# A comparative study of the effect of CALL on gifted and non-gifted adolescents' English proficiency

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**Abstract**. Computer-Assisted Language Learning (CALL) has gained increasing acceptance since it provides learners with abundant resources. Most researches confirm the beneficial effect of CALL on English as a Foreign Language (EFL) learners' cognitive, metacognitive, and affective developments. However, the diversity of students' intelligence is associated with different language learning needs. The study aimed to compare the effect of CALL on gifted and non-gifted EFL adolescents' English proficiency and their perceptions of CALL. The study included 20 EFL seventh graders with similar English proficiencies. Six were recognized as gifted and fourteen were non-gifted with reference to their IQ score in the Wechsler Intelligence Scale for Children- Fourth Edition (WISC-IV). Participants received 8-weeks of the VoiceTube online learning programme. A mixed method was employed to analyze the data obtained from General English Proficiency Test (GEPT) scores, learning logs, questionnaires, and interviews. The result revealed the gifted students' English reading and listening proficiency outperformed the non-gifted ones in the post-test. They were motivated and enthusiastic in challenging themselves with *i*+1 online learning material. By contrast, most non-gifted students held passive attitude toward CALL and doubted its effectiveness for their exams. Some felt anxious about the miscellaneous online learning materials. CALL should be an enhancement, not a replacement, in balance with conventional instruction.

**Keywords**: CALL, gifted adolescents, English proficiency.

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## 1. Introduction

CALL is deemed as a vital objective of modern education since it provides abundant resources for EFL learners' self-directed learning (Reilly, 2012). Most previous researches confirm the beneficial effect of CALL on EFL learners' cognitive, metacognitive, and affective developments (Golonka et al., 2014). While facing a wide range of abilities in heterogeneous classrooms, teachers desire to meet all students' needs, and believe CALL would help them reach this goal. However, a "one size fits all" approach to promote language proficiency might not work well. Few studies investigate the effect of CALL on promoting the language proficiency of EFL adolescents with different IQs and needs.

Moreover, CALL studies have fallen into the trap of attributing learning gains to the technology itself rather than to the way the technology is manipulated by learners to influence achievement. Therefore, it is essential to conduct an empirical study to gauge the effect of CALL on promoting the English proficiency of EFL learners with different intelligences. The aim of this study was three-fold. The first was to outline a course that put CALL at the center of the curriculum with the aim of increasing EFL learners' reading and listening proficiency, the second was to compare how effective CALL enhanced the gifted and non-gifted EFL learners' English proficiency, and the third was to investigate their attitudes towards CALL.

## 2. Method

### 2.1. Participants

The study included twenty EFL 7th graders with similar English proficiencies. Six of them were identified as gifted based on their achievement tests and IQ scores measured by WISC-IV, which included five cognitive domains: verbal comprehension, visual spatial, fluid reasoning, working memory, and processing speed.

The giftedness assessment was administered by qualified psychologists and school teachers.These gifted students acquired and memorized knowledge rapidly. They liked self-directed learning and extensive reading in special interest areas. However, they were not gifted in all areas of academics. They had one or two subjects that they were best in and passionate about. Half of them usually got bored and daydreamed in regular English classes owing to mechanical drills and unengaging content. As for the non-gifted students, they liked teacher-centred instruction and repetitive practice.

### 2.2. Instruments

The learning materials utilized in the CALL project were the online resources provided by VoiceTube, which is an open and free English learning website. It offered users dynamic language learning experiences and contents of over 15,000 videos, including TED talks, news, movie segments, comics, and games. The other instruments were the GEPT, official documents, learning logs, pre- and post-project questionnaires, and semi-structured interviews.

### 2.3. Procedures

The study was conducted by means of a pre-survey, treatment programme, and post-test design. Participants had GEPT as the pre-test and post-test. The CALL project took 8 weeks, two hours a week, from September to October in 2014.

Both the gifted and non-gifted groups received 8-weeks of the VoiceTube online learning programme, involving a variety of topics with tailor-made activities. They had to complete questionnaires at the end of the programme. Lastly, semi-structured interviews were conducted with four participants.

### 2.4. Data analysis

A mixed method was employed to analyze the data obtained from GEPT scores, learning logs, questionnaires, and semi-structure interviews. An independent *t*-test and paired-samples *t*-test was conducted to see if there were any intergroup and intragroup differences on the pre-test and post-test separately. Participants' responses on the questionnaires were coded and categorized. The semi-structured interview was analyzed for triangulation.

