the specific examples to general rules. The implication for teaching and learning is that some students show strong or moderate preference for one or the other type of teaching methods. Hence this study has set out to find possible solutions to the problem of students' poor achievements in French language in public secondary schools in Ogun state (Nigeria).

The teaching of French language in Nigerian public secondary schools has been faced with the twin problems of poor achievement and a negative attitude to the subject. One of the key possible factor for this discouraging situation might be located in the area of methodology according to some researchers (Adelekan, 1979, Araromi, 1987, Ogunbiyi, 1998, Emordi, 1996, Onumajuru, 2003 and Akeusola, 2006).

Hence the problem investigated in this study was to identify a more effective teaching method, using either the monolingual deductive or the inductive approach since it is expected that the teaching method should be higher, student achievement in French and an improved attitude to the subject in Ogun state public secondary school

DEDUCTIVE AND INDUCTIVE METHODS OF LANGUAGE TEACHING

While learning theories are said to be descriptive teaching theories are describe as prescriptive. According to Romberg and Carpenter (1986) in Glynna (1993) "learning theories describe how children learn and think while teaching theories attempt to draw conclusion about how instruction should be carried out (p.22). Teaching assumption has been based on behavioural psychology and the psychology of learning. For instance, the concept of readiness or maturity staging of instructions was based on Piagets stage theories and Bruners (1986)spiral theory focussed on mix-drill –according to Glynna (1993) "teaching methods are however slow and sporadic in adapting to learning theory (p.23) Romberg & Carpenter (1986) have put forward some generalizations that can guide further research into teaching methods their suggestions are summarized thus.

(a) The perspective taking a current cognitive approach assumes that children are not passive learners who simply absorb knowledge

(b) Current research is beginning to provide some perspective on the intricate relationship between understanding and skill development. Research on teaching that is inconsistent with this general perspective on the nature of learning is in danger of providing a distorted perspective of the effects of instructions (pp, 858 -859)

Therefore there is an inherent suggestion that teaching should be undertaken. According to Romberg & Carpenter (1986) "research is clearly needed to explore how knowledge of childrens' learning can be applied to the designs of instruction. The learning research provides a point for

designing instructions the learning research provides a point for designing instructions (p.859)". We must remember that teaching methods vary. Some teachers lecture, others demonstrate or discuss, some focus on rules and others on examples: some emphasize memory and others understanding. In other words, how much a given student learns in a class is governed in part by the instructor's characteristic approach to teaching (Felder et al, 1995:21-31). This paper focuses on two important methods and their effects on learning the French language.

Deductive Teaching Theory

This type of teaching simply means providing learners with ready grammar, describing in detail how the new structure is formed, what its components are and in what type of situation it can be used. All the information is given in form of a mini- lecture, during which the teacher usually employs grammatical terminologies. After the explanation, the learners are provided with examples illustrating the new structure which they analyse and are subsequently asked to apply the rules to new sentences. This form of teaching offers a clear clarification of new language items, which makes the language tasks easier and less intimidating and is time effective, leaving more time for practising the new structures (Paradonoski, 2007: 110-114). Therefore, it follows that the deductive approach means that the grammar rule in first verbalized by the teacher and then the learners apply it through practise (Pajunen,2007 7:4) That explains why traditionally, engineering and science have taught deductively. Prince and Felder (2006:1) opine that "engineering and science are traditionally taught deductively, the instructor introduces a topic by lecturing on general principles, then uses the principle to describe mathematical models, shows illustrative applications of the models, gives students practice in similar derivations and applications in homework and finally tests their ability to do same sort of things on examinations…."in language teaching, foreign/second language in taught with focus on rules of grammar and future application of the structures learnt in class, Paradonoski (2007:10) quoting Komooroska (1993) explains more clearly that deductive teaching leads from an explicit presentation of rule – driven, top- down set of abstractions isolated language rules at autonomous level of description subsequently accompanied by model sentence to their application to concrete L2 representation and practice task only after the clarification has been studied and digested. Ruin (1996:104) adds that deductive method is seen to facilitate the learner's acquisition by making them notice structures they might not have noticed.

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Among the advantages of deductive teaching methods are that it provides a precise clarification of new language items, thus making it easier to learn such items. This is in addition to being time effective, it gets straight to the essentials of that structure. Equally it confirms the expectation which students have in a classroom situation where the teacher is the sole source of knowledge. Finally, it leaves more time for the students to practise the new structure.

