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A Study of impact on English language skill using content and language integrated learning approach adopting blended teaching

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ABSTRACT

The current research aims to study language learning skill enrichment impact on EFL/ESL learners through the use of Content and Language Integrated Learning (CLIL) approach adopting blended teaching. With education shifting from knowledge acquisition to competency-based learning, and the post-pandemic demands of teaching online becoming a norm, a contextually relevant language teaching approach at school level has become necessary to investigate. In the current study, blended teaching denotes a combination of physical mode and the live online or web-based technology tools used teaching. Likewise, CLIL denotes content integrated language learning where content of various academic disciplines is used as teaching resource to provide the cognitive load, to achieve the objective language skill in English language Teaching (ELT). The quantitative study includes two groups (n=25) experimental group and (n=25) controlled group with the heterogenous mix of boys and girls of 15-16 years age selected from an online English School of India. The selected student sample had exposure to English language learning in an academic setting for at least ten years in the international curriculum prior to study. The results of the study are measured analysing the data of student's pre-test, post-test and the delayed post-test conducted before, during and after the treatment respectively. For comprehending the attitude towards learning, a survey questionnaire has been used. The results demonstrate the performance of the experimental group in language skill development and maturity in thoughts has incremental improvement when compared to the conventional teaching of form focused language skill acquisition in the physical setting.

KEYWORDS: Blended teaching, CLIL, ELT, EFL, ESL, English, Language Skills

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1. Introduction

The ever-evolving technology since 2000s and globalization necessitate to revitalize the learning and teaching experience in the school context to be relevant and appropriate for the 21st century educational context. Additionally, the demands of the industry to make young learners' industry ready demands to relook the approaches and methods used by the teachers in the classroom teaching and assessment in both online and offline context. Although the established Language Learning theories align well to adapt with the changing circumstances in language learning, there is lack of sufficient research data to establish its efficacy. Technology usage in education came handy during and post-pandemic era assisted by web-based tools, stimulating the learning experience of the gen Z learners. The 2020 pandemic that took the whole world indoors in just one sweep of storm for a long period of time, forced the Schools and Universities to shift their methods of delivering classes from physical set up to online mode instantly. In these unprecedented times technology has come as a fresh leash of life, but with its own inconveniences because of its embryonic stage of implementation of technology tools in language teaching. With no sufficient research and lack of training for such a sudden disruption, the impact it had in the language learning environment is huge. Although there was reluctancy in usage of technology among the greater number of educator community, the extensive research carried out in the area of integrating technology in education provided great support and boost to the use of technology in teaching, testing and further research. Later researches endorsed positive feedback about technology usage in education. According to the AACTE paper titled Partnership for 21stCentury Skills (P22), "Teachers reported that as a result of using technology in the classroom students felt more motivated to learn (51%), apply their knowledge to practical problems (30%) and take ownership of their learning (23%)." They further reported that by using technology students are developing key 21st century skills including "creativity (39%), collaboration (30%) problem-solving and critical-thinking skills (27%); thus, effectively preparing them for future success in the workplace." (Bull et al., 2010). However, the complete online mode of teaching complained about the lack of social interaction and human touch leading to isolation, affecting teaching and learning both among students and faculty. To counter these alternative ways have been explored in language learning. Content and language integrated learning (CLIL) approach adopting blended teaching implemented across Europe and USA since 2000s to encourage meta cognition skills of the learners while keeping the interest for language learning intact. Many earlier studies have proven that CLIL approach creates an environment where language woven around the technical subject make language learning more meaningful, astute and realistic. (Hicks et al., 2001) observed the past researches asserted universities "to provide for a larger and more diverse cross-section of population to cater for emerging patterns of educational involvement which facilitate life-long learning and to include technology–based practices in the curriculum". Fenner (1995) in the post Fordist vision on technology asserts that software tools allow simulation and encourage active engagement in the subject matter, making computer technology as a thinking tool that help learner construct knowledge (Renner, 2015). With CLIL requiring students to process both content and language simultaneously and the technology tools coming handy due to blended teaching mode, CLIL approach adopted in blended teaching was implemented at high School level for EFL/ESL learners to teach language skill in the current study to comprehend the impact it creates in ELT classroom setting. The theoretical underpinning for the study was chosen in the framework Jean Piaget's cognitive theory that stands in the premise that language proficiency and academic achievement in the growing stages of children is relatively proportionate. In the current study the 4th stage of the formal operational stage of students (above 11-adult) is considered as the sample study are the high school students. The activities and practices that is hands-on in the plan is facilitated by CLIL approach, and the technology tools are facilitated due to blended teaching.

