

Use of Google Forms in Teaching and Assessing English Phonology

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Abstract

Incorporating technology into learning, teaching and assessment is not a choice anymore; it is a necessity, especially if it is meticulously aligned to classroom objectives and pedagogical visions. Technology does not only mean using computers, interactive smart boards, and other sophisticated hardware. Technology also means using the right tools that allow students to create, connect, research, collaborate, contextualize and build skills. Most studies on assessment have mainly focused on in-class written and oral tests, and only few have seriously considered combining technology and academic online formative assessment at university level. This paper aims at utilizing Google Forms as a powerful online technology tool in teaching phonology and assessing students' competence. Moreover, this paper aims at testing students' desirability to participate in online tests/quizzes and providing facilitating feedback. Results show that Google Forms-based tests are not only tests of learning but also tests for learning that contribute to continuous improvement and enhanced achievement. The results further reveal that students were highly motivated and willing to participate in more similar tests.

Keywords: Google Forms, Phonology, Teaching, Assessment

إستخدام نماذج غوغل في تدريس واختبار مادة النظام الصوتي الإنجليزي

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المستخلص

لم يعد استخدام التكنولوجيا في التعلّم والتدريس خياراً بعد الآن، بل أصبح ضرورة ملّحة وخصوصاً اذا كانت تتماشى مع أهداف المادة الدراسية والرؤى التعليمية والتربوية. لا تقتصر التكنولوجيا على استخدام أجهزة الكمبيوتر واللوحات التفاعلية الذكية والأجهزة المتطورة الأخرى فحسب، بل تعني أيضاً استخدام الأدوات المناسبة التي تسمح للطلبة بالابداع والتواصل والبحث والتعاون والتعمق في السياقات وبناء المهارات. ركزت معظم الدراسات على الاختبارات الشفوية او التحريرية التي تجري داخل الصف، وقليل منها أخذ على محمل الجد النظر في الجمع بين التكنولوجيا والتقييم اليومي الأكاديمي عبر الانترنت على المستوى الجامعي. يهدف البحث الحالي إلى إستخدام نماذج غوغل كأدوات فعالة وقوية في تدريس مادة النظام الصوتي الإنجليزي واختبار كفاءة الطلبة فيها. كما يهدف أيضاً الى اختبار رغبة الطلبة للمشاركة في هذا النوع من الاختبارات وتقديم التغذية الراجعة المساعدة. أظهرت النتائج أن الإختبارات المستندة على نماذج غوغل ليست إختبارات للتعلّم فحسب، بل إختبارات من أجل التعلّم تسهم في التطوير المستمر وتحسين الانجازات. وكشفت النتائج أيضاً بأن الطلبة كانوا متحمسين للغاية ومستعدين للمشاركة في اختبارات مماثلة كثيرة أخرى.

الكلمات المفتاحية: نماذج غوغل، النظام الصوتي ، التدريس، الاختبار

1. Introduction

The internet today is a very important and versatile tool that offers people numerous services and helps them complete their work easily with only few mouse clicks and key strokes. The internet is not a fad or a luxury; it is a necessity as it is related to different fields in our everyday life such as education, networking, communication, marketing, business, medicine, industry, advertisement and so on. Technology and the internet have impacted our lives. Gates (2010) states that:

Technology has turbo-changed globalization. Corporate networks, commerce and communication all link seamlessly as if traditional boundaries didn't exist. And this is all made possible by the fact that we now spend nearly half of our waking hours using communications technology-hooked up to always-on networks in a way that writers like Nicholas Carr believe is actually rewiring our brains.

Scrivener (2011: 334, 340) states that the promise given to teachers, for many years, that computers would be regularly used in class, remained empty. Computers, for most people were only a "Friday afternoon extra" used as entertainment sources and never as a fundamental part of education. He (ibid) adds that nowadays the situation has changed and the promise is almost fulfilled since technology is now consistently available "in schools, in people's homes and in their pockets," and offers a variety of tools to help learners improve their language skills. These tools include, but are not restricted to, the following: interactive whiteboards (IWBs), the internet, search engines, Powerpoint presentations, free software, tablet computers and notebooks, ipods and music players, shared learning and social media, virtual learning environments (VLEs), and virtual worlds. In a similar vein, Motteram (2013: 5) asserts that the wide variety of digital technologies in this part of the 21st century is essential to language learning, teaching, and practice.

Murcia et al. (2014: 420) point out that digital technology can provide both teachers and students with access and ways to teach and learn language effectively. The internet today has changed the classical way we look at Computer-assisted Language Learning (CALL) due to the vast opportunities it offers to improve the four language skills either directly or indirectly. Arizona State University (ASU) (2017) confirms that regardless of what teachers teach and where they are teaching, technology always inspires them to accomplish tasks they have never expected possible.

As for assessment, Gifford (2017) states that

One of the reasons why, after 40 years, we are not seeing people coming out of schools with fluent language skills is that the old-fashioned "technology" is not facilitating this outcome... By thinking about the function of the assessment in a more integrated way and by using contemporary, digital technology, you can "break out of the box" and you can engage learners more effectively in the learning process- before, during and after the class. With digital devices, things are "always on", always available.

He (ibid) further emphasises that language learning and education is better when "the home, the school and other social contexts are joined together to provide opportunities for language learning."

On a personal note, many English language teachers in Iraqi schools and





universities feel frustrated when it comes to integrating technology into their teaching. They avoid technology for many reasons. First, the curriculum itself sometimes conflicts with technology. Second, technological means are not available in every class. Third, teachers believe that technology is too hard and too time-consuming to understand. Fourth, classroom time is not sufficient. Fifth, with the availability of tens of thousands of technology resources and products in the local markets and around the world, teachers feel confused of what to choose and what to use. Sixth and most importantly, some teachers do not reap fruitful outcomes when using technology simply because they do not align technology to their language teaching objectives but rather consider technology as the objective itself.

