ESJ Social Sciences

# Enhancing Primary Schoolchildren's Autonomy and Interest towards Reading through Inquiry-based Activities and Digital Applications (A Case of Georgian Private School)

***Irina Chikovani, PhD Candidate***
***Prof. Dr. Ekaterine Pipia***
International Black Sea University, Georgia

Doi:10.19044/esj.2022.v18n12p172

Submitted: 07 March 2022
Accepted: 26 April 2022
Published: 30 April 2022



*Cite As:*
Chikovani I. & Pipia E. (2022). *Enhancing Primary Schoolchildren's Autonomy and Interest towards Reading through Inquiry-based Activities and Digital Applications (A Case of Georgian Private School).* European Scientific Journal, ESJ, 18 (12), 172. https://doi.org/10.19044/esj.2022.v18n12p172

## Abstract

Over the last century language teaching methods have undergone fundamental changes. A different set of approaches has appeared in response to the ineffectiveness of traditional teaching methods. As traditional approaches are not designed to pursue students' interests and do not encourage them to cooperate in self-directed learning, there is an urgent need to develop more effective teaching and learning approaches for 21st-century learners. Nowadays, teacher-centered education gives the way to more student-centered approaches, where the main goal of learning is to nourish interest in students and give them an opportunity to inquire and master learning in a more meaningful way. As technology-assisted education has become an indispensable and challenging part of student-centered education, it has become absolutely vital for teachers to enhance the integration of technology into their classrooms. Inquiry-based English language teaching through digital applications is among the most contemporary teaching approaches, which perfectly corresponds to the 21st-century demands while enhancing autonomy and fostering students' reading interest. Considering the urgency of integrating contemporary teaching methods in English as a Foreign Language (EFL) class, the objective of the presented study has been shaped to outline the impact of inquiry-based English language teaching through digital applications on primary learners' autonomy and interest development in one

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

of the Georgian private schools. A quantitative method was applied to the present study in order to compare pre and post-experimental questionnaire results and measure primary schoolchildren's autonomy level, curiosity, and interest in reading through digital applications before and after the experiment. The learning processes of the experimental and control groups were compared. The obtained data has been analyzed using SPSS to compare the survey results. The quantitative study has revealed that the 21st-century generation positively responds to contemporary teaching methods and inquiry-based teaching through digital applications has proved to be effective. Based on the research findings, eBooks and digital applications are reasonable resources to be utilized in EFL reading lessons as learning only with the help of traditional books appears to be boring for students. Based on the study results, it is obvious that working on electronic texts through inquiry-based approaches has assisted students in completely changing their negative attitudes toward reading and increased engagement and autonomy. Consequently, because of the decreasing interest in reading through traditional books, there is a need of promoting more student-centered teaching practices and increase technology integration in the teaching and learning process.

**Keywords:** Inquiry-based learning, digital reading applications, student-centeredness, learner autonomy, e-reading

## Introduction

In the era of development and technological improvements there is an urgent necessity for innovative approaches at schools. Unfortunately, schools with traditional approaches work in a way that discourages students to become autonomous learners and provoke a sense of inquiry. Students lose motivation as existing teaching methods do not serve the demands of students with 21st-century skills. Schools and teachers need to diversify and change methods of teaching and provide students with appropriate real-life education. Effective, high-quality teaching is totally different and it requires a different set of methods, resources, activities, and approaches as students should learn the language without losing motivation and inspiration.

The language teaching area is in constant development and is filled with innovations (Alameddine & Ahwal, 2016). In the last twenty years, there is a great interest in using the inquiry approach to implement engaging lessons for students (Murdoch, 2006). There are a variety of methods that aim to increase students' motivation and autonomy. One of the methods is inquiry-based learning, a student-centered approach, which is based on holistic and authentic learning (Kuhlthau, Maniotes, & Caspari, 2007).

The inquiry-based approach is among the most contemporary teaching approaches, which perfectly corresponds to the 21st-century demands while

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

fostering interest in students and creating an interactive learning environment where discovery, reflection and creative learning are highly supported (Alameddine & Ahwal, 2016).

The implementation of inquiry teaching benefits second and foreign language instruction in all aspects. It serves the purpose of increasing the opportunity for participation and maintaining students' attention as it is an instrument to initiate and sustain the instructional interaction (Lee, 2014).

Inquiry-based learning emphasizes active participation and the learner's responsibility for discovering knowledge that is new to the learner (de Jong & van Joolingen, 1998). Inquiry teaching aims to provide students with knowledge via investigation, rather than receiving knowledge directly from teachers (Lazonder & Harmsen, 2016). In other words, inquiry-based teaching puts the stress on teaching through discoveries. Students are not only passive recipients of the language, they are involved in the teaching and learning process which, in turn, enhances students' autonomy and interest in reading. Each interesting experience or activity determines students' deep interest in the studying process and lays the foundation for further inspired actions (International Baccalaureate Organization, 2020).

While studying with inquiry-based approaches, students construct new knowledge and meaningful learning experience with great willingness and the most important factor is that for effective inquiry-based teaching and learning students should be deeply interested in the content. Genesee (1994) claims that understanding the content is an effective motivation for language learners, especially when the content is interesting or has some value to them. According to Hulstijn (2005), through the process of feeling curious about a topic, asking questions, and seeking answers, language learners can clarify their understanding of the content and develop their language skills simultaneously. Specifically, learners gain implicit knowledge by processing target-language input without consciously giving attention to acquiring the forms and structures of the language.

In inquiry-based learning (IBL), students are active during the learning process, they initiate different meaningful questions, become independent learners, are responsible for the acquisition of their knowledge, and inquire about and get knowledge throughout their lives (Rejeki, 2017). IBL provides valuable experience for EFL learners as it allows students to make creativity, reflect, discover, and encourage cognitive skills. Aside from this, inquiry-based learning ensures that learners are knowledge inquirers and not only the receivers of information (ibid.). Such valuable experience facilitates future self-regulated learning and success.