Despite these apparent advantages, critics say it is too teacher – centred and does not encourage considerable student participation, thus creating a docile audience which depends too much on ready – made rules (Paradonoski, 2007). For instance, Shafter (1989:395) and Decoo (1996:107) share the view that knowing explicitly about a rule does not necessarily indicate that the structure is truly acquired, even though they believe that examples can assist the learners to learn the rule. Moreover, as Thornby (2004:30) explains, the deductive method is blamed for making the learner role passive as more attention is on the teacher's explanations of rules of grammar, especially young students might not have enough vocabulary to understand the abstract concepts in grammar. However, despite the opposing views of researchers over the advantages and disadvantages of the deductive method, it is still in wide use due to the long history of its cost and time – effectiveness

Inductive Teaching Theory

Sometimes described as a Socratic, rule – discovery or bottom - up methods, the inductive teaching rejects the notion of giving learners ready – made rules. This method sees language learning as habit formation. Shaffer (1989:395) explains that learners learn the new structure through examples until they become automatic adding that the students will still need the teacher's explanation in form of a summary in order to enhance their understanding of the language items.

Pajunen (2007) writes that the inductive methods moves from the specific to general, adding that learners are first shown many examples that contain a certain items of grammar used in different context for them to work out the rules on their own. Even though, two schools of thoughts differ as regard whether or not the grammatical rules should be verbalised at some point during the lesson. Decoo (1996:97) says that some researchers believe that it may be helpful to do so whereas others believe that it may disturb the process of learning and acquisition. Paradonoski

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(2007) outlines some advantages of the inductive method as student-centred and so "permit students to get really involved in the language class activities offering them the chance for vital reflection thus making them get a feeling of importance, less passive and rarely get bored during the classroom interaction. Moreover the inductive methods is said to help students interaction in the target language during learning activities.

Hence the inductive method of teaching is even seen as capable of "keeping students disciplined, concentrated and occupied," knowing that they can work out the rules from examples by themselves greatly increases learner's motivation (Paradowski 2007:2). Even then criticisms have trailed the use of the inductive method of teaching. For instance, prince and Felder (2006:23) have pointed out that many students are resistant to any type of instruction that makes them more responsible for their own learning and if the appropriate amount of guidance and support is not provided when inductive methods are used, the resistance can escalate to hostility and inferior learning outcomes. Furthermore inductive teaching is associated with waste of valuable time because of the futile and frustrating guess work (Paradowski 2007 explains that the inductive method may leave the student at a loss and cause him or her frustration when the learner is not sure whether he/she has taken the right path of thought, if he/she is correct in his/her findings and conclusions about the new structures he/she is discovering.

This study was guided by the hypotheses which follow:

(i.) There is no significant main effect of treatment on student achievement in French language

(ii.)There is no significant main effect of treatment on student attitude to French language

DATA COLLECTION

Two data collection instruments were used (1) students achievement test in French language (SATIFL) and (2) students attitude to French language questionnaire (SATFLK).

RESEARCH INSTRUMENTS

1) **Students achievement test in French language (SATIFL):** This instrument contained fifty (50) test items: (26) fill-in-the-gap questions, fourteen (14) items on reading test and ten (10) audio-oral questions. This instrument was designed to measure the students'

cognitive achievement in French language in the junior secondary school level. Also this instrument was a modified version of that used by Ajibade (1994)

2) **Students' attitude to French Language questionnaire (SATFLQ):** This instrument consisted of thirty (30) items. It was assumed that the overall responses of each respondent was a measure of his/her attitude to French language

Validity of instruments

The students' achievement test in French language had a reliability co- efficient of 0.9, using the Kuder Richardson method. The students' attitude to French Language questionnaire had a reliability co- efficient of 0.95 using the Cronbach alpha co-efficient.

Sample

A total of two hundred and fifty four (254) subjects were used in this study, comprising 135 males and 119 females. They were drawn from three (3) junior secondary schools in Ijebu ode, Ogun State in south west Nigeria. In one experimental school, ninety (53 males and 37 females) were taught using the monolingual deductive method (Using French Language only). In another experimental school, ninety six (47males and 49 females) students were taught using the monolingual inductive method (Using French Language only). The control group comprised sixty eight (35 males and 33 females) students who were given the placebo treatment (the bilingual method English and French Language were interchangeably used for class instruction).