2. Literature Review (Theoretical Underpinning)

There is a general agreement that language proficiency comprises of underlying abilities, knowledge system and skills (Noam, 1975) of the students. Bruner (1975) distinguished language proficiency into three: linguistic competency, communicative competency and analytical competency (Main, 2023). However, the concern raised after the Language proficiency assessment (LPA) symposium in 1981 is that " the major reason for confused state in the art of language assessment stems from the failure to develop adequate theoretical framework for relating language proficiency to academic achievement" (Cummins, 1979). The critical view point on Cummin's

theoretical framework lead to delving into one of the specific issues which recognizes that certain second language learners who perform well on test requiring authentic communication may lack the to perform in the academically oriented subject like solving mathematical problems (Michael Canale, 1984). This demanded for further insight into looking for strategies to fill the gap between language acquisition and cognitive development established by the Jean Piaget's Cognitive theory. According to Jean Piaget (1959) problem-solving skills cannot be taught but they requires to be explored in children. Therefore, the current study using CLIL approach adopting BT provided natural premises of autonomous learning environment to the learners and the subject content used to teach language skills gave strength to the academic achievement measurement while focusing on language skills.

2.1. Understanding Blended Teaching

The current technology platform includes the ambit of communication system, collaborative working and greater degree of predictability and flexibility empowered by artificial intelligence. (Moore et al., 2016) states in their design of four-course professional development series on teaching in blended learning that blended learning gives learners and teachers a potential environment to learn and teach more effectively, providing flexibility to incorporate various curricular and institutional needs, goals and priorities. "Blended learning is the most logical and natural evolution of our learning agenda. It suggests that blended learning is an elegant solution to the challenges of tailoring learning and development to the needs of individuals." (Kaye Throne, 2003). Similarly, (Sarhan & Qoura, 2020) concludes that blended teaching acts equally useful for teacher enrichment of 21st century skills, showcasing the relevance of blended teaching in the context of technology led environment. Therefore, blended learning was used in the current study to create a feel of relevance and meaning to the language learning experience of the learners.

2.2. Understanding CLIL

CLIL methodology emphasises more on 'content' rather than 'form'. The 4C's of 21st century curriculum is observed as critical thinking, creativity, communication, and collaboration, the major essentials of modern-day sustenance (Marsh,2002). CLIL provides the cushion to these major essentials while focussing on the core language skill development of reading, speaking, listening, writing, vocabulary and lexis. Therefore, CLIL is considered neither a language lesson nor a subject lesson exclusively. It employs language skills to pass on the content knowledge of different technical subjects, making easy for the learners to avoid separate focus and time for language and content. In the words of its first promoter, David Marsh, CLIL is a "language pedagogy focusing on meaning with contrast to those which focus on form" (Coyle, 2012). The research and implementation of language initiatives through CLIL has seen growth and indulgence in 1980 and 1990. Many European countries such as, Netherlands, Germany, Finland, Hungary, Czech Republic, Poland, Slovakia and of late USA has seen the implementation of CLIL in education and elicited its positive responses from the teachers. "In 2005, Marsh suggested CLIL to be "a general 'umbrella' term to refer to diverse methodologies which lead to dual focussed education where attention is given to both topic and language of instruction". In 2006, the Eurydice reported that CLIL was available in most European member states. The way how CLIL worked in 2007 in 20 European countries was presented in Windows on CLIL ((Maljers et al., 2007). Most of the approaches discussed in Windows had been implemented in secondary schools, with only a few countries running "early education programmes – Austria, Finland, Hungary, and Spain"; the last decade has witnessed a boom of research in CLIL, although it has focused more on the linguistic than the non-linguistic elements of CLIL ((Hanesova, 2020). With the multidisciplinary research done by linguists, educators, psychologists, neurologists, the model of dual language and content, its aims have gradually supplemented by a third strong research focus and CLIL pillar – emphasising on student's learning strategies and thinking skills (Hanesova, 2020). Content and Language Integrated Learning (CLIL) approach provides the learner a critical environ and problem-solving situation through task-based delivery method. The task seamlessly moves the learner from the bottom of Bloom's taxonomy pyramid of enquirer to the top layer of the pedestal critical thinker. In the context of language learning the same thing is achieved in the bottom-up pyramid. The receptive skills of listening /reading leading up to productive skills of speaking/writing. Research proves that CLIL could develop the necessary competencies of the 21st century globalized world. The real-life situation that are offered in CLIL to use in