IBL encourages children to be more active and autonomous during the knowledge acquisition process and concentrates on students' needs and interests. "Teachers do not teach everything directly or explicitly. Instead,

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

learners are expected and encouraged to discover the knowledge, to generate underlined rules based on a series of examples and counterexamples" (Lee, 2014, p.1237). Students are interested and deeply involved in the process of investigation because the topics are according to their needs and interests (Murdoch & Wilson, 2006). While learning with inquiry approaches students are willing to experiment, explore, ask questions, think, reflect, and be aware of their style and pace (Abrams, Southerland & Silva, 2008)

In addition to this, in the last years, technology has remarkably advanced and brought significant changes in English language teaching. According to Mohammed (2015), technology integration in EFL (English as a Foreign Language) is commonly accepted and has undoubtedly improved the teaching and learning process. In the 21st century, digital tools have become inevitable in English Language Learning and have given rise to more innovative language teaching methods. Tabari and Tabari (2014) claim that technology gives us an unlimited amount of resources and makes the learning process more motivational and stimulating for learners.

E-reading provides unlimited opportunities and the availability of materials online. Students have access to eBooks any time they need. E-reading not only develops students' reading skills but also fosters learners' interest and motivation in reading in general.

It is notable that digital learning offers many opportunities to language learners. Implementation of technology in EFL classes increases students' motivation and interest. Students prefer working and reading in digital applications rather than in textbooks (Cutter, 2015). Hoven (1999) highlights that technology offers more engaging resources and undoubtedly provides learners with tremendous opportunities to become more autonomous learners. Modern devices give students a sense of freedom and encouragement so with the help of technology students become more motivated, active, and involved in the knowledge acquisition process (Ilter, 2009).

Reading through digital applications seems to be appealing to today's generation, they find eBooks modern, unique, and more attractive as they are eager to try out various digital options while reading and become more and more interested in the reading process. Students' interest can also be increased when they are granted an opportunity to read an eBook that is relevant to their level and interests (Larson, 2010). eBooks enable language learners to become involved in reading, to increase motivation, interest, and a desire for further reading (Yoon, 2013). Reading eBooks undoubtedly increases enthusiasm for reading and significantly improves students' reading achievement, comprehension, vocabulary, and attitude toward reading all of which are vital in order for students to become successful and enthusiastic readers.

Correspondingly, the following research questions have been formulated: To what extent will students' autonomy increase as a result of

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

participating in inquiry-based learning activities through digital applications? To what extent will students' attitudes and interests toward reading through digital applications increase as a result of participating in inquiry-based learning activities through digital applications? The paper follows different sections. Firstly, it provides an introduction including the importance of the research and a relevant review of the literature. After the introduction, the article discusses the methods and analysis of obtained findings of the research.

## Methods

This study aimed at exploring the role and importance of inquiry-based English teaching through digital applications on EFL primary schoolchildren's autonomy and interest enhancement in Georgia. The quantitative approach was applied to the research to analyze questionnaire results and identify students' level of autonomy and general attitude towards reading lessons before and after the treatment. The quantitative approach was used as (a) It is precise; (b) it produces reliable and replicable data; and (c) statistically significant results are generalizable (Creswell, 2013; Cohen, Manion, & Morrison, 2007). The researchers collected statistical data from experimental and control groups and conducted a statistical analysis of the data using SPSS.

The questionnaire, which was applied for pre-and post-experimental assessment of students' level of autonomy and attitudes towards reading, was developed by the researchers based on literature analysis within the framework of this study.

A questionnaire was implemented with 3 multiple-choice items and 12 Likert Scale questions for data collection. The items were designed to evaluate students' general attitudes towards reading and the level of autonomy before and after the experiment. A five-point Likert scale was used, rating from 1 (completely disagree) to 5 (completely agree). The pre-and post-experimental questionnaires were the same, in order to assess the change (if any) in learner autonomy and attitudes towards reading.

In order to ensure content validity, first, the questionnaire was given to three independent judges to assess the quality of questions and the ability to cover the topic under study. A pilot study was established in one of the private schools in Tbilisi to test the reliability and validity of the survey questionnaire. There were 15 participants from the 5th grade in the pilot study.

Initial data was assessed in SPSS Version 16.0 and the reliability coefficient for each statement was higher than 0.8 out of 1, and the significance is $p=0,000<0.05$ which means that there is a strong correlation between the two results, the result is statistically significant and the questionnaire is reliable (See table 1).

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

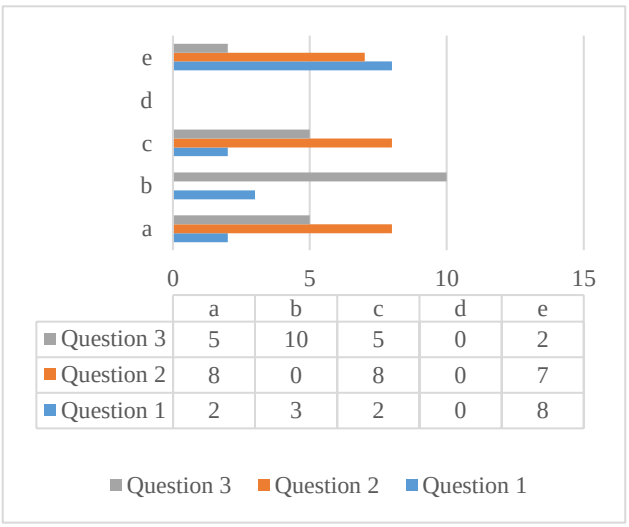
**Table 1.** Cronbach's Alpha analysis

| Items | Cronbach's Alpha analysis (Pearson Correlation) | Significance (P) |
|---|---|---|
| 1. Learning only with the help of books is sometimes boring. | 0.853 | 0.000 |
| 2. I regularly use different online platforms (e.g., Raz-Kids) to improve reading. | 0.866 | 0.000 |
| 3. Educational platforms and modern technologies should be integrated in learning process. | 0.938 | 0.000 |
| 4. Educational websites (e.g., Raz-Kids, Epic) offer plenty of opportunities for reading improvement. | 1.000 | 0.000 |
| 5. Online platforms are ideal places to share views and opinions. | 1.000 | 0.000 |
| 6. Online platforms (e.g., Raz-Kids, Epic) and modern technologies can make reading easier. | 0.938 | 0.000 |
| 7. In addition to the given homework by the teacher, I use additional books to read in my spare time out of class. | 0.952 | 0.000 |
| 8. I can choose the reading material appropriate for my reading level by myself. | 0.826 | 0.000 |
| 9. I can decide what topics to read without the support of my teacher. | 0.877 | 0.000 |
| 10.I can identify my strengths and weaknesses in English reading and can overcome my difficulties. | 0.980 | 0.000 |
| 11.I can evaluate my own reading progress. | 0.932 | 0.000 |
| 12. I can set goals for the improvement of my reading skills. | 0.986 | 0.000 |

