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*RESEARCH ARTICLE*

# TEACHING ENGLISH INTONATION-PATTERN WITH TECHNOLOGY: AN EXAMINATION OF THE EFFICACY OF COMPUTER-ASSISTED-LANGUAGE-TEACHING FOR NATIONAL DEVELOPMENT

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## ABSTRACT

This study examines the Efficacy of teaching English Intonation-Pattern using Computer Assisted Language Teaching in Nigerian secondary schools for national development. The study had one research objective, one research question and null hypothesis. The study adopted quasi experimental design. A total number of sixty (60) students. The experimental group consisting of thirty (30) students while the control group thirty (30) students were selected using simple random sampling technique. The subjects in the experimental group were taught using Computer Assisted Language Teaching method while the control groups were taught using Conventional Classroom teaching method, for a period of twelve weeks. One validated instrument with reliability coefficient 0.79, Supra-segmental Achievement Test (SAT) was used for the study. The finding from the study revealed that there is significance difference in the mean academics' performance scores of the students taught using Computer Assisted Language Teaching in English intonation pattern. Based on the findings of the study it was recommended that CALT should be integrated in classroom for teaching intonation pattern. It may also help in producing teachers who may help to focus and shift the learning style from teacher-centred to student -activity-centred. It will also enable the students to take charge of their own learning and gather experiences that can help them retain what has been learnt.

**Keywords**: Teaching, English intonation, computer-assisted-language, national development

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## 1.0. NTRODUCTION

Computer Assisted Language Teaching (CALT) is based on the use of technology for teaching and learning Intonation Pattern of English sound system. It is described as the use of digitalized speech for improving pronunciation. Technically, Computer Assisted Language Teaching is an approach in which computer technology is used as an aid to presentation, reinforcement and assesment of materials to be learned. Thus, Intonation Pattern usually includes a substantial interactive elements. In other words, it is an interactive instructional technique where by a computer is used to present the instructional material and monitor the teaching that takes place in combination of text graphic, sound and even video in enhancing the teaching and learning process. Therefore, the question is what is intonation pattern of English language?

## 2.0. THE CONCEPT OF INTONATION: DEFINITION AND FUNCTION

**V**arious definitions were advaced by differents scholars (Gimson, 1980; Roach, 2010; Davenport, 2013; Bidya, 2015;, Iyeola, 2017) on what constitutes the meaning of intonation. No definition wouldbe completetly satisfactory without any attempt at recognising that the pich of the voice plays the most improtant part.

According to Roach (2010) and Bidlya (2015), intonation is defines as the rise and fall of the voice in speech(or the variation in pitch). But Davenport (2013) defines intonation as the variations of voice over large structures like prases or sentences. For Jolayemi (2014), intonation is define as high and low of the pitch of an utterance. It is also describes as voice modulation. Iyeola (2017) asserts that "intonation refers to the pattern of changes that take place during speech production". It could be derived from the above definitions that, intonation is in connection with speech. The meaning of English utterance is convey to a listener not only by stress, but also by means of variation in the pitch of the voice. The changes, therefore in the voice pitch from low to high or vice-ivsa is conditioned by the meaning the speaker intends to pass across. The change in voice pich enhances meaningfulness and understanding of an utterance. It is the change in pitch that enables the listener to interpret an

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utterance accurately and get the correct information passed across. However, intonation conveys the attitude or mood of the speaker to his audience. For instance, whether the speaker is doubtful, angry, impatient, polite or impolite or asking a question is expressed through intonation. It is therefore another feature of speech which affects the understanding of a message. It is also a feature which makes speech interesting and not monotonous.

**Patterns of Intonation**

There are three basic patterns of intonation in English language. These are rising, falling, rising and falling tones (tunes).