English language as a means of communication helps the learners develop flexibility, patience and tolerance in a multi-cultural group. The much recent popular method used in many European Pre-university course, CLIL has been welcomed and assimilated in teaching language to extract the expected language requirements through the content. CLIL approach facilitates the language content chosen based on themes, topics and stories taken from a wide range of disciplines which are interwoven accordingly to explore the English language skills acquisition. Hence, CLIL approach adopting blended teaching was aimed to investigate in the current study to comprehend the impact in the premise of the following three research questions:

> RQ.1. What will be the impact of CLIL approach adopting BT on EFL/ESL learners for developing language skill and discipline specific concept learning?
> RQ.2. How can multimedia enrich learner's experience to produce output in target language using CLIL approach adopting BT?
> RQ.3. How is learners' perception shaped towards language learning using CLIL approach adopting BT?

3. Methodology

The students selected for the current research include boys and girls in the age group of 15-16 of an online English School of India. In total 50 non-native homogenous participants are randomly selected as samples for the study. All the participants have at least ten years of exposure in English language learning of complex academic material used in international curriculum at the high school level prior to the study. The students were divided into two groups, controlled (n-25) and experimental (n-25) after the pre-test. The division of groups were made randomly after assessing the test results of the pre-test to standardise the sample selection. The controlled group received exclusive face-to-face conventional classroom teaching in the form focused teaching approach, whereas the experimental group received CLIL approach adopting blended teaching. In the current study, blended teaching denotes a combination of physical and live online web-based tools driven teaching. For both groups, the classes were conducted for three months period by the researcher concurrently. To measure the outcome of language skill development, understand students' involvement in learning, and their maturity in thoughts, the test performances, questionnaire, and student oral interview data were analysed of both groups. Before the commencement of the research semester, the teacher planned the CLIL lesson plan, required activities and web-based tools to be used for the purpose of teaching and learning. To fulfil the purpose of the study the teacher taught four components of language skills- reading, writing, speaking and listening to the students. Based on the scores analysed after the post-test and the delayed post-test, the result showed that the paired sample t-test failed to reject the null hypothesis. Additionally, the questionnaire administered after the treatment helped to understand the learner's comfort level in language learning among the experimental group.

4. Material Chosen

In the current study, the controlled group received the conventional teaching and the experimental group received CLIL approach adopting blended teaching in English language learning. Both group works were assessed for all the four components of language skill. The results of the post-test and the delayed post-test were analysed of both groups to comprehend the difference in their language learning outcome. In the CLIL approach adopting blended teaching used for experimental group, there was use of online platform and web-based tools during the treatment. However, for the control group it was the regular lesson plan of form focused language teaching in brick-and-mortar class room. The questionnaire used was to collect data and analyse the experimental group student's learning behaviour. The questionnaire in the Likert scale of 1-5 (convenient 5, mostly inconvenient-4, neutral-3, inconvenient-2, extremely incovneient-1) with 5 being the highest and 1 the lowest was used to the collect the data.

Figure 1: Design Plan for CLIL Approach Adopting Blended Teaching

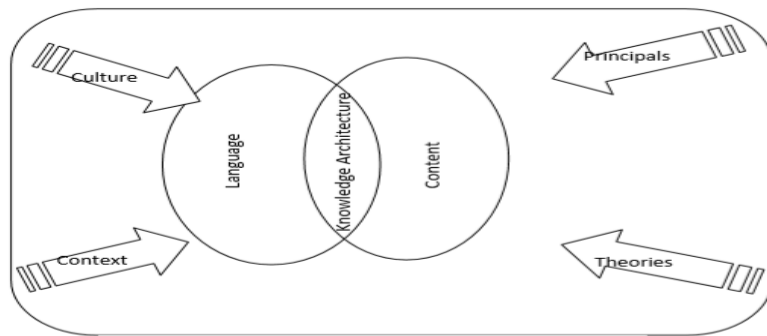Design Plan for Reading skill in Blended Teaching F.1