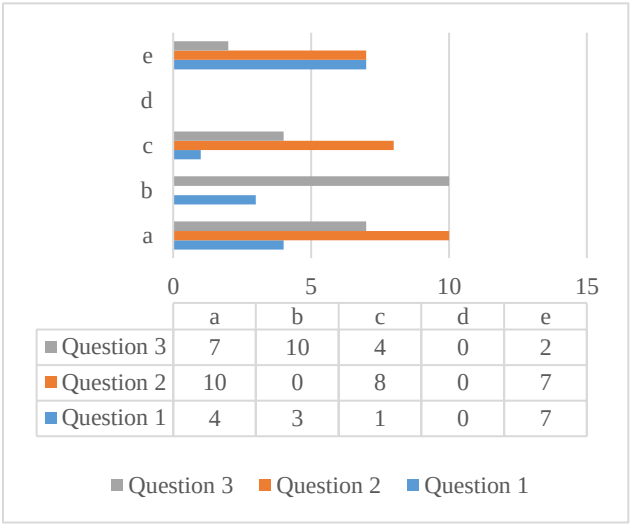
The pre and post-questionnaires included 3 multiple-choice items. To assess the reliability of the questions, the multiple-choice items were piloted with the same pilot study participants. The pilot study revealed that there was a balance between the first and the second result, so, it means that the multiple-choice questions are reliable (see figures 1-2).

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

**Figures 1-2.** Pilot study findings
Results obtained the first and the second time




| | a | b | c | d | e |
|---|---|---|---|---|---|
| Question 3 | 5 | 10 | 5 | 0 | 2 |
| Question 2 | 8 | 0 | 8 | 0 | 7 |
| Question 1 | 2 | 3 | 2 | 0 | 8 |




| | a | b | c | d | e |
|---|---|---|---|---|---|
| Question 3 | 7 | 10 | 4 | 0 | 2 |
| Question 2 | 10 | 0 | 8 | 0 | 7 |
| Question 1 | 4 | 3 | 1 | 0 | 7 |

The study consisted of two groups from the 5th grade. Learning processes of experimental (grade 5 [n = 18]) and control group (grade 5 [n = 20]) were compared. The selection of a private school in Georgia for the experiment was based on a convenience sample. It was relevant for the study as the school was easily reachable for the researchers. The research is quasi-experimental as the researchers used the groups which were formed by the school administration. However, two classes were chosen at random to be control and the experimental ones. The groups were selected at random among volunteers for the duration of the experiment.

**The procedure of the experimental study**

Pre- and Post-experimental questionnaires were held in order to evaluate the level of students' autonomy, and attitudes towards reading lessons and identify students' interest and curiosity in reading through digital applications before and after the experiment. The control and the experimental groups were taught the same material but with different approaches.

English language lessons in X private school were held five times per week. During 16 weeks, out of five hours, 1 hour each week was dedicated to the experiment. The English lessons were based on the textbook *Macmillan English* in both the experimental and control groups.

The teaching and learning conditions were the same for the experimental and control groups. The amount of time spent on in-class and out-of-class activities was the same for both the control and experimental groups. The control and the experimental groups were taught the same material but with different approaches. The experimental group was taught

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

with inquiry-based teaching methods using digital applications. Students were given special rubrics for choosing different books in a digital library (Raz-kids) in order to become more autonomous learners. Based on the information given in the rubric, students were trying to find the relevant book on Raz-kids. The teacher had a role of a facilitator during the process. After a less-restricted inquiry-based activity, students were reading and listened to books during 40 minutes lessons. They were given different individual projects for each book (Monolingual English-English dictionary, mini book report, comics book, reflection journal, etc.), and each project was assessed according to rubrics or checklists. In order to promote critical thinking, after reading each book, Padlet wall was constantly used, where students had an extended research-based question uploaded by the teacher (Free inquiry-based activity). Students were working on the question and were trying to find appropriate information on the internet. After completing the inquiry process, students were making presentations on the inquiry question and were uploaded on Padlet. Feedback was given not only from the teacher but from the students as well. However, the control group was not given any special treatment. They were given books by the teacher. Learners in the control group were taught with traditional approaches. They were reading books in the class. Students were translating all the sentences. They had in-class discussions and were given quizzes as homework.

To ensure the ethical issues, the researchers used the following procedures:

An application form for ethical approval was obtained from the target school before the research was conducted. The school's name and other recognizable remarks were not used. All the participants in the experiment were informed about the purpose of the study.

The students' (and their parents') oral consent to involve them in the study was obtained. The students and their parents were informed that the study was being conducted for research purposes only and would not harm the students in any way. All the participants were informed that their participation was voluntary and that they could withdraw themselves at any stage of the research.

Participants' names were not mentioned. Their responses were anonymous and their participation was closed to publicity. The information provided was strictly used within the scope of this research only and was not disclosed to any other third party.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

## Results

### Results of the survey questionnaires (Pre and Post Questionnaires)

The data collected from the questionnaire were analyzed via SPSS 16.0 version. The pre-and post-questionnaires were given to the control and the experimental groups to measure the level of students' autonomy and attitudes towards reading lessons as well as interests in reading through digital applications. The results of pre- & post-experimental questionnaires are given in the following tables (see tables 2, 3, 4, 5)