**Rising Tone**

In rising tone, the rise begins in pitch from first stressed syllable until it reaches the highest peak on the last stressed syllables at the end of the sentence; the syllables are rendered with the rising tone to maintain the rise in pitch. The ◊ indicates the syllable on which the rise is initiated. Rising Tone functions is used with:

i Questions that require 'yes' or 'No' answers.

ii Questions that do not have formal question markers (i.e.questions thatare structurally statements but function as questions). For example:

A. Questions requiring 'Yes' or 'No' answers
   1) *Would this weekend suit you?*
   2) *Must you go with them?*
   3) *Is your father at home?*

B. Questions that are statements but function as questions:
   1) *He is going home?*
   2) *She is ill?*
   3) *I stole your book?*

iii The rising tone could also be used to express the speaker's attitude such as doubt, uncertainty, indifference, greetings etc. for example:

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A Utterances expressing indifference

1) *Whatever you say*
2) *If you think it is necessary*
3) *As you wish.*

B Utterances expressing doubt

1) *You are sure?*
2) *It rained in January?*
3) *You did this yourself?*

C Utterances expressing greetings

1) *Good morning*
2) *How is the day*
3) *Compliments of the season*

**Falling Tone**

In falling tone, the first stressed syllable or word is the highest in pitch and each succeeding syllable which follows and is stressed, is spoken on a slightly lower pitch. The voice pitch thereby descends gradually until the last syllable or word receives the final fall. The (‿) indicates the syllable on which the fall is initiated. Falling Tone functions as is used with exclamations (interjections). For example:

i. *What a day!*
ii. *How delicious!*
iii. *What a pleasant surprise!*

**Falling and Rising Tones**

There are number of situations where the falling or rising tone alone could not convey the message in such situations, both tones are combined to form the rising and falling or falling and rising tone. The rising and falling tones are used with functions are used with:

a) Listing items (begins to rise on each successive item listed but falls on the final items.

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b) Inconclusive phrases within sentences (the rising tone is used on the non-final part of the sentence while the final part receives the falling tone).

c) Question tag (the statement part receives a falling tone, while the tag reserves a rising tone). Examples for above include:

i. *Listing items*
*I bought a mango, an orange and some carrot.*
*ii. Inconclusive phrases within a sentence*
*Through unqualified, he was given the job.*
*iii. Question tag*
*He won't be here today, would he?*

**Research Objective**

This intends to achieve the following objective:

1. Determine difference between the performance of students taught English Intonation Pattern using Computer Assisted Language Teaching and those taught without the CALT

**Research Question**

The present study answers the following research question:

What is the difference between the performances of students taught English Intonation-pattern using Computer Assisted Language Teaching and those taught without the CALT.

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**Null Hypothesis**

The following null hypothesis is formulated to guide this research work to be tested at $\alpha \leq 0.05$ level of significance.

There is no significant difference between the performance of students taught English Intonation Pattern with Computer Assisted Language Teaching and those taught without the CALT

## 3.0. RESEARCH METHODOLOGY

The participants in this study consist of sixty (60) Senior Secondary School Students. They also took some pronunciation lesson such as phonetics and phonology generally known as oral English. They were all non-native speakers of English and fluent in their mothers language. They participated in this experiment as a regular class activity in an oral English pronunciation class.

The instrument used for the study was supra segmental achievement test, while the design for this study was quasi experimental design. The data of the pretest is compared with that of the post-test to find out if the treatment has significant effect. In this study, experimental and control groups were subjected to pre-test and then treated. The treatment is teaching using computer assisted language teaching for experimental group and the conventional teaching method for control group (CG). Post treatments are administered to the experimental and control groups to examine the effect of the treatment on students' Academic Performance.

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## 4.0. PRESENTATION OF RESULTS AND DISCUSSIONS

### 4.1. Presentation of Results

The research question was answered using descriptive statistics while the hypotheses were tested with t-test. 0.05 level of significance as shown from Tables 1.

**Question One**: What is the difference between the performance of students taught English Intonation pattern using Computer Assisted Language Teaching and those taught without the CALT??

To answer this research question, the mean score of experimental and control group after receiving the treatment with Computer Assisted Language Teaching and those taught without the CALT was analyzed and as shown in Table 1.

**Table 1: Descriptive Statistics of Post – Test for Experimental and Control Group on English Intonation Pattern.**

| Group | N | $\bar{X}$ | Std Dev. | Mean Diff |
|---|---|---|---|---|
| Experimental | 30 | 13.13 | 4.89 | |
| Control | 30 | 10.53 | 2.22 | 2.6 |

**Source:** Author's Analysis (2025).

Table 1 reveals that after the treatment, experimental group had a mean score of 13.13, while the control group had a mean score of 10.53, with the mean difference of 2.6. This means that the students that were exposed to Computer Assisted Language Teaching performed better than those that were not exposed to the treatment.