Treatment

The two experimental groups received treatment (using French only) based on the same course contents: definite and indefinite articles, conjugation of two verbs (Etre= To be; Avoir = To have) in the present tense, identification of objects in the classroom, preposition (sur = on, sous = under, dans =in, a = to, at), number in French (1 – 20) and conjugate of two other verbs (aller = to go; donner= to give). The control group was given the placebo treatment using English and French Language)

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Data analysis and discussion

Data was processed and analysed using analysis of covariance (ANCOVA) to test the mean difference between two monolingual experimental groups which were then compared individually with the control group, pre-test scores serving as covariants.

THE PRESENTATION OF RESULT IS DIVIDED INTO FOUR MAIN PARTS (A-D)

A. Descriptive statistics of result of post- achievement scores in French Language according to treatment groups

Treatment	N	Mean	S.D	Mini. Score	Max. score	Range
Deductive method	90	22.57	8.72	3	39	36
Inductive method	6	21.18	8.59	2	47	45
Bilingual method	8	26.19	8.68	3	47	44
Total	54	23.01	8.86	2	47	45

The result above revealed the academic achievement in French Language of students exposed to the different treatments. The sixty-eight (68) students exposed to the bilingual method (English and French Language) recorded the highest post – achievement means score of 26.19. The achievement of the ninety (90) students exposed to the monolingual deductive method (French) who recorded a post-achievement mean score 0f 22.57 was next while the ninety six (96) students exposed to the monolingual inductive method (French) recorded the least post-achievement mean score of 21.18.

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B. Descriptive statistics of result of post- achievement scores in French Language according to treatment groups

Treatment	N	Mean	S.D	Mini.Score	Max. score	Range
Monolingual deductive method	90	74.44	12.59	24	104	80
Monolingual Inductive method	96	74.61	13.81	33	102	69
Bilingual method	68	72.96	16.45	10	101	91
Total	254	72.98	14.16	70	104	94

The result above presents the students post attitude scores in French Language according to different groups. The 90 students exposed the monolingual deductive method recorded the highest post attitude mean score of 74.44 then, the 68 students exposed to the bilingual method recorded a post attitude mean score of 71.61

Test of Hypotheses

Source of variation	Sum of squares	DF	Mean square	F-ratio	Sig of F
Co- varieties (pretest)	2761.989	1	2761.989	56.780	.0000
Main effect	5930.394	5	1186.078	24.383	.000
Treatment	433.640	2	216.820	4.457	.013

❖ Denotes signifant F at P < **0.05**

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Ho1: There is no significant main effect of the treatment on students' achievement in French

This table reveals the results of the main effect of the treatment on student achievement in French Language. The result shows that there is significant effect of treatment on student achievement in French (F (2235) = 4.45, P < **00.5).** This result implies that treatment has a significant effect on student achievement in French Language (F (2235). Therefore the hypothesis (Ho1) is rejected.

Ho2: There is no significant main effect of treatment on French students' attitude to French Language

Source of variation	**Sum of square**	**DF**	**Mean square**	**F- ratio**	**Sig of F**
Co-varieties (pre-test)	4152.568	1	4152.568	22.597	.000
Main effects	18628.115	5	3725.623	20.274	.000
Treatment	311.395	2	155.698	0.847	.0430

This table reveals the results of the main effect of treatment on student attitude to French Language. The result shows that there is no significant main effect of treatment on student's attitude scores (F (2,235=0.847,P < **00.5).** The implication is that the post attitude means scores of students exposed to the different treatment conditions do not differ significantly. As a result, the null hypothesis cannot be rejected.

CONCLUSION AND RECOMMENDATIONS

In this study, the monolingual deductive and inductive teaching methods (mode of introduction in French Language only) made a strong showing despite the surprisingly higher achievement of the control group (mode of instructions is mixture of French and English language). This outcome suggests that in the bilingual environment, it is not advisable to teach French Language in a monolingual mode (using French only), especially at the basic level of education in an Anglophone environment such as Nigeria.

This study indicates that in the Nigerian context, a careful combination of the monolingual deductive and inductive methods delivered in a bilingual mode will yield higher achievement by students in the public secondary school segment. Equally this study reveals that both monolingual deductive and inductive teaching methods have the potential to encourage achievements (mean score of deductive group= 22.57 and mean score of the inductive group = 21.18 leading to a statistically insignificant difference of 1.39)

Recommendations

Based on the findings and conclusion in this study, the following recommendations are made. One, both monolingual deductive and inductive teaching methods could be used as supportive methods to the bilingual method in a way to improve the teaching and learning of French Language in public secondary schools (in Nigeria). Two, each secondary school should provide a separate room for French Language practicals to act as a mini language laboratory where speech drill will be taught using pre-recorded radio, computers and television materials.

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