**Table 2.** The results of the questionnaire in the experimental group in the pre-experimental stage

| | 1 | 2 | 3 | 4 | 5 | Mean | Mode | Median | SD |
|---|---|---|---|---|---|---|---|---|---|
| 1. Learning only with the help of books is sometimes boring. | 0 | 5 | 0 | 6 | 7 | 3.83 | 5.00 | 4.00 | 1.25 |
| 2. I regularly use different online platforms (e.g., Raz-Kids) to improve reading. | 3 | 8 | 0 | 3 | 4 | 2.83 | 2.00 | 2.00 | 1.50 |
| 3. Educational platforms and modern technologies should be integrated in learning process. | 0 | 0 | 8 | 3 | 7 | 3.94 | 3.00 | 4.00 | 0.94 |
| 4. Educational websites (e.g., Raz-Kids, Epic) offer plenty of opportunities for reading improvement. | 0 | 1 | 9 | 4 | 4 | 3.61 | 3.00 | 3.00 | 0.92 |
| 5. Online platforms are ideal places to share views and opinions. | 0 | 0 | 5 | 5 | 8 | 4.17 | 5.00 | 4.00 | 0.86 |
| 6. Online platforms (e.g., Raz-Kids, Epic) and modern technologies can make reading easier. | 0 | 0 | 10 | 3 | 5 | 3.72 | 3.00 | 3.00 | 0.895 |
| 7. In addition to the given homework by the teacher I use additional books to read in my spare time out of class. | 0 | 10 | 0 | 4 | 4 | 3.11 | 2.00 | 2.00 | 1.32 |
| 8. I can choose the reading material appropriate for my reading level by myself. | 3 | 5 | 8 | 2 | 0 | 2.50 | 3.00 | 3.00 | 0.92 |
| 9. I can decide what topics to read without the support of my teacher. | 5 | 1 | 6 | 4 | 2 | 2.83 | 3.00 | 3.00 | 1.38 |
| 10. I can identify my strengths and weaknesses in English reading and can overcome my difficulties. | 3 | 3 | 9 | 2 | 1 | 2.72 | 3.00 | 3.00 | 1.07 |
| 11. I can evaluate my own reading progress. | 2 | 5 | 8 | 2 | 1 | 2.72 | 3.00 | 3.00 | 1.02 |
| 12.. I can set goals for the improvement of my reading skills. | 2 | 6 | 8 | 1 | 1 | 2.61 | 3.00 | 3.00 | 0.98 |

Only three items (1,3,5) were answered by the students positively. The majority of the items (9 out of 12) did not receive positive results.

The high standard deviations (all above 0.5) on all statements reveal that the views of group members differ widely, which means that the group is quite heterogeneous.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

For items 1, 3, 5, Means and Medians are close to each other but Mode is quite different. For items 2, 4, 6 ,7 Medians and Modes are the same but the Mean is different. This means that the results, in this case, do not very well represent the real situation. However, for all the other items we can speak about normal distribution, this means that the results very well represent the real situation as all the Means, Medians and Modes are very close to each other.

**Table 3.** The results of the questionnaire in the experimental group in the post-experimental stage

| | 1 | 2 | 3 | 4 | 5 | Mean | Mode | Median | SD |
|---|---|---|---|---|---|---|---|---|---|
| 1. Learning only with the help of books is sometimes boring. | 0 | 0 | 0 | 3 | 15 | 4.83 | 5.00 | 5.00 | 0.38 |
| 2. I regularly use different online platforms (e.g., Raz-Kids) to improve reading. | 0 | 0 | 0 | 4 | 14 | 4.78 | 5.00 | 5.00 | 0.43 |
| 3. Educational platforms and modern technologies should be integrated in learning process. | 0 | 0 | 0 | 4 | 14 | 4.78 | 5.00 | 5.00 | 0.43 |
| 4. Educational websites (e.g., Raz-Kids, Epic) offer plenty of opportunities for reading improvement. | 0 | 0 | 0 | 6 | 12 | 4.67 | 5.00 | 5.00 | 0.49 |
| 5. Online platforms are ideal places to share views and opinions. | 0 | 0 | 0 | 4 | 14 | 4.78 | 5.00 | 5.00 | 0.43 |
| 6. Online platforms (e.g., Raz-Kids, Epic) and modern technologies can make reading easier. | 0 | 0 | 0 | 2 | 16 | 4.89 | 5.00 | 5.00 | 0.32 |
| 7. In addition to the given homework by the teacher I use additional books to read in my spare time out of class. | 1 | 2 | 0 | 7 | 8 | 4.06 | 5.00 | 4.00 | 1.21 |
| 8. I can choose the reading material appropriate for my reading level by myself. | 0 | 0 | 1 | 7 | 10 | 4.50 | 5.00 | 5.00 | 0.62 |
| 9. I can decide what topics to read without the support of my teacher. | 0 | 0 | 0 | 5 | 13 | 4.72 | 5.00 | 5.00 | 0.46 |
| 10. I can identify my strengths and weaknesses in English reading and can overcome my difficulties. | 0 | 0 | 3 | 5 | 10 | 4.39 | 5.00 | 5.00 | 0.78 |
| 11. I can evaluate my own reading progress. | 0 | 0 | 2 | 7 | 9 | 4.39 | 5.00 | 4.50 | 0.70 |
| 12.. I can set goals for the improvement of my reading skills. | 0 | 0 | 2 | 6 | 10 | 4.44 | 5.00 | 5.00 | 0.70 |

All the items were answered positively by the students in the experimental group, unlike the pre-questionnaire answers.

The low standard deviations (all below 0.5 except items 7, 8, 10, 11,12) on all issues reveal that the students' views are not so different from each other after the experiment and are more or less homogeneous.

Mean, Mode and Median are close to each other for most of the items. For items 7 and 11 Means and Medians are quite close to each other but the

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Mode result is different; however, for item 10 Mode and Median are the same but the Mean is different. This means that the results, in this case, do not very well represent the real situation. However, for all the other items we can speak about normal distribution, this means that the results very well represent the real situation as all the Means, Medians and Modes are very close to each other.

**Table 4.** The results of the questionnaire in the control group in the pre-experimental stage

| | 1 | 2 | 3 | 4 | 5 | Mean | Mode | Median | SD |
|---|---|---|---|---|---|---|---|---|---|
| 1. Learning only with the help of books is sometimes boring. | 2 | 4 | 0 | 7 | 7 | 3.65 | 4.00 | 4.00 | 1.42 |
| 2. I regularly use different online platforms (e.g., Raz-Kids) to improve reading. | 9 | 8 | 0 | 2 | 1 | 1.90 | 1.00 | 2.00 | 1.17 |
| 3. Educational platforms and modern technologies should be integrated in learning process. | 1 | 1 | 7 | 5 | 6 | 3.70 | 3.00 | 4.00 | 1.13 |
| 4. Educational websites (e.g., Raz-Kids, Epic) offer plenty of opportunities for reading improvement. | 0 | 0 | 10 | 5 | 5 | 3.75 | 3.00 | 3.50 | 0.85 |
| 5. Online platforms are ideal places to share views and opinions. | 0 | 0 | 5 | 3 | 12 | 4.35 | 5.00 | 5.00 | 0.88 |
| 6. Online platforms (e.g., Raz-Kids, Epic) and modern technologies can make reading easier. | 0 | 3 | 13 | 2 | 2 | 3.15 | 3.00 | 3.00 | 0.81 |
| 7. In addition to the given homework by the teacher I use additional books to read in my spare time out of class. | 3 | 10 | 0 | 4 | 3 | 2.70 | 2.00 | 2.00 | 1.38 |
| 8. I can choose the reading material appropriate for my reading level by myself. | 4 | 4 | 10 | 2 | 0 | 2.50 | 3.00 | 3.00 | 0.95 |
| 9. I can decide what topics to read without the support of my teacher. | 1 | 1 | 12 | 4 | 2 | 3.25 | 3.00 | 3.00 | 0.91 |
| 10. I can identify my strengths and weaknesses in English reading and can overcome my difficulties. | 2 | 1 | 15 | 1 | 1 | 2.90 | 3.00 | 3.00 | 0.85 |
| 11. I can evaluate my own reading progress. | 2 | 2 | 14 | 1 | 1 | 2.85 | 3.00 | 3.00 | 0.88 |
| 12.. I can set goals for the improvement of my reading skills. | 2 | 3 | 12 | 3 | 0 | 2.80 | 3.00 | 3.00 | 0.83 |