Fig. 1: Blended Learning Architecture

5. Example Teaching Sample

5.1. CLIL Approach Adopting Blended Teaching for experimental group- Teaching Sample detailed

The course-design module used to develop English language skills in CLIL approach adopting Blended teaching is detailed here. In a hypothetical premise, imagining the language is taking place for the students at the high school level with a medical science background; Medical Science (Biology Major) as their future specialization in universities. The language skill objective focus of the sample plan was to develop 'Reading Comprehension' The content concept chose from the discipline of Biology was Gene Theory. The teacher chose a passage about an interview of a doctor and the would-be parent to be given as a reading material. Expecting that students already have prior knowledge of GMO and its challenges and utility in the real life the teacher posts a YouTube video link (see appendix 1) related to the topic of about 10-15 minutes length. Also, the teacher asks students to read the passage along with a hyperlinked article 'Genetically Modified Children'. This is accompanied with a worksheet that includes fill the blanks, cloze passage–in precise writing, note-making, summary writing posted in the google classroom a day prior to the teaching of the concept offline. Through reading comprehension, the teacher aims to develop listening and writing inducing critical thinking using concepts from biology subject. The follow up task after teaching is to pick technical vocabulary, denotative meaning of words and phrases with the help of online dictionary or other resources.

After teaching the concept in detail and having a role-play conducted in an assumptive situation. The consequences are delved in-depth in the group discussion, and later for deeper, insight an online discussion of opinion is initiated through a blog post to be commented online in a private study group created. Following this the teaching shifts to language skill; students learn to describe terms of the concepts, compare and contrast, reflect and generalize the terms being learnt.

The next step is the speaking skill, where the students prepare a presentation using convenient web tool for a given prompt taken from the concept learnt and present to the group. While speaking the focus of the student is drawn towards fluency, coherence, clarity, register and tone along with the content by the teacher. Finally, a mini-project or case study task is given with ample credible research links related to the topic by the teacher. Students at this stage are expected to write a formal critical essay about the concept learnt that is both reflective and predictive. The essay is marked using language focus criterion like knowledge, interpretation, analysis, organization and language one overlapping the other.

Teacher maintains daily observation diary and students maintain daily portfolio to note down their teaching and learning experiences and tweak the plan when required with the support of these observations in the journals. CLIL approach adopting blended teaching therefore, provides diverse learning experience to the learners in length and breadth making language learning serious and relevant at the same time. For the lesson plan sample (See appendix II).

Whereas in the conventional form focused approach in the brick-and-mortar classroom teaching, the regular conventional lesson plan was used. The aim was to develop vocabulary, grammar, sentence construction, composition and essay writing abilities in English language. The reading material used was from the prescribed coursebook of the grade level and the assessment was to understand the development of form and structure

in the four components of English language skill. Therefore, students' appreciation for relevance of language learning in the current context and complex learning demands for being industry ready felt ignored.

6. Instrument

To standardise the sample selection for comparison, an IELTS model four sectioned reading, speaking, listening and writing – question paper was administered as a pre-test to all the participants. It was arranged after some practice was provided to the participants. After making them aware about the structure of the test, and the set criteria required to achieve scores against each skill of the four language components, the pre-test was administered. The evaluation of the mean scores of each question of the test of both groups were obtained to standardize sample selection. A post-test was conducted after the 45 days of the treatment of the cognitive load, and a delayed-post-test was conducted at the end of the treatment period for both groups. The post-test consisted of vocabulary, summary, oral and comprehension to evaluate the language skill component and the delayed-post-test consisted of long essay writing to estimate the critical thinking and problem-solving skills of the students of both groups. The post-test data results (Control group-23.68 and Experimental group-29.68), and the delayed post-test results (Control group-24.38 and Experimental group- 34.75) exhibits an enhanced Mean score of the experimental group when compared to the control group.