With that being said, teachers should always be judicious and careful in choosing technology tools that are considered educational. The main objective of the current paper is to explore the powerful functionality of Google Forms as a technology tool that holds high potential in teaching and assessing English Phonology to second year students at the Department of English, College of Education for Human Sciences, University of Basra.

2. Assessment

Assessment is an essential part of education. It is not only testing, but an indispensable part that is inseparably related to the teaching-learning process. Typically, assessment is divided into two types: summative and formative.

Summative assessment is the type of assessment usually conducted at the end of a course or a programme to gauge students' overall learning and performance. Distinct from this is the formative type of assessment that usually takes place during a course to evaluate students' learning progress with the aim of bringing about improvement (Torrance and Pryor, 1998:8).

Similarly, Marshall (2011:12) reports that summative assessment does not focus on everything students can do or how they learn and improve, but rather selects only a "small portion" of what they can do. Formative assessment, however, refers to all those exercises done by teachers to assess students' learning and progress by providing related constructive and diagnostic feedback in order to meet the instructional goals (ibid, 60-61).

Andrade and Cizek (2010:140-143) list six pedagogies for effective employment of formative assessment:

1. Understanding the content: Knowing the content of the study material is important, but formative assessments should also address students' misunderstanding of the content and the challenges and difficulties they often encounter.
2. Understanding the tools: It is not only important to select the tool that evaluates students' knowledge and understanding, but selecting the right tool that addresses the right knowledge at the right time.
3. Knowing when and how to implement formative assessments: Teachers should make use of all classroom opportunities to collect information about their students. They should know what hinders students' knowledge and progress before moving on to teach something new.



4. Knowing how to analyse the information: Conducting formative tests is not restricted to only providing opportunities to know information about the students, but should be followed by a careful analysis of the information obtained.

5. Knowing how to take action: After analyzing the information and responses, teachers should know what kind of follow-up instructional activities they should employ.

6. Understanding the value of formative assessment: Formative assessment should not be the end of instruction, but a means to an end which is helping students learn.

Formative assessments do not only provide opportunities for students to enrich their knowledge, understanding and skills at a given time, but are also useful didactic strategies for teachers to weave their next steps (Ortlieb and Cheek, Jr., 2012:17).

Stiggins (2002:758) states that summative assessment is an assessment *of* learning, while formative assessment is an assessment *for* learning, and a balance needs to be maintained between the two.

Google Forms is considered as a real-time formative assessment approach. However, this paper aims at investigating whether or not they can improve students' overall performance and motivation and whether or not they meet all aforementioned design features and pedagogies of typical formative assessments.

3. Google Forms Quizzes and Surveys

Google Forms is an all-around and resourceful part of Google's online applications suite of tools that helps everyone get things fulfilled easily and for free. They, as many agree, are simply the best tools for online quizzes and surveys. Google Forms was first launched in 2008 as part of Google Sheets. Later in 2016, Google apps developers turned it into a "standalone" full-featured tool that can be managed and accessed separately (The Zapier Team, 2016: 25-26).

Agarwal (2014) offers many good reasons of why Google Forms are perfect for creating and conducting online quizzes and surveys. Among these reasons are the following: one can create "any" number of surveys and quizzes and share with an unlimited number of participants in a way that saves both time and resources. The participants (students or anyone) can send their responses using their mobile phones or personal computers. Google Forms have a user-friendly phone and computer-compatible design. The responses are automatically collected and stored in an Excel spreadsheet which makes it easier to analyse large data sets using visual illustrations and other provided functions. Besides, it is possible to get email notifications once the respondents fill in a form with their responses. Google forms also support different question formats which make it useful for quizzes and surveys' designers to cover a wide range of material and play with alternatives.

4. Methodology

4.1 Objectives

The current research paper aims at the following:

1. Exploring the powerful functionality of Google Forms as technology tools in teaching and assessing English phonology to second year students at the Department of English, College of Education for Human Sciences, University of Basra.
2. Testing students' desirability and acceptability to participate in such online quizzes.
3. Investigating students' reflections about the test in terms of time, content, usability and technicality, preparation, and perceptions.
4. Evaluating students' learning progress and identifying their main strengths and weaknesses in the study material included.

4.2 Hypotheses

This work is based on the following hypotheses:

1. Google Forms are user-friendly, easy-to-use and powerful formative teaching and assessment technology tools.
2. Students are willing to participate in such online tests and all activities that integrate technology.
3. Google Forms-based quizzes and tests enhance students' understanding and achievements in their phonology course.

4.3 Procedure

Four Google Forms-based tests and one post-test survey were conducted by the researcher. The first three tests were conducted in approximately two months during the first semester of the academic year 2017/2018. Because of lack of sufficient time, only one online test was conducted in the second semester of the same academic year. The following is a discussion of how the first online test and post-test survey have been conducted.

The following is a step by step walkthrough created by the researcher on how to make the first self-grading Google Form quiz:

1. Google Drive should first be opened by following this link: <https://drive.google.com/drive/my-drive> , but one should be logged in into his/her Google account first.
2. The second step is to click on **New** then **More** then **Google Forms** and finally choosing **Blank Form**. (See Figure 1).

