

IMPROVING FORMATIVE ASSESSMENT IN LANGUAGE CLASSROOMS USING *GRADECAM GO!*

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Abstract

This study aimed to determine EFL (English as a Foreign Language) teachers' perceptions and experience regarding their use of *GradeCam Go!* to grade multiple choice tests. The results of the study indicated that the participants overwhelmingly valued *GradeCam Go!* due to its features such as grading printed forms for multiple-choice questions as well as the immediate feedback provided to both teachers and their students. The results of the study also indicate that *GradeCam Go!* might be a very useful tool for teachers working in schools with large classrooms where technological resources are rare. *GradeCam Go!* seems to pave the way for an easy and efficient tool for teachers to use regular assessment through frequent quizzes, give immediate feedback, and monitor student progress.

Keywords: formative assessment; grading; test

1. Introduction

Assessment plays an important role in teaching contexts and in teachers and students' lives since it is vital to inform students of their progress in addition to determining their strengths and weaknesses and providing feedback (Richards, 2015). Benefiting from assessment practices, known as formative assessment or assessment for learning, teachers can modify their teaching practices based on the results (Johnston, 2003; Lee & Norbaizura, 2016). In his review of the definitions of assessment for learning, William (2011) underscores the importance of providing feedback to both students and teachers and adjusting teaching activities accordingly. Therefore, the main purpose of formative assessment is to provide feedback to the learner as well as to the teacher to use it in order to extend and facilitate learning and teaching (Powell, 2010; Gordon & Rajagopalan, 2016; Hamp-Lyons, 2016; Siyanova-Chanturia & Webb, 2016).

As a lecturer of English as a Foreign Language (EFL), I have held several seminars with English language teachers working in lower secondary schools and talked about the importance of formative assessment in the language classroom. The teachers in the seminars acknowledge the benefits of the information obtained through formative assessment as providing feedback and adjusting their teaching strategies accordingly. However, many

teachers raise the issue of conducting formative assessment in large classes where the number of students exceeds thirty-five and of the limited time to cover both the curriculum and the assessment.

Technology can be one way to help the teachers willing to conduct formative assessment but facing work with a large number of students. There are several applications and Web 2.0 tools that help teachers create online quizzes and/or tests which are graded automatically such as *QuizStar* (Kılıçkaya, 2010) and *Socrative* (Sprague, 2016). Especially in low-resource contexts, it might not be possible to benefit from these resources, and teachers might have to rely on paper and pencil tests and grade them manually. However, *GradeCam Go!* is a Web 2.0 tool that allows teachers to grade multiple-choice questions using the cameras of several portable devices such as smart mobile phones and tablets on printed forms, rather than special optic forms (Kılıçkaya, 2016). This study aimed to investigate ten EFL teachers' perceptions on their use of *GradeCam Go!* to grade multiple choice tests which they created to assess their students' progress, to give feedback and act accordingly over the six weeks of the spring semester at lower-secondary schools in Turkey.

2. Literature review

Large classes make it difficult, if not impossible, to provide timely grading and feedback since large classes lead many teachers to deal with “an overwhelming amount of grading and feedback” (Brady, 2012, p. 291). One of the uses of technology in the classrooms, as proposed by several authors, is for evaluation and assessment purposes (Brown, 2013; Skorzynska, Del Saz Milagros, & Carrio-Pastor, 2016). Brown (2016, p. 151) lists some of the benefits of computer-assisted testing such as “data storage, remote scoring, and immediate feedback”. Thus, technology can help teachers make assessment more efficient, enabling them to use cheaper markers since computers and software provide the opportunity to mark the recognition types of tests such as multiple-choice, true/false, and gap-filling items. Computers or specific software can easily compile, store and analyze the results of the exam to provide feedback to the teachers, who will use them to inform the students on their current progress (Walker & White, 2013). It is possible then to conduct regular assessment to benefit from formative assessment since regular assessment through frequent quizzes as well as informal observation gives feedback on strengths and weaknesses (Chappuis & Chappuis, 2010; Fulcher & Owen, 2016). To the best knowledge of the author, there is not any study conducted on the use of grade markers, and it would be useful to discuss some of the studies conducted on practices of formative assessment in the classroom as well as online testing.