6.1. Data Collection and Analytical Method

Both groups participated in the post-test during the mid-session of the treatment in the second month and the delayed post-test in the end of the third month. The time limit for post-test was 50 minutes and delayed post-test was 45minutes. 50 valid test answer scripts were received after every test. The same teacher graded the two groups against the scoring criteria. All the raw data collected from the test were analysed using Ms excel data pack- MS Office, 2021. The score of both groups gained in the post-test and the delayed post-test were then compared to identify the impact of CLIL approach adopting blended teaching to develop language skill and maturity in thoughts among the experimental group learners. To study if the change is detectable, the post-test was administered after two-month treatment period and delayed post-test was administered after the completion of the treatment period respectively. Additionally, to study the change in attitude towards language learning in CLIL adopting BT among the experimental group the questionnaire (table 4) was administered and analysed.

6.2. Procedure

The complete teaching period of the current study lasted for 3 months covered within one semester period. It included three sessions of an hour each, one for the subject content and two for the language. The experimental group was instructed by the teacher partly using live online class and partly offline class using 5 units content throughout the teaching phase. The teacher explained the concepts and the language skill strategically, along with providing multimedia exposure to the experimental group students during the teaching. The control group were taught language skill strategies using the course book material in the offline classroom meeting for 3 hours a week. Each time before teaching, the teacher reviewed the lesson, explained the strategies and conducted rigour sessions before the end of each unit lesson. Additionally, there were regular formative assessment with two major marked assessment conducted to evaluate the learning taking place for both groups.

7. Results

The quantitative validation is developed through the result evaluation of the pre-test and post-test and delayed-post test conducted for both the groups and their scores analysed using descriptive statistical method detailed below.

7.1. Pre-Test

Prior to carrying the study, it is significant to establish that the language proficiency of both the control group and the experimental group is similar for the uniformity of the sample selection. For the sample being of small size, William Sealy Gosset's paired Sample t-test is found suitable and valid. To determine if there is a significant difference between the means of two related groups, the paired sample t-test was run to compare

the experimental group's mean with the control group's mean. The test assumes that the two samples are independent, the data within each group are normally distributed and the variances of the two groups are equal (for a pooled t-test). The t-test calculates a t-statistic which is then compared to a critical value from the t-distribution, considering the degrees of freedom.

Statistical assessment of mean marks for each group was carried out by comparing the overall data. Table 1 captures the results of the control group (M = 23.50, SD = 0.59) and experimental group (M = 23.20, SD = 0.44). It is apparent that mean values of both the groups are close to each other.

Table 1: Pre- Test Score of Control Group and Experimental Group

Groups	n	Mean	Std Dev Mean	Std. Error Mean	P-Value
Control	25	23.50	0.59	0.12	0.11017
Experimental	25	23.20	0.44	0.09	

A Sample t – test was carried out with the following assumptions to verify if both the groups have similar skill set.

7.1.1. Null Hypothesis (H0)
The null hypothesis assumes that there is no significant difference in language skill standards between the two groups. It suggests that any observed difference in the data is due to random chance (H0: μ Control = μ Experimental). Implying that the experimental group intervention has no effect compared to the control group, the Null Hypothesis establishes that the mean of the control group is equal to the mean of the experimental group, where P value in this case will be > 0.05.

7.1.2. Outcome
The p-value for the two-sample t-test was observed to be 0.11017, which is > 0.05. Hence, it is concluded that there is no statistically significant reason to reject Null Hypothesis. The difference between the "control group "and the "experimental group" is minimal, concluding that the English language skills standards of both the groups is almost same.

8. Post Test
8.1. English Language Skills
Each group's students (N-25 per group) were tested for their English language skill acquisition after the treatment using 15 questions of the test components including 10 comprehension questions, 1 summarization, 1 short talk and 3 vocabularies. The mean scores of each group were statistically assessed. Comparing the overall data, the statistical assessment of mean marks for each group was carried out. Table 2 captures the results of the English language proficiency observed of the control group (M = 23.68, SD = 0.58) and experimental group for English language acquisition (M = 29.68, SD = 0.74).

Table 2: Post -Test Score of Both Group

Groups	Approach	n	Mean	Std Dev Mean	Std. Error Mean	P Value
Control	Conventional FFT	25	23.68	0.58	0.11	8.4E-22
Experimental	CLIL adopting BT	25	29.68	0.74	0.14	

Note: Conventional FFT- Face-face brick and mortar classes using form focused teaching approach.
CLIL Adopting BT- Content and language integrated learning approach adopting blended teaching.