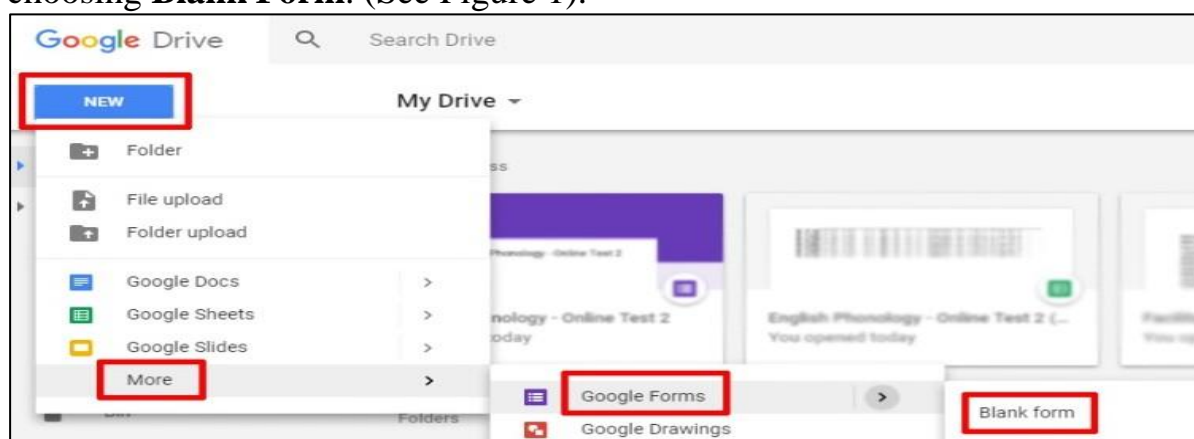
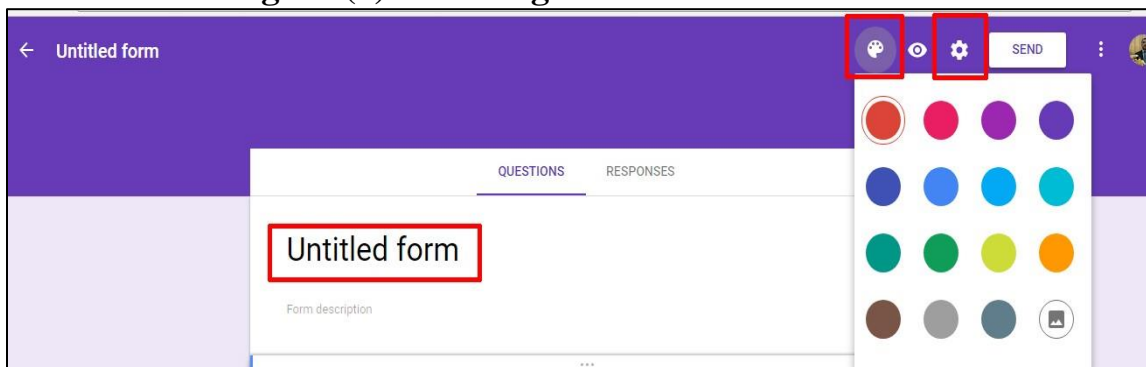


Figure (1): Creating a blank form



3. The following page (figure 2) will open. The default title of the quiz should be edited and the theme colour can be changed if desired by clicking on the colour palette. The settings must then be accessed by pressing the gear icon at the top-right corner.

Figure (2): Editing the title and theme colour of the quiz

4. Once the **Settings** window is opened, the “**Make this a quiz**” toggle slider under the **Quizzes** tab must be clicked to make the form a quiz. A few different quiz options will pop-up. The option “**Immediately after each submission**” should be selected to release the score at the end of the quiz/test. The other options' checkboxes should be checked as well so that the respondents can see the missed questions, the correct answers after submission, and the point values for all questions. Changes should then be saved at the end (Figure 3).

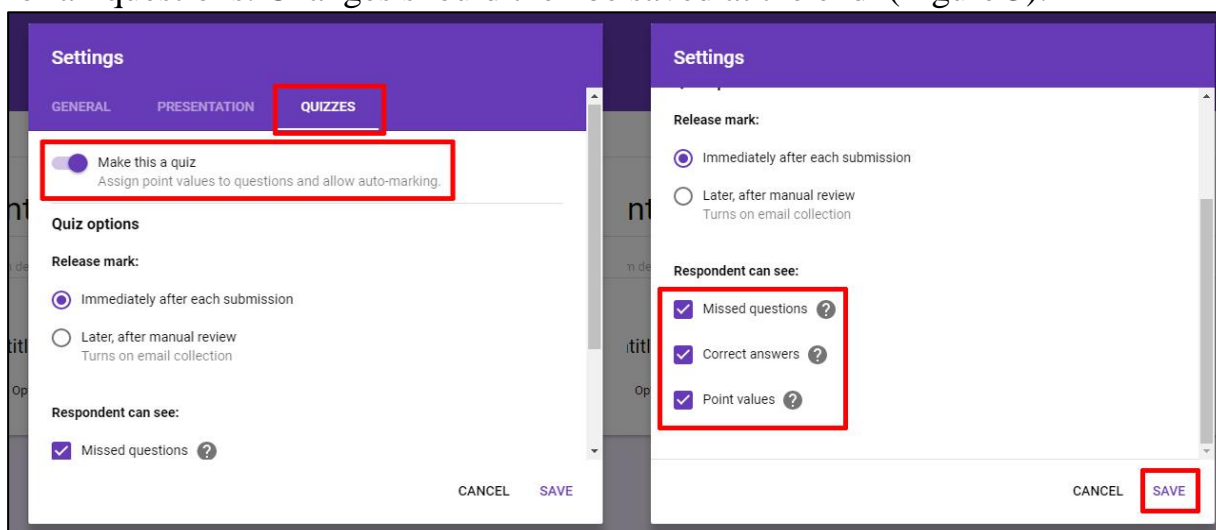


Figure (3): Switching the form to a quiz

5. Now that the form is turned into a quiz/test, it is time to start typing the questions and choosing the appropriate question format from the drop-down menu next to it. Multiple choice, Checkboxes, and Drop-down questions are highly recommended. Once the Multiple choice format is selected, one can start typing the first option and then adding the required options. Along with the options, a picture can also be inserted and be connected to the question. Questions can also be deleted or duplicated. It is further possible to make the question **Required** by clicking on the toggle slider at the bottom (figure 4).