Mumm, Karm and Remmik (2016) conducted semi-structured interviews with 20 student teachers and found that teachers used summative assessment as the main way of assessing student teachers, which occurs only at the end of the semester in the form of examination. Johnson (2006) investigated the effects of optional online quizzes on 112 college students' academic achievement. The participants were not limited in terms of the number of the quizzes to be taken, or how many times they could take the quizzes. The results of the study indicated that optional online quizzes were linked to the increased academic achievement; however, it was not clear whether the quiz caused the increased academic achievement. In a similar study, Pennebaker, Grosling and Ferrell (2013) studied the effect of frequent online testing and immediate feedback on college students' academic performance in an introductory psychology course through short-internet based quizzes given before every class. The experimental group took the online quiz before every class, while the control group at another university was only assessed with four class-long exams. The results indicated that the participants in the experimental group obtained higher grades compared to the control group. The results also suggested that frequent quizzes could be used in large lecture classes to improve students' academic performance.

Fageeh (2015) investigated EFL students' and the faculty members' attitudes and perceptions on the use of online assessment through survey method at King Khalid University. The results of the study revealed positive attitudes towards the use of online assessment and further indicated that web-based assessment and practice were valued due to the opportunity to provide immediate feedback and automated scores to the students.

The studies reviewed here indicate that online assessment, as well as the other various tools, helps teachers create e-learning materials including online quizzes (Krajka, 2003; Beaven et al., 2010) and enables them to provide immediate feedback to determine strengths and weaknesses in large classes and to act accordingly. The current paper aims to determine EFL (English as a Foreign Language) teachers' perceptions as well as experience regarding their use of *GradeCam Go!*, an online and mobile application to grade multiple choice tests.

3. Grading Marker: *GradeCam Go!*

GradeCam Go! provides an easy and unique way of grading multiple-choice tests easily. The main benefit of using this application is that the responses can be provided on a regular printed form similar to a special optic form, and the printed forms can be graded using a camera of a mobile device such as a smartphone. An account must be created by registration on the website available at <https://gradecam.com>. The free account allows 60-day trial use of

the website, which will change into the basic use. The basic use allows creating an answer key for up to 10 questions, while the trial use allows up to 1000 questions. Upon registration, teachers can immediately create different classes, a list of students for each class, and the optic forms. Using the 'Assignment' links, a new assignment (a quiz or an exam) can be created, and the number of the questions can be determined (Figure 1).