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**Null Hypotheses Testing**

**Hypothesis One**: There is no significant difference between the performance of students' intonation pattern with Computer Assisted Language Teaching and those taught without the CALT. Pair Sample t-test used in testing this hypothesis is shown in table 4.7 below:

**Table 1.4:** Independent Sample T-Test English Intonation Pattern of Experimental and Control Group.

| Group | N | Mean | Std Dev. | T-Value | Df | P-Value |
|---|---|---|---|---|---|---|
| Experimental | 30 | 13.13 | 2.2 | | | |
| | | | | 4.54 | 58 | 0.000 |
| Control | 30 | 10.53 | 2.22 | | | |

**Source:** Author's Analysis (2025).

Outcome of the independent sample t-test on table 1.4 shows that Significant difference exist between the performance of students taught intonation pattern using Computer Assisted Language Teaching and those taught without the CALT. This is because the observed value was t- (58, 4.54) p = 0.000 which is less than 0.05 alpha level of significance as chosen by this study.

Therefore, the null hypothesis (HO1) which states that there is no significant difference between the performance of students taught intonation pattern using Computer Assisted Language Teaching and those taught without the CALT is hereby rejected. This implied that there is significant difference between the performances of students taught intonation pattern using Computer Assisted Language Teaching and those taught with conventional method.

**4.2. Discussion of Findings**

The following is the major finding from the data analysis and the test of the hypotheses summarized below:

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Significant difference exists between the performance of students taught intonation pattern using Computer Assisted Language Teaching and those taught without the CALT. The descriptive statistics reveal that, the Post-test scores for the experimental group were 13.13 while in the control group the post test scores were 10.53. This is to say that intonation pattern of the students before the treatment was too poor and lack rhythmic pattern and coherence. All these were achieved as result of exposure to the treatment such as interactive, repeated learning tasks, brainstorming and peer collaboration that immensely enhanced the students ability to use intonation pattern correctly.

### 4.2. Discussion of Findings

The result of the data analysis from this experiment reveals among other things that the use of Computer Assisted Language in teaching Suprasegmental phonology is significantly better than the conventional method of teaching the concept. In the test of the first hypothesis, the effect of CALT on English Stress pattern was tested by comparing the academic performance of the students who were exposed to CALT and those students who were in the control group that were not taught using CALT. The result of the test showed that students who were taught with CALT significantly performed better than those who were taught with conventional method of teaching.

The finding from hypothesis two of this study also revealed that students taught English intonation pattern using CALT performed better and has a higher mean score in their achievement test than those students taught using traditional method of teaching. This finding is a agreement with that of Chapag (2015) who reported that CALT improves students' attitude toward teaching supra segmental features of spoken English through CALT (film) were positively retain at a higher level than their counterpart taught using individualise learning strategy. This is supported by the finding of Usman (2015) who revealed that the use of CLT strategy has a positive effect on both recall and retention of oral fluency and collocation.

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In a perspective, Bolaji (2015) agrees that CALT provide opportunities for inquiry based approach to the teaching of phonology and it discourage rote memorization while encouraging conceptual understanding and critical thinking.it is also agrees with Mayer (2015) who revealed that CALT tutoring group outperformed those of control group in both learning and retention of English vocabulary.

Similarly, it agree with Hassakhah (2018) whose finding revealed that the experimental group vocabulary retention statistically improved than the control group. It also agrees with the finding of Sun (2017) who reported that reading-based collaborative output actively enhanced young adult EFL (English as a Foreign Language) learners' intonation and retention.

## 5.0. CONCLUSION

From the finding of this study, it was deduced that the use of Computer Assisted Language Teaching is effective for teaching and learning of supra- segmental features on the performance of intonation, in senior secondary school students II in North-West, Nigeria. Though, students taught using Computer Assisted Language Teaching outperformed their counterparts taught using traditional method of teaching.

Students' ability to retain what was learned after certain period of time could be influenced by the nature of instructional video and strategies employed for teaching and learning. Therefore, students taught supra-segmental using Computer Assisted Language Teaching retained the content more with fluency skills than those taught using conventional method.

To this end, it is therefore deduced from this study that Computer Assisted Language Teaching on group-based teaching is more effective than the traditional classroom teaching in improving students' performance on concept of suprasegmental phonology.

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**Competing Interest**

The author declares that no conflicting interest exist in this study.

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