Figure (4): Adding questions and other options

6. After adding the options, the **ANSWER KEY** must be pressed to select the correct option for the form to recognize later after each submission of the respondents. The desired points should then be assigned for each question. In our example, as illustrated in figure (5), the third option "a nucleus preceded by silence" is the correct answer and the question has been given (2 points). Additionally, it is recommended to ADD ANSWER FEEDBACK for the incorrect answers so that the respondents will learn why their answers are incorrect. Feedback can be added for the correct answers as well to add extra information (Figure 6).

Figure (5): Adding options, answer key, and points

Figure (6): Adding answer feedback

7. After finishing typing all questions, the form is ready to be previewed by clicking on the eye preview icon at the top-right corner between the settings and the colour palette icons. This will be the form the respondents (the students) see. A wrong answer has been deliberately selected in our example to later see how the feedback will show up (Figure 7). After submission of answers, a message will pop-up stating that the response has been recorded, and the respondents can view their total score, correct and incorrect answers and feedback.

Figure (7): Submission of answers and preview

8. One can view the responses to a Google Form test in four different ways. After clicking on the 'Responses' tab at the top of the page, the responses will be displayed as 'Summary', by 'Question', by 'Individual' or can be viewed in a Spreadsheet which automatically stores all details of the answers and can be saved and downloaded in different formats, (figure 8).

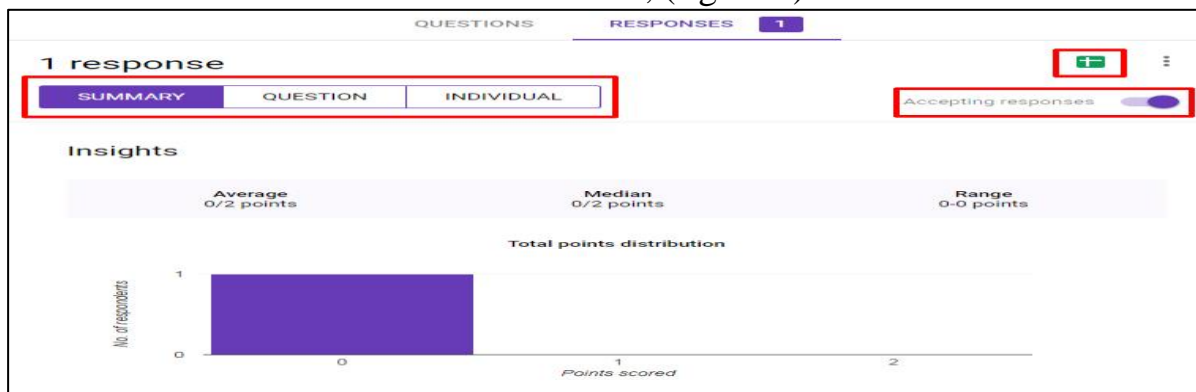


Figure (8): Responses Tab options

The 'Summary' tab shows the total point distribution of the entire test, i.e., average and median points, the range of points, number of respondents, and the points scored. It also shows the frequently missed questions, i.e., questions with a correct response rate of less than 50% and the number of correct responses out of the total. This tab displays the respondents' email addresses, names and their answers to all questions of the test as well.

The 'Question' tab shows the number of correct and incorrect responses per question and the given feedback to correct or incorrect answers.

The 'Individual' tab demonstrates the responses per individuals. It is possible to move between responses and select one from a list by clicking on the drop down menu.

Furthermore, all data including the answers, names of students, email addresses, scores, and timestamps (actual time and dates of answers' submission) will be stored automatically and can be viewed in a Google spreadsheet. To create a spreadsheet, click on the green square at the top-right corner in the 'Responses' tab page. You can either create a new spreadsheet, or select an existing one if you have already created one before. The spreadsheet data can be downloaded for personal use as PDF document (.pdf), Microsoft Excel file (.xlsx), a web page (.html) and other formats, (figure 9). Google spreadsheets can be exported as email attachments and they offer a wide-range of advanced functions which are even not included in Microsoft Excel.

	A	B	C	D	E
1	Timestamp	Score	1. Syllables with a zero onset have		
2	15/02/2018 00:55:12	0 / 2	a nucleus followed by silence.		
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

Figure (9): Google Spreadsheet

In conclusion, the 'Responses' tab offers all kinds of information needed to evaluate students' answers. When time of the test is over, you can click at the **Accepting responses** toggle slider to lock the form and disable receiving more responses. This can also be done automatically by using Google Forms' Add-ons. These Add-ons provide extra advanced functions that make Google Forms even more dynamic, professional and sophisticated.

9. After the form is created, one can share it with others using email or social media pages. The easiest way is to get a link to the form, copy the link, and then



share it with others via email (figure 10).