## 3. Discussion

### 3.1. The effect of the CALL project

In Table 1, the results showed that the GEPT scores of the gifted and non-gifted groups were not significantly different in the pre-test ($t$=-.30, $p$=.77) but they were in the post-test ($t$=2.35, $p$=.03). Gifted students performed much better than the non-gifted ones in the post-test. Table 2 revealed the results of the paired-samples *t*-test for the gifted and non-gifted groups. It indicated a strong statistical significance ($t$=-11.61; $p$=.00) for the gifted group in the variation over time. The increased mean difference indicated the CALL project positively impacted gifted students'

English proficiency. No significant differences were found between pre-test and post-test for the non-gifted group ($t$=1.31; $p$=.21).

Table 1. Results of independent $t$-test of gifted and non-gifted students' GEPT scores in pre- and post-test

| Source | | No. | Mean | SD | *df* | *t* | *p* |
|---|---|---|---|---|---|---|---|
| Pre-test | Gifted | 6 | 119.16 | 31.02 | 18 | -.30 | .77 |
| | Non-gifted | 14 | 125.61 | 47.81 | | | |
| Post-test | Gifted | 6 | 159.36 | 26.93 | 18 | 2.35* | .03 |
| | Non-gifted | 14 | 122.30 | 42.32 | | | |

*$p$<.05

Table 2. Results of paired-samples $t$-test of pre- and post-test of gifted and non-gifted groups

| Source | | No. | Mean | SD | *df* | *t* | *p* |
|---|---|---|---|---|---|---|---|
| Gifted | Pretest | 6 | 119.16 | 31.02 | 5 | -11.61*** | .00 |
| | Post-test | 6 | 159.36 | 26.93 | | | |
| Non-gifted | Pretest | 14 | 125.61 | 47.81 | 13 | 1.31 | .21 |
| | Post-test | 14 | 122.31 | 42.32 | | | |

***$p$<.001

### 3.2. Participants' reflection on the CALL project

The results revealed all the 6 gifted students expressed a positive attitude but the non-gifted students held different views toward the CALL project.

#### *3.2.1. Motivation*

Most gifted students were intrinsically motivated, enthusiastic, and engaged in learning English through VoiceTube, which provided adequate challenges, individualized learning experiences, and maximized opportunities for self-fulfillment. Although the non-gifted students thought the videos and animation were interesting, half of them watched them for fun, not for learning's sake. When VoiceTube was treated as a compulsory learning task, it became an unwanted burden because they had no intention of doing additional exercises.

#### *3.2.2. Multi-media and authentic input*

The varied authentic English learning materials of VoiceTube allowed the gifted students to process information in a parallel way. Repetitive practice was skipped.

It reduced boredom and freed up time for them to work on more challenging learning materials at their own pace. It was a challenge, but gifted students did feel they could learn from it.

From Krashen's (1998) perspective, language acquisition takes place when the learner is exposed to input that is just beyond their current stage (*i*+1). In contrast, some non-gifted students were overwhelmed by the abundance of information and felt tense with the various authentic stimuli. Some complained it was time-consuming to find what they needed.

*3.2.3. Learner autonomy*

The learner-centred English practice provided by VoiceTube best fit the gifted students who liked to work independently. They were active participants in the learning process rather than passive recipients of knowledge. They delved deeply into the learning materials on VoiceTube that interested them. They learned more from self-directed discovery. By contrast, most non-gifted students

> "were bewildered by the idea of accepting responsibility for their learning. [... They felt frustrated] when they found the explanations from the computer unclear or hard to understand" (Lu, 2010, pp. 353-354).

## 4. Conclusions

The CALL project made the classroom increasingly dynamic and adequately challenging for gifted students. It created a natural and exciting learning environment which helped them to move at an accelerated pace with new materials. Options for self-selected online materials led to their deeper engagement.

On the contrary, some non-gifted students held passive attitudes toward CALL and were limited in their gains in self-directed learning. Most doubted its effectiveness for their exams. The absence of face-to-face professional guidance caused their dissatisfaction and anxiety. Therefore, CALL is suggested to be an optional, voluntary, and complementary means of learning.

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