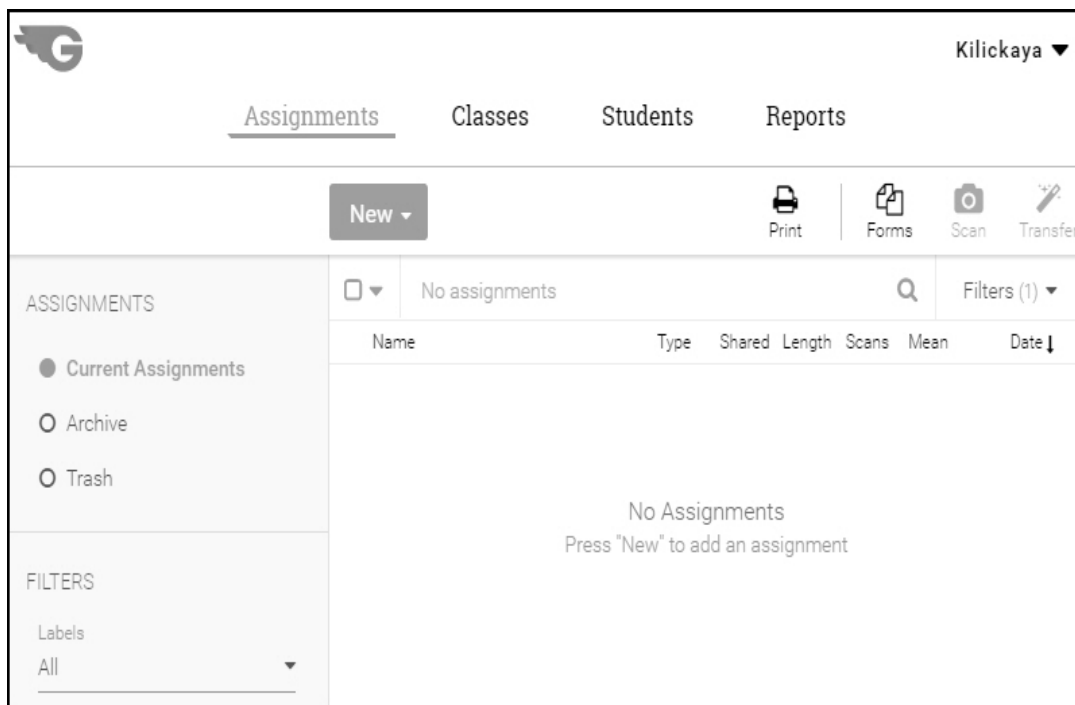


Figure 1. The main screen of *GradeCam Go!*

Then, the answer key will be generated for the previously-created assignment, which is to be used for grading the students' responses provided on the optic form printed (Figure 2). *GradeCam Go!* scans the forms when you focus your camera on them and, in seconds, *GradeCam Go!* presents the results of the exam, providing detailed information on each student's performance as well as item analysis (detailed information on each answer choice, percentages and the number of responses) and item summary (detailed information on the percentage of students' correct and incorrect answers provided to each question). The results are also stored on the website for later analysis or use. Thus, *GradeCam Go!* not only serves as an efficient marker of multiple-choice exam papers but also a statistical analysis tool, which relieves teachers of the burden of analyzing the results by hand.

The image shows a digital form interface for GradeCam Go!. It features a main area with 10 multiple-choice questions, each with five options labeled A through E. To the right of the questions is a 'GradeCam ID:' field with three empty boxes. Below the questions is a 'Form Identifier - Do not mark' section containing a grid of 20 circles, some of which are filled with black or white patterns. The entire form is enclosed in a black border.

Figure 2. The optic form created by GradeCam Go!

4. Methodology

This study aimed to determine EFL teachers' perceptions as well as experience regarding their use of *GradeCam Go!* to grade multiple choice tests. The study adopted a mixed-method approach involving a survey and a face-to-face interview with the participants. To this end, the following research questions were devised:

1. What is the EFL teachers' experience while using *GradeCam Go!*, an application to grade multiple choice tests?
2. What are the advantages /disadvantages of using *GradeCam Go!* in the classroom?
3. Which skills were assessed while using *GradeCam Go!*?
4. What are the limitations/challenges faced?
5. What do the EFL teachers suggest regarding the use of *GradeCam Go!* in the classroom?

The data collection instrument included an anonymous survey (Table 1), which was completed by ten participants following the use of *GradeCam Go!* over the 6 weeks of the spring semester at lower-secondary schools in Turkey. The survey was created by the lecturer and included a five-point Likert scale used to allow the participants to express how much they agreed or disagreed with a particular statement. The survey statements were checked by an expert in the field for clarity of the statements as well as the appropriateness of the content. The pilot study could not be undertaken as the items included statements requiring familiarity with the application. Moreover, a face-to-face interview was conducted with all the participants to gain further insights regarding their perceptions.

4.1. Participants

The participants included ten EFL teachers working at lower-secondary schools in Burdur. They were all graduates of English language teaching departments in Turkey. 4 of the participants were male, while 6 were female. The participants were aged between 28-45 and their experience of teaching English varied from 5 to 15, with the average of 10.5 years. The participants' workload of teaching ranged from 20 to 30 hours each week, with an average of 23.5 hours.

4.2. Procedure

GradeCam Go! was introduced to the participants by the researcher after a seminar held on language assessment. The participants were provided with hands-on experience regarding the use of the tool. They were first shown how to create an account to use the tool and practiced creating assignments and optic forms for the assignments created. Since all the participants had smartphones, they were shown how to download the software for the mobile devices working on *Android*. Moreover, the participants practiced grading the multiple-choice questions that they created and each participant answered each other's exams, checking the exam results and getting detailed information on each item on their exams. The training lasted for about two hours and ended with a question-and-answer session. After the training, the participants agreed to use the tool in their classrooms for six weeks and to share the results with the researcher. Both the participants and the researcher shared their contact information for future help and for data collection purposes. The participants were later contacted for a brief survey and a face-to-face semi-structured interview regarding the participants' perceptions towards the use of software, challenges, and other issues as raised by the participants.

4.3. Data collection

After the six weeks during which the participants used *GradeCam Go!* in their classrooms, all the participants were asked to complete the brief survey published on *Google Docs* (Table 1). The survey included five statements on the use of the tool as well as the possible benefits. As a further step, face-to-face semi-structured interviews were conducted with all the participants. The questions were prepared before the interviews, which included four core questions:

1. What was your experience regarding the use of *GradeCam Go!*? Was it easy/difficult to use? Why?

2. What areas of language use did you assess? (Grammar, Vocabulary, Reading, etc.)
3. In your view, what are the benefits of using *GradeCam Go!* in your classroom? (Grading papers easily, giving immediate feedback etc.)
4. Are there any suggestions or comments that you would like to add?