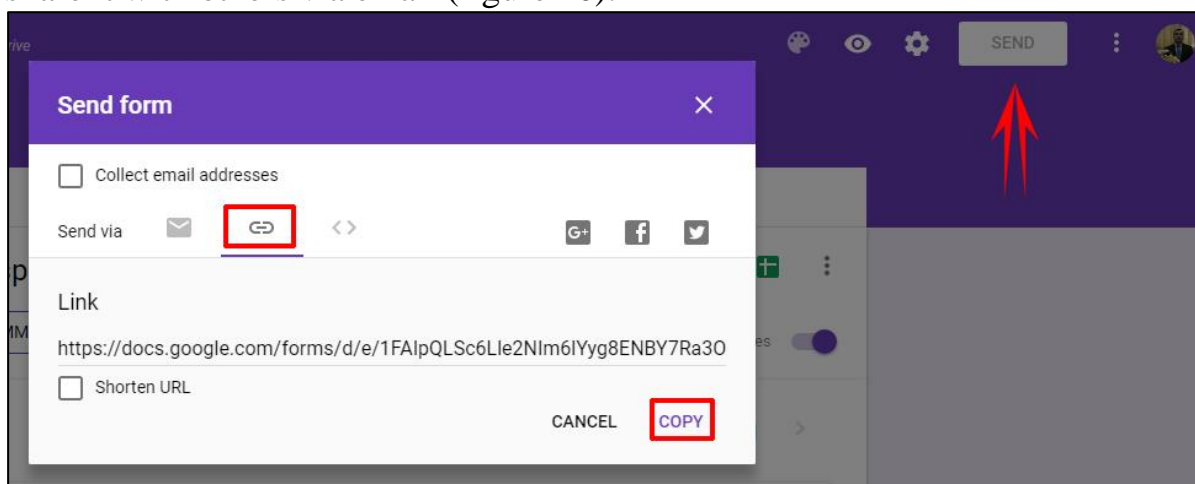


Figure (10): Sharing the form

Surveys are made in the same way except for the fact that the **Make this a quiz** toggle slider explained in Step No. 4 above should not be hit. No points will be assigned for the items of the survey and no answer key and feedback will be provided. The responses tab will provide the same kind of information as previously explained in Step No. 8. The results of the survey will be displayed in percentages and pie charts or other visual illustrations.

Moreover, the test is aligned to the course content and objectives. It consists of (50) questions on two chapters from students' textbook "English Phonetics and Phonology: A Practical Course" by Peter Roach. A week later, the instructor (who is also the researcher) collected (350) emails out of (427) 2nd year students (morning and evening studies) at the Department of English, College of Education for Human Sciences, University of Basra. Students were later informed of the exact date and time of the first online test which was on Friday, October 27, 2017 from 9:00 – 9:15 p.m. The researcher then explained to the testees (students) how to use Google Forms, answer questions, manage time and submit their responses. Following this, a reminder email of the test was sent to the students a day before the actual date of the test.

The researcher sent the link to the first test to the students' emails exactly a minute before the specified time using a countdown timer to monitor and measure the time in order to lock the test later and not accept more responses. After the test is locked, the results are automatically stored on Google Forms 'Responses' tab, previewed and manually saved on the computer's hard drive in different file formats for future analysis and evaluation.

The researcher discussed the results with the students informing them of their strengths and weaknesses. A follow-up step was next employed by the researcher to help students correct their mistakes and overcome potential problems by giving them instructional tips and also by focusing on some challenging topics in future lectures. Two days later, the researcher created a post-test survey via Google Forms and sent it to randomly-selected (110) participants aiming at receiving their feedback about five main criteria of the test: time, content, usability and technicality, preparation, and perceptions. Results of the survey were stored and saved in the same way for future review



and analysis.

Three more online tests were then conducted on Friday, November 24, Friday, December 22, 2017, and Friday, April 20, 2018. It is worthwhile mentioning here that the last three tests received more presence and turnout than the first one. Furthermore, the results were substantially better. This paper will only describe the content and results of the first online test and the post-test survey.

5. Content of the First Online Test

The first online test included the following topics:

1. Phonemes and Symbols: this topic includes a discussion about some fundamental theoretical questions and concepts. It deals with speech segments, segmental vs. suprasegmental phonology, the number of English vowels and consonants, phonemes, minimal pairs, allophones, complementary distribution, transcription types and transcription exercises, IPA, and the differences between phonetics and phonology.

2. The Syllable: this includes details about the nature of the syllable, its definition, the minimum syllable, phonotactics, the structure of the English syllable in the onset and the coda, consonant clusters, the maximum phonological structure of the English syllable, and syllable division.

3. Phonemic transcription: the test included several questions about the phonemic symbols of English vowels and consonants in addition to the phonemic transcription of individual words. The main reason of including transcription is because of its high importance in improving students' pronunciation. Another reason is that students need to practice transcription and have a good command of its process since they will need it in other topics of their syllabus. If students are weak in transcription, they will face serious problems particularly when dealing with the structure of the English syllable, strong and weak syllables, simple and complex word stress, weak forms, aspects of connected speech and intonation. In other words, transcription is integral to understanding all course content.

4. Place of articulation, manner of articulation, and voicing of English consonants: although these are phonetic aspects which students have already studied in their first academic year, students still need them to deal with future phonological topics such as assimilation.

6. Description of the First Online Test

The first online Google form-based test consists of two sections. Section 1 of 2 includes required fields for the participants' email addresses and full name which must be filled in to continue to the next section. Section 2 of 2 includes 50 questions on the content mentioned previously. The questions are distributed as follows: 10 questions on Chapter (5), 22 questions on Chapter (8), 8 questions on transcription, and 10 questions on place, manner, and voicing of English consonants. The questions are of the Multiple Choice Question (MCQ) format, and were not **REQUIRED** to be answered. In other words, the students can leave whatever difficult questions unanswered. Feedback to incorrect answers is also provided, and the students need to submit their answers within the time



limit, i.e., (15 minutes).

7. Results of the First Online Test

The overall point of the test was 100, and the test consisted of 50 questions. The questions carried equal points. The results were displayed in four different ways: summary of results, results by questions, results by individuals and more than that, in a spreadsheet.