Only four items (1, 3, 4, 5) were answered by the students more or less positively, however, the majority of the items (8 out of 12) did not receive positive results, as it was in the experimental group.

The high standard deviations (all above 0.5) on all statements reveal that the views of group members differ too much, which means that the group is quite heterogeneous.

For items 2, 3, 4 Mean and Median are quite close to each other, but the Mode is different, however, for items 5 and 7 Median and Mode are the same, but Mean is different. So, for these items, we can't say that we have a normal distribution. This means that the results, in this case, do not very well

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

represent the real situation. However, for all the other items we can speak about normal distribution, this means that the results very well represent the real situation as all the Means, Medians and Modes are very close to each other.

**Table 5.** The results of the questionnaire in the control group in the post-experimental stage

| | 1 | 2 | 3 | 4 | 5 | Mean | Mode | Median | SD |
|---|---|---|---|---|---|---|---|---|---|
| 1. Learning only with the help of books is sometimes boring. | 2 | 2 | 0 | 7 | 9 | 3.95 | 5.00 | 4.00 | 1.36 |
| 2. I regularly use different online platforms (e.g., Raz-Kids) to improve reading. | 4 | 15 | 0 | 1 | 0 | 1.90 | 2.00 | 2.00 | 0.64 |
| 3. Educational platforms and modern technologies should be integrated in learning process. | 0 | 2 | 8 | 5 | 5 | 3.65 | 3.00 | 3.50 | 0.99 |
| 4. Educational websites (e.g., Raz-Kids, Epic) offer plenty of opportunities for reading improvement. | 0 | 0 | 8 | 7 | 5 | 3.85 | 3.00 | 4.00 | 0.81 |
| 5. Online platforms are ideal places to share views and opinions. | 0 | 0 | 2 | 4 | 14 | 4.60 | 5.00 | 5.00 | 0.68 |
| 6. Online platforms (e.g., Raz-Kids, Epic) and modern technologies can make reading easier. | 0 | 3 | 12 | 2 | 3 | 3.25 | 3.00 | 3.00 | 0.91 |
| 7. In addition to the given homework by the teacher I use additional books to read in my spare time out of class. | 2 | 10 | 0 | 4 | 4 | 2.90 | 2.00 | 2.00 | 1.41 |
| 8. I can choose the reading material appropriate for my reading level by myself. | 3 | 3 | 12 | 2 | 0 | 2.65 | 3.00 | 3.00 | 0.88 |
| 9. I can decide what topics to read without the support of my teacher. | 0 | 1 | 11 | 4 | 4 | 3.55 | 3.00 | 3.00 | 0.89 |
| 10. I can identify my strengths and weaknesses in English reading and can overcome my difficulties. | 4 | 3 | 10 | 1 | 2 | 2.70 | 3.00 | 3.00 | 1.17 |
| 11. I can evaluate my own reading progress. | 1 | 2 | 14 | 2 | 1 | 3.00 | 3.00 | 3.00 | 0.79 |
| 12.. I can set goals for the improvement of my reading skills. | 1 | 1 | 15 | 2 | 1 | 3.05 | 3.00 | 3.00 | 0.76 |

Only four items (1, 3, 4, 5) were answered by the students positively, however, the majority of the items (8 out of 12) did not receive positive results. The high standard deviations (all above 0.5) on all statements reveal that the views of group members differ too much, which means that the group is quite heterogeneous.

For items 1, 3, 4 Means and Medians are close to each other but Modes are different, for items 7 and 9 Modes and Medians are the same but Means are different. So, for these items, we can't say that we have a normal

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

distribution. This means that the results, in this case, do not very well represent the real situation. However, for all the other items we can speak about normal distribution, this means that the results very well represent the real situation as all the Means, Medians and Modes are very close to each other.

**Table 6.** Questionnaire- T-test analysis

| Items | Pre-questionnaire (Grade 5 Control group) | Post-questionnaire (Grade 5 Control group) | Pre-questionnaire (Grade 5 Experimental group) | Post-questionnaire (Grade 5 Experimental group) | T-test analysis (P) |
|---|---|---|---|---|---|
| 1. | 3.65 | 3.95 | 3.83 | 4.83 | 0.002 |
| 2. | 1.90 | 1.90 | 2.83 | 4.78 | 0.065 |
| 3. | 3.70 | 3.65 | 3.94 | 4.78 | 0.001 |
| 4. | 3.75 | 3.85 | 3.61 | 4.67 | 0.003 |
| 5. | 4.35 | 4.60 | 4.17 | 4.78 | 0.003 |
| 6. | 3.15 | 3.25 | 3.72 | 4.89 | 0.003 |
| 7. | 2.70 | 2.90 | 3.11 | 4.06 | 0.004 |
| 8. | 2.50 | 2.65 | 2.50 | 4.50 | 0.033 |
| 9. | 3.25 | 3.55 | 2.83 | 4.72 | 0.017 |
| 10. | 2.90 | 2.70 | 2.72 | 4.39 | 0.017 |
| 11. | 2.85 | 3.00 | 2.72 | 4.39 | 0.017 |
| 12. | 2.80 | 3.05 | 2.61 | 4.44 | 0.022 |