To verify the difference in language skill acquisition between the two groups a sample t–test was carried out with the following assumptions.

8.1.1. Null Hypothesis (H0)

The null hypothesis assumes that there is no significant difference in the English language skills during the treatment period between the two groups. It suggests that any observed difference in the data is due to random chance (H0: μ Control = μ Experimental). Null hypothesis establishes that the mean of the control group is equal to the mean of the experimental group, implying that the experimental treatment or intervention has no effect compared to the control group. P value in this case will be > 0.05.

8.1.2. Alternative Hypothesis (H1)

The alternative hypothesis suggests that there is a significant difference between the two groups, meaning that the experimental treatment has had an effect on the outcome being measured (H0: μ Control ≠ μ Experimental). If the alternative hypothesis suggest that the mean of the control group is not equal to the mean of the experimental group, it advises that the treatment or intervention may have caused a difference. P value in this case will be < 0.05.

8.1.3. Outcome

The p-value for the two-sample t-test was observed to be 8.4E-22, which is < 0.05. Hence, it is concluded that there is no statistically significant reason to accept Null Hypothesis and Alternative Hypothesis is true. There is strong evidence indicating that the means of the two groups are significantly different, wherein the mean observed in case of CLIL adopting BT is higher than the conventional FFT approach, signalling substantial positive enrichment of the desired English language skill to the experimental group.

9. Delayed Post-Test

9.1. Writing and Critical Thinking Skill

Each group's students (25 per group) were tested for their critical thinking abilities in the writing skill assessment conducted after the treatment. The gist of this is inferred through 10 questions drafted within the objective range of the critical thinking in academic design of the subject content using language criterion, which aided in standardizing the questions. The critical thinking components include, case study questions, probing question, discursive questions, generating original ideas, reflecting on contemporary goals and creative idea question. Comparing the overall data, the statistical assessment of mean marks for each group was carried out. Table 3 captures the results of the critical thinking abilities developed through writing observed for the control group (M = 24.38, SD = 2.36) and the experimental group (M = 34.75, SD = 1.63).

Table 3: Delayed Post - Test Score (Creativity) of Both Groups

Groups	Approach	n	Mean	Std Dev Mean	Std. Error Mean	P-Value
Control	Traditional	25	24.38	2.36	0.47	8.43E-16
Experimental	Maker	25	34.75	1.63	0.32	

Note: *Conventional FFT- Face-face brick and mortar classes using form focused teaching approach.*
CLIL Adopting BT- Content and language integrated learning approach adopting blended teaching.

To verify that the difference in critical thinking skills abilities between the two groups a sample t – test was carried out with the following assumptions

9.1.1. Null Hypothesis (H0)

The null hypothesis assumes that there is no significant difference in critical thinking skills between the two groups. It suggests that any observed difference in the data is due to random chance (H0: μ Control = μ Experimental). This establishes that the mean of the control group is equal to the mean of the experimental group, implying that the experimental treatment or intervention has no effect compared to the control. P value in this case will be > 0.05.

9.1.2. Alternative Hypothesis (H1)

The alternative hypothesis suggests that there is a significant difference in the critical thinking abilities between the two groups, meaning that the treatment has had an effect on the outcome being measured (H0: μ Control ≠ μ Experimental). Alternative hypothesis suggest that the mean of the control group is not equal to the mean of the experimental group, advising that the treatment or intervention may have caused a difference. In this case, the P value will be < 0.05.

9.1.3. Outcome

The p-value for the two-sample t-test was observed to be 8.43E-16, which is < 0.05. Hence, it is concluded that there is no statistically significant reason to accept Null Hypothesis and alternative hypothesis is true. There is strong evidence indicating that the means of the two groups are significantly different, wherein the mean observed in case of CLIL approach adopting BT is higher than the conventional FFT approach, signalling significant positive enrichment of critical thinking skills while using CLIL adopting BT among the experimental group.

10. Attitude Survey Questionnaire

Table No. 4: Questionnaire survey conducted for the experimental group for comprehending their attitude towards teaching and learning while using CLIL approach adopting BT.