The number of responses received was 174, meaning only these students from morning and evening studies submitted their responses within the time limit.

Figure (11) shows the average, median, and range of the received responses.

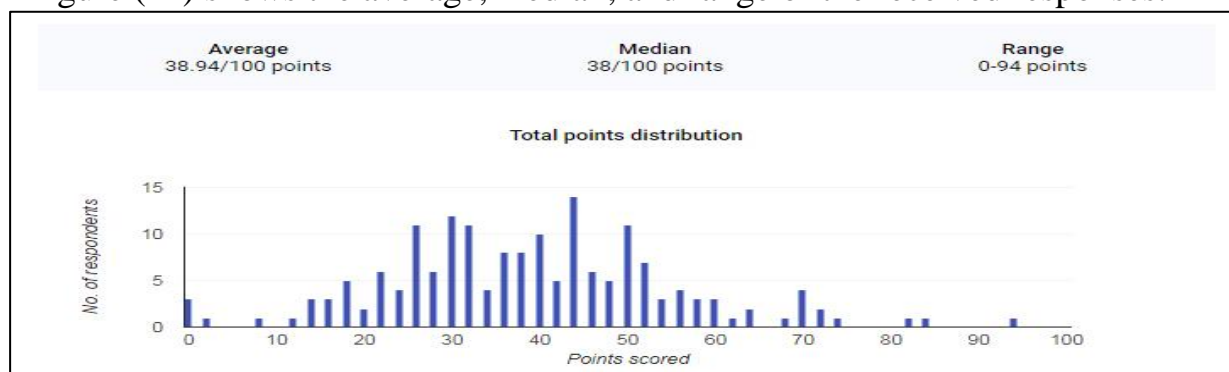


Figure (11): Average, Median, and Range of the responses

The Average out of the total points is 38.94/100 pts.; the Median is 38 pts.; and the Range is 0-49 pts., i.e., the lowest point scored is 0 and the highest is 94. The number of responses above 50 is 45 out of 174, i.e., 25.86% students did well in the test, while the number of responses below 50 is 129.

Table (1) shows the number of responses each question received and the rate out of the total number of responses. It also shows the number of correct responses for each question and the rate out of the number of responses.

Table (1): Rates of all and correct responses for each question

Number of Question	Number of Responses	Rate %	Correct Responses	Rate %
1	104	59.77011	16	15.38462
2	160	91.95402	85	53.125
3	157	90.22989	111	70.70064
4	159	91.37931	119	74.84277
5	157	90.22989	58	36.94268
6	159	91.37931	38	23.89937
7	166	95.4023	105	63.25301
8	159	91.37931	127	79.87421
9	166	95.4023	101	60.84337
10	149	85.63218	73	48.99329
11	152	87.35632	112	73.68421
12	167	95.97701	114	68.26347
13	148	85.05747	77	52.02703
14	161	92.52874	92	57.14286
15	119	68.3908	51	42.85714
16	158	90.8046	138	87.34177
17	161	92.52874	121	75.15528
18	155	89.08046	40	25.80645
19	156	89.65517	85	54.48718
20	148	85.05747	96	64.86486





21	143	82.18391	44	30.76923
22	148	85.05747	102	68.91892
23	141	81.03448	67	47.51773
24	138	79.31034	101	73.18841
25	141	81.03448	42	29.78723
26	116	66.66667	51	43.96552
27	141	81.03448	93	65.95745
28	131	75.28736	97	74.0458
29	119	68.3908	79	66.38655
30	112	64.36782	43	38.39286
31	112	64.36782	55	49.10714
32	116	66.66667	80	68.96552
33	110	63.21839	29	26.36364
34	111	63.7931	67	60.36036
35	91	52.29885	23	25.27473
36	78	44.82759	31	39.74359
37	96	55.17241	36	37.5
38	94	54.02299	43	45.74468
39	93	53.44828	65	69.89247
40	94	54.02299	20	21.2766
41	84	48.27586	34	40.47619
42	92	52.87356	68	73.91304
43	93	53.44828	47	50.53763
44	94	54.02299	34	36.17021
45	90	51.72414	37	41.11111
46	89	51.14943	52	58.42697
47	75	43.10345	40	53.33333
48	85	48.85057	27	31.76471
49	100	57.47126	61	61
50	116	66.66667	61	52.58621

Table (1) demonstrates that the questions that received the highest numbers of responses are questions No. 12, 7, 9, 14, 17, 2, 4, 6, 8, 16, 3, and 5. They received 167, 166, 166, 161, 161, 160, 159, 159, 159, 158, 157, and 157 responses respectively. Most of these questions are about the syllable. This is due to their frequency in the test, i.e., 22 out of 50. The questions that received the lowest numbers of responses are questions No. 47, 36, 41, 48, 46, 45, 35, 42, 39, and 43 as they obtained 75, 78, 84, 85, 89, 90, 91, 92, 93, and 93 respectively. Most of these questions are again about the syllable because of their level of difficulty and time pressure. The number of responses for the other questions is not constant and fluctuates between 94 and 156.

Furthermore, the questions that received the highest numbers of correct responses, in accordance with the total number of the responses, are questions No. 16, 8, 17, 4, 12, 11, 3, 7, 22, 9, and 24. They received 138, 127, 121, 119, 114, 112, 111, 105, 102, 101, and 101 correct responses respectively. Most of these questions are also about the syllable and again because of their frequency of occurrence among the other questions of the test. The questions that received the lowest numbers of correct responses are questions No. 45, 37, 41, 44, 36, 33, 48, 35, 40, and 1 as they obtained 37, 36, 34, 34, 31, 29, 27, 23, 20, and 16 correct responses correspondingly. Again, most of these questions are about the

syllable because of their level of difficulty and lack of time. The number of correct responses for the other questions ranged between 38 and 97.