The interviews were conducted in Turkish, and the scripts were translated into English by the researcher, which was checked by a translator by applying a translation-retranslation method. The interviews were conducted with individual interviews with all the participants in the study. The interviews were audio-recorded using a digital recorder with the consent of the participants; however, as three participants did not agree to be recorded, the researchers tried to take notes in detail of the responses. The average number of words transcribed was 655 words. The interviews were conducted in the school where the participants work, and the duration of interviews varied from 10 to 24 minutes, with an average of 14 minutes.

4.4. Data analysis

The responses obtained through the survey were subject to descriptive statistics using *IBM SPSS Statistics 24*. The data collected throughout the interviews were analyzed using inductive content analysis, which followed the processes as suggested by Creswell (2007). The interviews were word-processed, and transcripts were checked for units of meaning. Then, the responses were analyzed through open coding and the codes determined were noted down. Finally, the codes obtained were clustered and ranked in order to identify the emerging themes and codes, which were checked for consistency and credibility by another expert in the field of research methods. The themes and the codes, as well as the examples of responses that emerged from the interviews, have been provided in Table 2.

5. Results

The statements on the online survey were more related to the basic features of the application and the participants' views. Therefore, the survey provided basic data about the participants' perceptions and experience, which were later analyzed in detail in face-to-face semi-structured interviews.

The participants' responses to the online survey showed that they highly valued the use of *GradeCam Go!* in their classroom. Table 1 shows that the participants indicated it was easy to use *GradeCam Go!* (20% agree; 80% strongly agree) and that *GradeCam Go!* helped them grade the papers easily (10% agree; 90% strongly agree).

Table 1. The participants' views on using GradeCam Go! in the classroom

Survey Item	Strongly disagree	Disagree	Neither/Nor agree	Agree	Strongly agree
It is easy to use <i>GradeCam Go!</i>	0.00	0.00	0.00	20.00	80.00
<i>GradeCam Go!</i> helps me grade the papers easily.	0.00	0.00	0.00	10.00	90.00
<i>GradeCam Go!</i> provides detailed information on students' performances.	0.00	0.00	0.00	30.00	70.00
<i>GradeCam Go!</i> helps me give immediate feedback to my students.	0.00	0.00	0.00	10.00	90.00
Item analysis and summary are easy to do with <i>GradeCam Go!</i>	0.00	0.00	10.00	20.00	80.00

One of the features of *GradeCam Go!* is that it provides detailed information based on students' responses to the multiple-choice questions. Therefore, it seems to be quite natural that all of the participants agreed that *GradeCam Go!* helped them obtain detailed information about each student's performance and give immediate feedback. Another important finding regarding item analysis and summary is that almost all the participants found it easy to do item analysis and summary through *GradeCam Go!*, which provides the percentage as well as the number of responses on each answer choice and shows the percentage of students that have correct and incorrect answers. To sum up, these results underscore the fact that *GradeCam Go!* was highly valued by all the participants since it allowed them to benefit from easy grading, access to the exam results, and item analysis on the results. The themes and the codes, as well as the examples of responses that emerged from the interviews, have been provided in Table 2.

Use of the application. Under this theme, two codes have emerged: simple menu and user-friendly. When the participants were inquired about their use of the application, almost all of the participants (n=9) expressed that the application was user-friendly and easy to use. As the participants were teachers of English, they had no problems in referring to the support desk of the website provided in English while trying to get answers to their questions. One of the participants expressed this as follows:

The application was easy to use since each menu option was self-explanatory. During the training I learned the basic settings and to me it was like using Microsoft Word (Interviewee 8, Male).

Major benefits. Under this theme, several codes have appeared: easy scoring, cost-effective, detailed item analysis, prompt feedback, and allowing more frequent assessment.