Sl. No.	Items	N	M	SD
1.	Teacher used video conferencing class and encouraged to speak about a topic being discussed in English language class.	25	4.16	0.55
2.	The teacher posted hyperlinked passage in the google classroom, a day prior to the lesson and provided ample time to comprehend the content concept before teaching.	25	3.32	0.75
3.	Because the teacher integrated concepts of the other discipline (subject) to teach language, it lent seriousness to the learning of language.	25	4.8	0.57
4.	The teacher planned activities woven around one specific concept which helped in easing the comprehension of the complex content even while focusing on language.	25	3.44	0.71
5.	Teacher provided exposure to various speaking skill activities in the process of language acquisition while discussing and developing the concept knowledge, helping in multi-disciplinary skill development in one unit of teaching and learning.	25	3.32	0.69
6.	Teacher gave assessment to test language skills to be submitted online, and provided opportunity to submit 3 drafts writing task or oral presentations (with feedback) before the submission of the final work for assessment.	25	3.24	0.52
7.	Teacher integrated concept and the language learning together which reduced the burden of doing home task and in turn developed interest towards learning of language and concept at the same time.	25	4.16	0.55
8.	Because the teacher used content integrated language learning (CLIL) in the blended teaching mode, it retained the traditional touch of classroom learning, blending evenly with the online medium of transacting knowledge delivery.	25	3.28	0.61
9.	The teacher gave freedom to maintain home task on google docs. Which made learners work easy and organised.	25	4	0.58
10.	Teacher gave access to wealth of information by sorting out topic relevant web links while developing reasoning skills using reading comprehension content. This made information access available instantly while learning and activated critical thinking.	25	3.28	0.54
11.	Teacher used text and video for making reading or listening appealing to the senses through the use of visual, aural and verbal cues available online.	25	3.32	0.63
12.	The teacher gave opportunity to look through other viewpoints about a specific topic before giving autonomy to present students view point which developed a sense of empathy and respect for various perspectives during learning.	25	4.2	0.58

13.	Teacher created a convenient environment for testing and assessment, reducing the fear of acquiring language and internalizing concepts of the subject discipline both at the same time.	25	3.4	0.71
14.	Teacher provided freedom to research online using quick search for resources which could save time and reduce stress of the learners while learning or creating for the activities.	25	4.04	0.35
15.	Teacher gave summative task embedded in web-based tools with proper guidance and support to develop a sense of responsibility among the learners towards learning.	25	3.4	0.71

11. Discussion

From the questionnaire it is deduced that the current research CLIL approach adopting blended teaching (BT) used for development of the four components (reading, speaking, listening and writing) of language skills along with critical thinking ability was agreed by the learners to be having the ability to induce insightfulness in learning of content and language at the same time. The strategy to use content integrated in language learning with partly online and partly offline made students feel participative and their learning relevant in the current context of 21st century learning. The hyperlinked resources provided in the google classroom before the day of commencement of teaching of the concept made reading in depth, also the worksheet accompanied with it helped to focus on contextual vocabulary, connotative and denotative meaning with the support of google dictionary and other searches. Another appealing strategy that was helpful to the learners was the attesting of images in the annexed worksheet about the abstract terms in the reading content; it facilitated visualization. Jean Piaget's theory of cognitive development associated to language acquisition premise was created through the CLIL approach integrating content with language learning. Additionally, the blended teaching gave access to technology which students provided them space and time to motivate learning. They were able to connect well with the complex learning of content because of the sensory element used like audio and video, images in phased manner when compared to the conventional learning environment.

During the treatment phase, in the second month, a post-test was conducted as a formative test in the physical classroom. After the post-test, the treatment continued to focus on the critical thinking development. The hyperlinked text of related topic of the subject concept being taught posted online accompanied with the worksheet to extract the technical vocabulary, connotative and denotative meaning of the words and phrases in the text to draw conclusions that is to be used in real-world context seamlessly induced criticality in the thinking of the learners. Because of easy access to other resource topic relevant links provided for further research about the topic, learners found the complex concept easy to grasp and language learning happening naturally without any waste of time. The teacher acted as a facilitator throughout the treatment. Finally, the delayed post-test was conducted prompting students to write a long critical essay guided by a situational prompt that is integrated in topic of the concept taught in the class. Students were asked to submit the essay as per the stated deadlines. The teacher provided feedback for the first draft of the essay, after reviewing and reworking on the first draft the student would submit the second draft; third draft was considered as the final essay draft. This assisted in research, review and analysis of the ideas developing the critical thinking abilities of the learners in their own pace. Learning here is scaffolded in phased manner. The essay is finally assessed against the set criterion of both concept understanding and language learning to measure the critical thinking outcome.