Table (2): Frequently Missed Questions

No.	Question	Correct Responses	Rate %
١	Which one of the following is NOT an aspect of segmental phonology?	16/104	15.38
٥	Which word of the following has the short vowel /ʊ/?	58/157	36.94
٦	Which one of the following is the correct phonemic transcription of the word 'stone'?	38/159	23.89
١٠	Transcribing orthographical passages is called "transcription from dictation".	73/149	48.99
١٥	Which vowel in the following words is the odd one out?	51/119	42.85
١٨	Which one of the following words is not monosyllabic?	40/155	25.80
٢١	The total number of phonemes in English is	44/143	28.38
٢٣	Which syllable of the word 'defeat' has a zero coda?	67/141	47.51
٢٥	Which word of the following is transcribed as /pɔːz/?	42/141	29.78
٢٦	The type of transcription that uses different realisations of the phoneme is called	51/116	43.96
٣٠	Which one of the following is the correct phonemic transcription of the word 'enter'?	43/112	38.39
٣١	/tʃ/, /f/, and /θ/ are not real phonemes, but only symbols representing the phonemes.	55/112	49.10
٣٣	The word 'comb' is monosyllabic of the CVCC type.	29/110	26.36
٣٥	Which word of the following does not have a diphthong?	23/91	25.27
٣٦	When one sound never appears in the same phonetic context as another, this is called	31/78	39.74
٣٧	A minimum syllable is always a single vowel in isolation.	36/96	37.50
٣٨	The study of the possible phoneme combinations of a language is called	43/94	45.74
٤٠	Which one of the following is the correct phonemic transcription of the word 'gas'?	20/94	21.27
٤١	'Still' and 'Steal' are examples of	34/84	40.47
٤٤	Which one of the following English Consonants is not voiced?	34/94	36.17
٤٥	The number of English consonants that can be post-initial is	37/90	41.11
٤٨	Which one of the following words is monosyllabic with zero coda?	27/85	31.76

Table (2) above lists the questions with a correct response rate of less than 50%. The total number of these questions is 22. Seven of them are about Transcription, seven are about phonemes and symbols, seven are about the syllable, and one question is about place, manner, and voicing of English consonants. To put this differently, 87.5% of questions about transcription were frequently missed by the respondents, 70% of questions about phonemes and symbols were frequently missed, 31.81% of questions about the syllable were frequently missed, and only 10% about place, manner and voicing.

These last results were diagnostic enough to identify the points of weaknesses the students have as far as the content of the test is concerned. This



was exactly the purpose of this online formative test, i.e., a test of and for students' learning. Consequently, the teacher took action by doing some follow-up instructional activities such as the following:

1. Extra lessons focusing mainly on students' frequent mistakes.
2. Modifying the lesson plans to meet students' individual needs.
3. Conducting classroom discussions and summaries.
4. Asking some students to take the role of the teacher and deliver some lessons themselves.
5. More practice and exercises.
6. Doing some pair and group work activities.
7. Conducting few follow-up formative paper quizzes.
8. Providing students with sheets of written notes and some handy online resources.
9. Asking students to reflect.

Referring to reflections, the researcher's goal is not the online test itself or the results of the test, but the importance of Google Forms-based tests as online formative assessment tools to provide constructive feedback. In other words, the main objective is testing the powerful functionality of Google Forms as teaching and learning tools. Therefore, a post-test survey was conducted seeking for students' reflections about five main categories. The following is a detailed description of the survey and its results.

8. Description of the Survey and Its Results

Two days after the first online test, an online survey via Google Forms was created and sent to 110 randomly-selected students who participated in the first online test. 90 students (81%) responded to the emails and answered all survey items. The respondents were not restricted by time, and answers were collected in 48 hours. The number of respondents was enough to the researcher to evaluate their answers and decide on future steps; therefore, the researcher locked the survey in order not to receive more responses.

The survey consists of two sections. In section one, the respondents type their full names and email addresses. Section two consists of five main categories, namely Time, Content, Usability and Technicality, Preparation, and Perceptions. The "Time" category or section has three items, "Content" consists of seven items, "Usability and Technicality" has six items, "Preparation" consists of a single item, and "Perceptions" has seven items.