Table 2. Emerging themes and codes

Themes	Codes	Example responses
<i>Application use</i>	simple menu	<i>The application has a simple menu, and I can find the settings easily.</i>
	user-friendly	<i>The application is very easy to use. You can learn the features quickly without spending much time.</i>
<i>Major benefits</i>	easy scoring	<i>I graded more than 100 papers quickly, and the results were in my hand in less than seconds.</i>
	cost-effective	<i>Expensive devices are needed to assess the papers, but using this application I can do the same thing almost free.</i>
	detailed item analysis	<i>The application provides me with the detailed information on my students' performance such as the number of correct and incorrect answers.</i>
	prompt feedback	<i>I can provide immediate feedback to my students after the exam.</i>
	frequent assessment	<i>It is almost impossible to give frequent exams, but using this application, I can now use more quizzes in the class.</i>
<i>Limitations</i>	number of questions	<i>The application only allows 10 questions for each test in the free version.</i>
	one type of questions	<i>Only multiple-choice questions are possible. There are no other types of questions to assess.</i>
	internet connection	<i>I have to be connected to the internet while using the application. It would be great to have an offline version.</i>
<i>Skills assessed</i>	grammar & vocabulary	<i>I used the software to grade my students' grammar and vocabulary knowledge. Multiple-choice questions are more suitable to assess grammar and vocabulary.</i>
	reading	<i>Multiple-choice questions worked very well to grade my students' reading comprehension.</i>
<i>Practical suggestions</i>	Reinforcement	<i>The application can be used to assess the students' performance on previously-learned subjects to assess the weaknesses and strengths. In this way, the teacher can do extra activities based on the results.</i>
	Quizzes as review games	<i>I think that at the end of each week, short quizzes including 3 or five multiple-choice quizzes can be given to students. They can work in groups and answer the questions together. This can also be done as a game.</i>

The three examples below indicated the participants' views on the major benefits of using the application:

I could easily grade the papers through the forms I created. I just showed the paper to the camera of my mobile device and in seconds *GradeCam Go!* stored the results together with detailed item analysis and summary, which was great (Interviewee 7, Female).

After the exam was over, I graded the students' papers during the break easily. The next class I shared the results with the students, pointing out their strengths and weaknesses, which was very motivating for my students (Interviewee 4, Male).

Calculating each student's correct and incorrect answers is really difficult if you do it through hand calculation; however, *GradeCam Go!* does it easily, enhancing the results with figures (Interviewee 3, Female).

Limitations. This theme had three codes: number of questions, one type of questions, and internet connection. Both the quantitative and qualitative findings of the study provided positive experiences regarding the use of *GradeCam Go!* in the language classroom. However, several issues were raised by the participants. Most participants (n=8) expressed that the possible number of multiple-choice questions is limited to ten items in the free version of the software, while at the same time admitting the fact that this number was actually sufficient to conduct regular review quizzes in the classroom. Moreover, all the participants expressed that another limitation was the type of questions. Four of the participants shared some problems with the Internet connection at their schools and expressed that they, in a few cases, failed to provide immediate feedback to their students regarding their performance due to the lack of connection.

In the following two examples, the participants shared their views on the limitations:

The application allows only ten questions in the free version. Moreover, it is not possible to ask different types of questions, only multiple choice questions (Interviewee 2, Female).

Although it was possible to create optic forms only for 10 questions, it was sufficient for me to assess my students. Since I aimed to assess my students through review questions, I did not include more than this number (Interviewee 4, Male).

Skills assessed. When being asked the question "What areas of language use did you assess? (Grammar, Vocabulary, Reading, etc.)" while using the application, a great majority of the participants (n=8) stated that they used the application to conduct assessment of grammar and vocabulary as multiple-choice questions were suitable for young learners as they did not have to produce the language. However, two participants expressed that they also benefited from the application in assessing reading comprehension based on the texts of the coursebook units. The following examples indicate the participants' main views on this issue:

I conducted assessments on grammar and vocabulary using *GradeCam Go!*. There are several reasons for this. First, I believe that it is easier to assess grammar and vocabulary through

multiple-choice questions. Second, since my students are preparing for a multiple-choice based examination, they are more eager to answer the questions (Interviewee 2, Female).

Practical suggestions. When the participants were asked about their suggestions regarding the use of *GradeCam Go!*, two codes emerged: Reinforcement of previous topics (formative assessment) and quizzes as review games in groups. 8 participants suggested using the application to give short quizzes to review the previously learned items, to determine the strengths and weaknesses of the students, and to act accordingly, e.g. reviewing the weak points and doing extra work. In the following example, one of the participants provides two suggestions regarding this:

As a teacher, I spent a great amount of time in assessment-related procedures, and most of the time I cannot give regular quizzes or assessments to my students to check their progress as especially scoring takes a lot of time. I teach 26 hours a week and I have more than 200 students. I believe that *GradeCam Go!* is very beneficial in large classes to review the previous topics or in game-like activities in groups (Interviewee 9, Female).