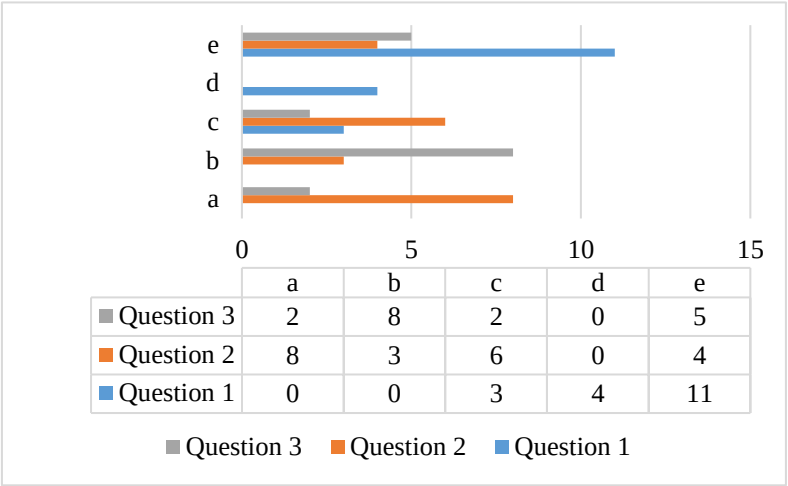
The researchers applied paired samples T-test (mean result for each statement was entered) to show whether the difference between the control (Pre-post questionnaire) and the experimental (pre-post questionnaire) group results are statistically significant. The significance of the differences is less than <0.05 for all the items which mean that the results are statistically significant.

**Results of multiple-choice questions (Pre and Post questionnaires)**

The second part of the survey was about students' attitudes toward reading. There were three multiple-choice questions in the questionnaire. In the first question, the researchers aimed to determine the time students spend reading every day, in the second question the researchers tried to identify the reason for reading, and in the third multiple-choice question students specified the reasons for their negative attitudes towards reading.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

**Figure 3.** The results of the multiple-choice questions in the experimental group in the pre-experimental stage

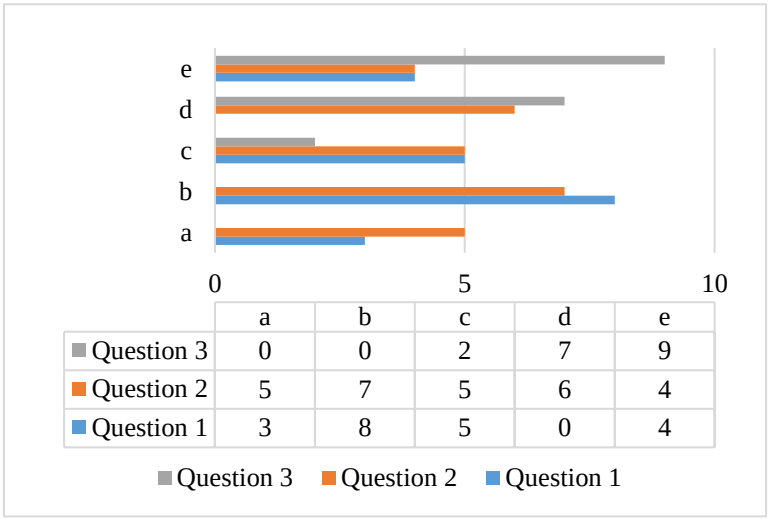



| | a | b | c | d | e |
|---|---|---|---|---|---|
| Question 3 | 2 | 8 | 2 | 0 | 5 |
| Question 2 | 8 | 3 | 6 | 0 | 4 |
| Question 1 | 0 | 0 | 3 | 4 | 11 |

The results of the pre-questionnaire in grade 5 experimental group displayed that most of the students (11 out of 18) do not always read every day, 4 students read less than one hour, however, only 3 students read about one hour regularly. The results also show that the majority of students (8 out of 18) read for doing the homework and for improving their knowledge (6 out of 18), only 3 students out of 18 read for pleasure and four students for spending free time. None of the students read to improve their English language skills. The results obtained from the third question illustrate quite undesirable results, the majority of students (8 out of 18) find reading a boring activity. 5 students do not read because reading is difficult for them. Out of 18 students, 2 students do not like reading and the other 2 do not read because they are too busy with their phones.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

**Figure 4.** The results of the multiple-choice questions in the experimental group in the post-experimental stage



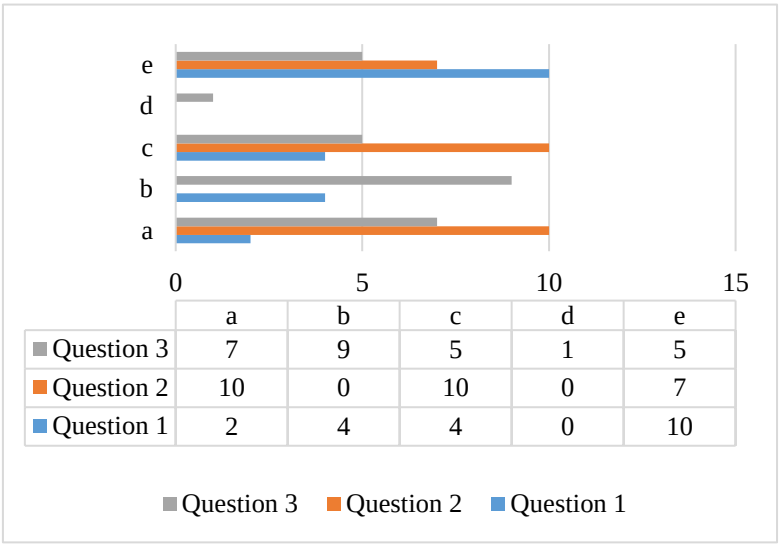

| | a | b | c | d | e |
|---|---|---|---|---|---|
| Question 3 | 0 | 0 | 2 | 7 | 9 |
| Question 2 | 5 | 7 | 5 | 6 | 4 |
| Question 1 | 3 | 8 | 5 | 0 | 4 |

The experimental group's post-questionnaire results revealed that after having the experience of utilizing digital applications in reading lessons students have much more positive attitudes toward reading. According to the obtained results students (8 students out of 18) read about two hours every day, 3 students read about 3 hours, 5 students one hour and 4 students do not read every day at all. After the treatment students do not only read for doing homework, but they read for pleasure as well (7 out of 18). Out of 18 students, 5 students read to improve their knowledge while 6 students read to improve their English skills. Only 4 students read to spend their free time.