The few apps that retained learner attention towards language skill development and content knowledge were the kindle app for reading, google forms for worksheets, Padlet app for collaboration, Prezi/Canva for presentation and so on. Also, the use of google docs for taking notes helped them stay organized in their task throughout the phase of learning.

In comparison, the conventional FFT approach in brick-and-mortar classroom used the resource material from the prescribed English language course book of the chosen grade level. The language skill was taught using short talks, lecture, worksheets and listening activities. The formative assessments were testing the comprehension, speaking, listening and writing all focused only on testing the form and structure of language with some comprehension of content knowledge. The choice of content used for teaching was generic concepts or short stories.

Overall, the evaluation of the study shows that most of the learners felt that CLIL approach adopting BT to acquire language skills gave them exposure to interesting experiences with the convenience to find ample

resources online and comfort to access them instantly. There was variety in the approach that hooked the readers towards the activities. Most of them believe that it would be useful in teaching language skills while integrating concepts in the online context, comprehended through the attitude questionnaire evaluation administered and to the students after the research.

It is evident through this research results that CLIL approach adopting blended teaching could derive pedagogical outcome and language learning at the same time fitting into the Bruner's and Chomsky's understanding of theoretical framework of language proficiency. The development of student learning in the beginning seems slow but the maturity level gets strong and strengthens quickly with time. In language classrooms, when catching the attention of every individual student and retaining their interest in every activity is a challenge, it can be used to hold the attention and monitor through CLIL approach adopting blended teaching. This can further top up the quality of the plan by the collaboration of the subject expert and the language proficient faculty to plan the teaching meaningfully. The content concept to extract language learning while developing reading skills establishes an environment of critical thinking, encouraging problem solving and decision-making ability among the learners. Above all, it boosts the present generation learning style and interest, especially at high school level acting as a bridging gap for smooth transition to the University level of concept and language learning.

12. Conclusion

Owing to lack of motivation towards language acquisition due to mere form focused language teaching and learning in the conventional FFT approach; also, the lack of relevance to the demands of the current context of competency-based education, CLIL approach adopting blended teaching was used in the current study to understand its impact in language learning and teaching for EFL/ESL learners at high school. In comparison to the conventional FFT approach, CLIL approach adopting BT showed improved results. The quantitative data evaluated through the results of the post-test and delayed post-test show the language learning and critical thinking skill results of the experimental group acquired were detectably higher. The most delectable part of this approach is the integration idea. Furthermore, from the theoretical perspective, the new integrated mode could provide comprehensive insight into the frame work of strategies, methods and processes assisted in online computer web-based technology teaching and content integration for language development. The application of the new framework into the real teaching justifies its efficacy from a practical perspective for further exploration. However, it needs to be accepted that this study has several limitations. With continuously changing needs of 21st-century language learners, and rapidly evolving technology tools, the objective of this study needs further narrowing down to sharper means. The current research is meant only for English medium students of EFL learners, with limited samples. It, therefore, leaves certain gaps to ascertain the comprehensive impact when used for large groups through various other mediums. Further insight into the research of specific language skills, concept internalization enrichment and critical thinking abilities needs investigation. Also, the technical know-how of both the teacher and the students along with its availability or access can be a challenge that needs additional attention. The teaching material used for reading can further be improved by the collaboration of subject and language teachers during the planning. Overall, with more prudence, CLIL approach adopting BT to improve language skill along with critical thinking abilities can be optimized in the future studies, and a more satisfactory outcome for the EFL/ESL learners language skill teaching and outcome can be achieved.

Declarations

Availability of data and materials- All data generated or analysed during this study are included in this published article. The supplementary information files can be obtained from the corresponding author upon reasonable request to maintain participant privacy.

Competing interests: The authors declare that they have no competing interest.

Authors' contributions: Teaching, assessment and analysis of the data is done by the authors.

Disclaimer: This topic is not used for university Thesis requirement.

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