6. Discussion and implications

Teachers can determine the strengths and weaknesses of their students through traditional and alternative assessment methods. However, especially in large classes, this cannot be feasible and may urge them to try several options such as using online websites to create quizzes so that students can check their progress through rapid and detailed feedback. Using these resources may not be possible in all contexts, especially low-resource ones, and teachers might have to use paper and pencil tests, requiring scoring to be done manually.

In this study, the primary objective was to determine the EFL teachers' perceptions on their use of *GradeCam Go!*. The results indicated that the participants highly valued the application, as it was user-friendly, had a simple menu and provided detailed tutorials. The participants also had positive attitudes towards using the software as, in addition to other benefits, *GradeCam Go!* allowed grading the exam papers without the need for a professional marker, which is often too expensive to be available, especially in a state school.

Regarding the major benefits of the application, several factors were voiced by the participants such as more frequent assessment and prompt feedback to learners. As indicated by previous research on providing immediate feedback (Jonson, 2006; Chappuis & Chappuis, 2010; Pennebaker, Grosling & Ferrell, 2013; Fulcher & Owen, 2016), learners can benefit more from feedback on strengths and weakness, and in this perspective, the application was found to be highly efficient. Most assessment is in the form of summative assessment (Mumm, Karm & Remmik, 2016). However, as formative assessment is believed to be providing more detailed feedback on the learners' progress when compared with the summative approach,

GradeCamGo!, based on the participants' views and experience in the classroom, seems to help teachers conduct formative assessment to determine students' weaknesses and strengths by automated scores, which was in accord with Fageeh's study (2015).

Regarding the limitations and the skills assessed, the participants expressed the view that the number of the questions was limited to ten items in the free version and added that only multiple-choice questions were allowed to be graded with the application. Therefore, the application can be used to assess receptive skills through multiple-choice questions rather than productive ones. Therefore, the participants in the study conducted assessment of grammar, vocabulary and reading comprehension.

This study focused on 10 English language teachers' perception and practice of using *GradeCam Go!* in the classroom. While it is acknowledged that the small number of participants limits the study's findings as it prevents them from being generalizable to larger English teacher populations, the instructional procedure and experience of using this application as an aid to the formative assessment in the classroom does have the following practical implications considering the participants' suggestions:

1. *GradeCam Go!* can prove to be useful in terms of doing regular assessment through multiple-choice questions, especially in situations in which teachers have to teach large classes.
2. Learners need to know their progress, strengths, and weaknesses. In addition, teachers also need to "determine the effectiveness of their teaching and the materials they are using" (Richards, 2015, p. 666). *GradeCam Go!* can be used to review and reinforce the previously-learned/discussed topics as well as concepts for 'diagnostic' purposes (Brown & Abeywickrama, 2010) and to encourage learners to get prepared for the coming classes (Kılıçkaya, 2017). Therefore, it can be used to provide rapid and detailed feedback to both teachers and learners without dealing with manual analysis, which is at the same time cost-effective.
3. Rather than an official or formal assessment, quizzes can be given to students in game-like group-work activities to make assessment attractive and enjoyable for learners, and scoring can be easily done by teachers, or in some cases, by students.
4. Moreover, the technological tools that teachers can benefit from while assessing their learners such as *GradeCam Go!* can be infused into teacher education programs in courses such as *Technology and Language Learning*, and *Computer Assisted Language Learning* (Rakıcıoğlu-Söylemez & Akayoğlu, 2015; Kessler & Hubbard, 2017; Akayoğlu, 2017).

7. Conclusion

This study aimed to determine EFL teachers' perceptions on their use of *GradeCam Go!* to grade multiple choice tests. The results of the study indicated that the participants overwhelmingly valued *GradeCam Go!* due to its features such as grading printed forms for multiple-choice questions as well as the immediate feedback provided to both teachers and their students. The results of the study also indicate that *GradeCam Go!* might prove to be a useful tool for teachers working in schools with large classrooms where technological resources are rare. It is known that professional markers on the market may cost too much for schools to afford them, not to mention the need to have special optic forms required for different needs. Therefore, *GradeCam Go!* seems to pave the way for an easy and efficient tool for teachers to do regular assessment through frequent quizzes and give immediate feedback and monitor student progress.

The current study is small in scale and only reflects the practice of ten EFL teachers that used the tool to grade multiple-choice questions on grammar and vocabulary. Moreover, the study was aimed at investigating the participants' perception on the use of the tool. Therefore, further studies could also examine the effects of using this tool on the possible changes in students' performances. Specific aspects of using this tool such as monitoring students' progress and giving immediate feedback can also be taken into consideration in further research.

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