It is quite clear that intervention positively influenced students' attitudes about reading. Comparing the questionnaire results indicated from the pre and post-questionnaires the method was quite successful.

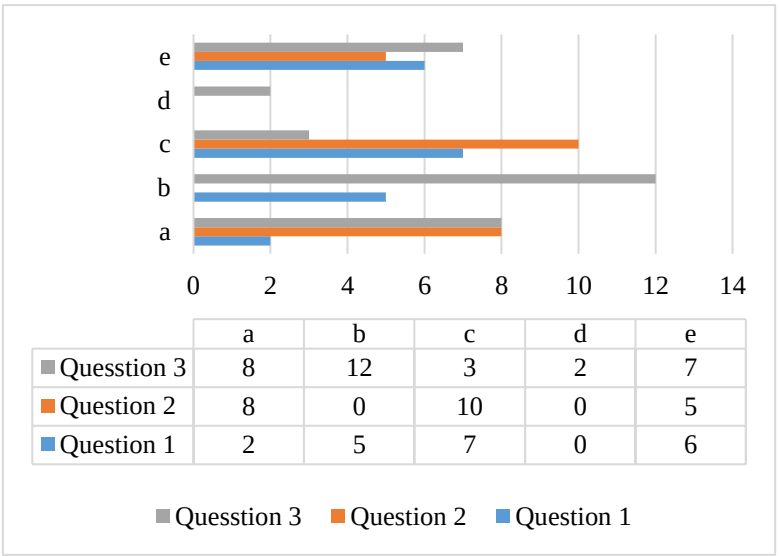
 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

**Figure 5.** The results of the multiple-choice questions in the control group in the pre-experimental stage




| | a | b | c | d | e |
|---|---|---|---|---|---|
| Question 3 | 7 | 9 | 5 | 1 | 5 |
| Question 2 | 10 | 0 | 10 | 0 | 7 |
| Question 1 | 2 | 4 | 4 | 0 | 10 |

**Figure 6.** The results of the multiple-choice questions in the control group in the post-experimental stage




| | a | b | c | d | e |
|---|---|---|---|---|---|
| Quesstion 3 | 8 | 12 | 3 | 2 | 7 |
| Question 2 | 8 | 0 | 10 | 0 | 5 |
| Question 1 | 2 | 5 | 7 | 0 | 6 |

There were no significant changes in control group students' responses in the pre and postquestionnaire. Pre and post-survey results revealed that the majority of students do not pay attention to reading and do not read every day. Half of the students read for doing their homework and another half for improving their knowledge. Some of the students read to spend their free time. Most of the students do not like reading and find it a boring activity. No

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

significant changes were noticed in the post questionnaire in the control group, students' attitudes toward reading have not changed.

Results obtained from the pre and post-questionnaires reveal that students are quite reluctant to read every day, they mostly read for doing homework and for improving their knowledge. The same picture is noticeable in the post questionnaire results. As for the third question, students either find reading boring or they just don't like it. Some students find reading difficult and some do not feel the need at all.

**Discussion**

Based on the research it could be seen that inquiry-based reading activities through digital applications have a positive influence on students' autonomy and interest enhancement. The obtained results are in alignment with the studies conducted by Sotiriou, Lazoudis, and Bogner (2020) and Johnson and Cuevas (2016). The study, which was conducted by Bayram, Oskay, Erdem, Ozgur, and Sen (2013) to find out the effects of the inquiry-based learning approach on students' motivation and interest depicted similar findings to the current study. Some researchers like Maxwell, Lambeth, and Cox (2015) and Abdi (2014) clearly highlighted the positive effects of the inquiry approach on the academic achievement, motivation, and interest enhancement of students. In addition to this, Lee (2014), Levy and Wilensky (2011), Shamsudin, Abdullah, and Yaamat (2013) revealed the positive effects of inquiry learning strategy on developing students' autonomy and attitude toward learning. The findings of previous studies have highlighted the essential role of IBL in language teaching and learning. Based on the current and the previous studies it has been revealed that IBL highly increases students' interest and promotes a meaningful language acquisition process. According to the study findings, inquiry-based teaching, which ensures students' active participation in the learning process, changes students from being passive learners to be more independent inquirers. Reflecting on this point, the data gained through the quantitative research in Georgia depicts the necessity and importance of contemporary teaching approaches and the integration of educational platforms and modern technologies in the learning process. Despite the fact that the methods of teaching are constantly changing and developing, there is still much more to be done in order to encourage a student-centered environment and improve students' general attitudes towards reading lessons. While talking about students' interest in reading and the level of autonomy, it can be clearly seen that students are practically taught with the help of traditional approaches, which seem to be less effective and interesting for students. Considering the fact that students lose interest in reading and are not autonomous learners, there is the significance of promoting student-

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

centered methods for 21st-century learners in order to increase the level of interest and autonomy in digital natives.

The researchers clearly understand the limitations of the study. One of the main limitations of the study is the duration of the experiment. The results would be more valid and reliable if the duration of the experiment was a longer period of time. In addition to this, the experiment was a small-scale study, limited to two groups only (one control and one experimental group). So the participants of the experiment may not give a full picture of the situation and it is hard to generalize findings to all language learners. The study focused on only one private school, for this reason, the findings obtained from this research are not easy to generalize to the whole country finally, the number of research participants was restricted and the given number of students may not give a full picture of the problem. For future studies, it would be better to expand the scope of the research in order to gain more valid and reliable findings. Increasing the number of students and number of schools will bring more accurate results.

## Conclusion

The research has revealed that the 21st-century generation positively responds to contemporary teaching methods. Inquiry-based teaching through digital applications has proved to be effective. Based on the research findings, eBooks and digital applications are reasonable resources to integrate into EFL reading lessons as the majority of students (14 out of 18) consider that educational platforms and modern technologies should be integrated into the learning process. Since today's learners are growing up in an increasingly technological world and are exposed to multiple forms of technology, it should certainly be utilized in the field of education to support the reading process.

It is obvious that working on electronic texts through inquiry-based approaches has assisted students in completely changing their negative attitudes towards reading and increasing motivation and engagement. The majority of students (15 out of 18) clearly state that learning only with the help of traditional books is sometimes boring. It has also helped reluctant and struggling readers to increase their interest in reading as the reading process has become easier for them. Out of 18 students, 16 students point out that online platforms and modern technologies make reading easier. According to the findings, students have become more autonomous learners after the treatment. 13 students (out of 18) have stated that they can decide what topics to read without the support of the teacher after the participation in inquiry-based activities. Consequently, because of the decreasing interest in reading through traditional books, there is a need of promoting more student-centered teaching practices and increase technology integration in the teaching and learning process.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

The research has found that giving students the opportunity to be more autonomous learners, choose the stories according to their interests, use the built-in dictionaries, narrative reading features, etc., positively influences them, makes them more enthusiastic readers and gives them the motivation for further reading. Based on the research findings, most of the students (12 out of 18) believe that educational websites offer plenty of opportunities for reading improvement.

Research findings have revealed that it is essential to change the traditional methods of teaching with more student-centered approaches. Although the methods of teaching are becoming more and more innovative and student-centered nowadays there is still a need to experience more technology integration and implement inquiry-based activities in Georgian private schools.

**Conflicts of Interests**

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

**References:**

1. Abdi, A. (2014). The effects of inquiry-based learning method on students‘ academic achievement in sciences course. *Universal Journal of Educational Research, 2* (1), 37-41. DOI: 10.13189/ujer.2014.020104
2. Abrams, E., Southerland, S., & Silva, P. (Eds.). (2007). *Inquiry in the Classroom: Realities and Opportunities*. North Carolina: IAP-Information Age Publishing.
3. Alameddine, M.M., Ahwal, H.W. (2016). Inquiry-based teaching in literature classrooms. *Procedia -Social and Behavioral Sciences*, 232, 332-337.
4. 4. Bayram, Z., Oskay, O.O., Erdem, E., Ozgur, S.D., & Sen, S. (2013). Effect of inquiry-based learning method on students' motivation. *Procedia-Social and Behavioral Sciences, 106*, 988-996. DOI: 10.1016/j.sbspro.2013.12.112.
5. Cohen, L., Manion, L., & Morrison, K. (2007). *Research Methods in Education*. London, Rutledge.
6. Creswell, J. W. (2013). *Research Design (International Student Edition): Qualitative, Quantitative, and Mixed Methods Approaches*. London: SAGE Publications.
7. Cutter, M. (2015). *Using Technology with English Language Learners in the Classroom.* Master's Thesis, New York: St. John Fisher College.
8. De Jong, T., & Van Joolingen, W. R. (1998). Scientific discovery learning with computer simulations of conceptual domains. *Review of*

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

*Educational Research*, 68(2), 179-201. DOI: https://doi.org/10.3102/00346543068002179

9. Genesee, F. (1994). *Integrating Language and Content: Lessons from Immersion.* UC Berkeley: Center for Research on Education, Diversity and Excellence.
10. Hoven, D. (1999). A model for listening and viewing comprehension in multimedia environments. *Language Learning & Technology,* 3(1), 73-90.
11. Hulstijn, J. H. (2005). Theoretical and empirical issues in the study of implicit and explicit second-language learning: Introduction. *Studies in Second Language Acquisition*, 27(2), 129-140. DOI: https://doi.org/10.1017/S0272263105050084
12. Ilter, B. G. (2009). Effect of technology on motivation in EFL classrooms. *Turkish Online Journal of Distance Education*, 10(4), 136-158.
13. International Baccalaureate Organization. (2020). *Personal inquiries in the PYP*. United Kingdom.
14. Johnson, S. A., & Cuevas, J. (2016). The effects of inquiry project-based learning on student reading motivation and student perceptions of inquiry learning processes. *Georgia Educational Researcher*, 13(1), 51-85. DOI: 10.20429/ger.2016.130102.
15. Kuhlthau, C. C., Maniote, L. K., & Caspari, A. K. (2007). *Guided Inquiry: Learning in the 21st Century*. Westport: Libraries Unlimited.
16. Larson, L. C. (2010). Digital readers: The next chapter in e-book reading and response. *The Reading Teacher,* 64(1), 15–22. DOI:10.1598/RT.64.1.2
17. Lazonder, A. W., & Harmsen, R. (2016). Meta-analysis of inquiry-based learning: Effects of guidance. *Review of Educational Research*, 86(3), 681-718. DOI: https://doi.org/10.3102/0034654315627366
18. Lee, H. Y. (2014). Inquiry-based teaching in second and foreign language pedagogy. *Journal of Language Teaching and Research*, 5(6), 1236-1244. DOI:10.4304/jltr.5.6.1236-1244.
19. Levy, S. T., & Wilensky, U. (2011). Mining students' inquiry actions for understanding of complex systems. *Computers & Education, 56*(3), 556-573. DOI:1016/j.compedu.2010.09.015
20. Maxwell, D. O., Lambeth, D. T., & Cox, J. T. (2015). Effects of using inquiry-based learning on science achievement for fifth-grade students. *Asia-Pacific Forum on Science Learning and Teaching, 16* (1), 1-31.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

21. Mohammed, M. I. (2015). The perceptions of students and teachers about the benefits of and barriers to technology aided EFL. *Journal of Literature, Languages and Linguistics,* 13, 85-99.
22. Murdoch, K. (2006). Inquiry learning: journeys through the thinking processes. *Teacher Learning Network,* 13(2), 32–34.
23. Rejeki, S. (2017). Inquiry-based language learning (IBLL): Theoretical and practical views in English classroom. *English Franca*, 1(02), 135-148.
24. Shamsudin, N. M., Abdullah, N., & Yaamat, N. (2013). Strategies of teaching science using an inquiry based science education (IBSE) by novice Chemistry teachers. *Procedia - Social and Behavioral Sciences, 90,* 583-592. DOI: 10.1016/j.sbspro.2013.07.129
25. Sotiriou, S. A., Lazoudis, A., & Bogner, F. X. (2020). Inquiry-based learning and E-learning: how to serve high and low achievers. *Smart Learning Environments.* 7(29), 24-27.
26. Tabari, I. G., & Tabari, A. G. (2014). Application of computer and technology in EFL syllabus design. *Journal of Language Teaching and Research,* 5(2), 376-381. DOI:10.4304/jltr.5.2.376-381
27. Yoon, T. (2013). Beyond the traditional reading class: The application of an e-Book in EFL English classroom. *International Journal of Research Studies in Language Learning*, 2(1), 17-26. DOI:10.5861/ijrsll.2012.93