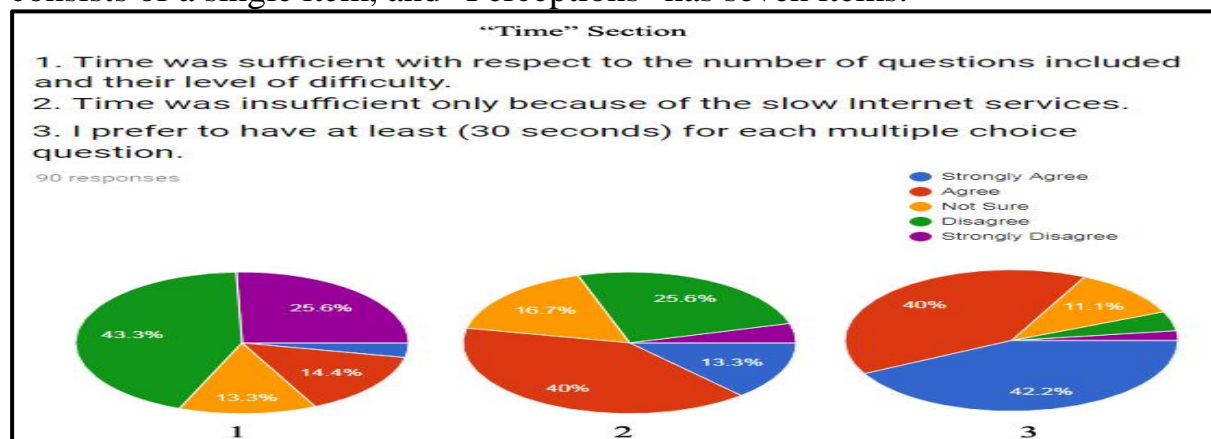
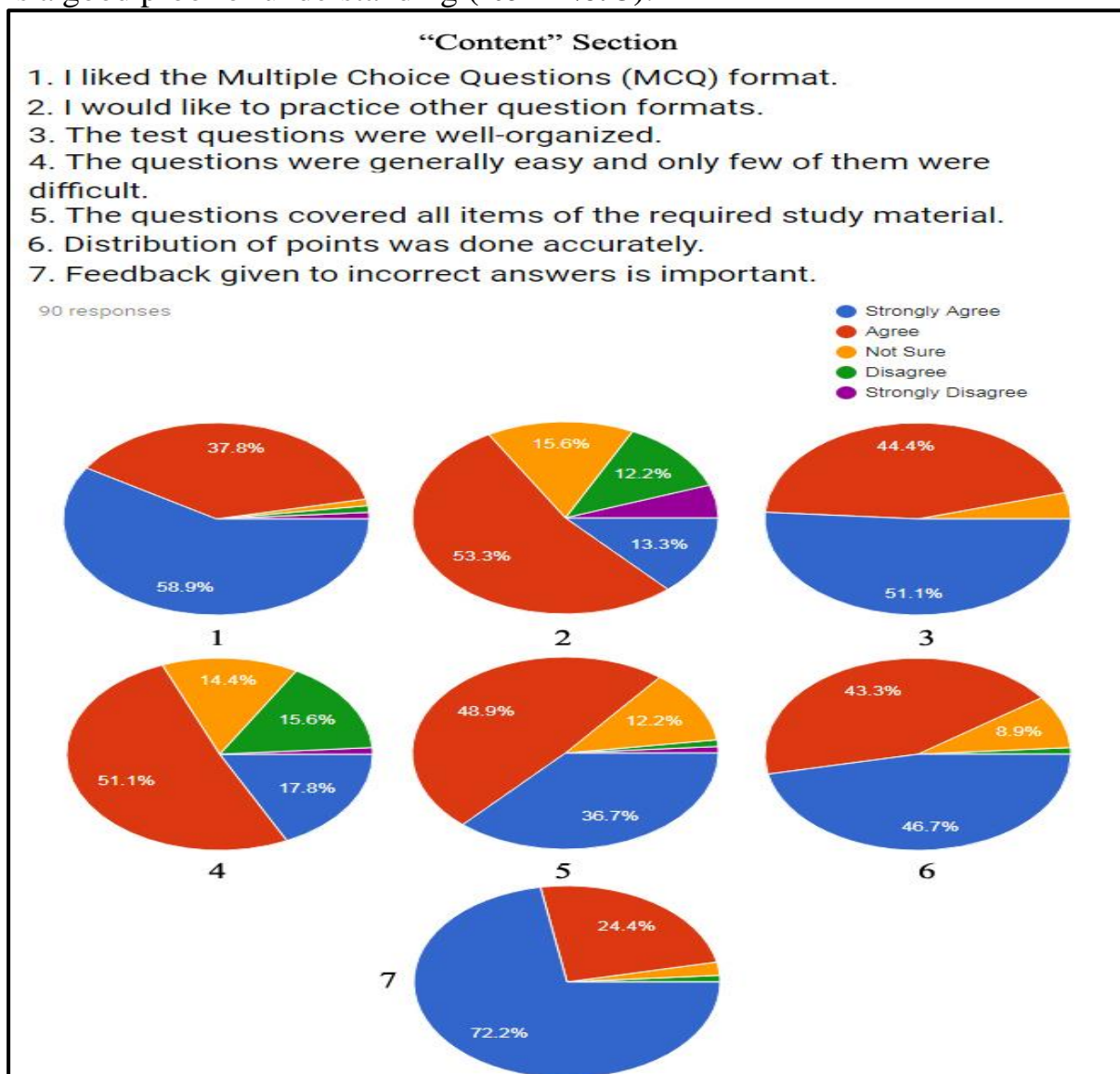


Figure (12): Responses to Items No. 1-3 (Time Section)

The first item of figure (12) illustrates the responses to the “Time” section of the survey. The figure shows that approximately 69% (counting the percentages of the 'disagree' and 'strongly disagree' sections) of the respondents disagree or strongly disagree and need more time to answer the questions. Only 17.7% think that time was sufficient. The second pie chart of the figure shows that the respondents believe that slow local internet services affect their responses and thus time will be insufficient. The last item of figure (12) also shows that almost 82.2% of the respondents want to have at least 30 seconds to answer each question. Only 6 (6.6%) respondents agree with the amount of time given. The reason why the respondents were not given enough time is to avoid cheating and focus on answering the questions. This does not mean that cheating may not take place, but this test was not created as an official test in the first place. The students were informed that this test is to review their understanding and to cast some light on their weaknesses. Accordingly, cheating will be useless and the scores will not be used officially anywhere. It is an online (formative) test for learning, and knowing how to answer accurately and quickly is a good proof of understanding (**Item No. 3**).



The following figure displays the responses to the "Content" section of the survey:

Figure (13): Responses to Items No. 1-7 (Content Section)

The first pie chart in figure (13) clearly demonstrates that 96.7% of the respondents (87 out of 90) like questions of MCQ format, and only few of them are not sure or do not like them. Despite the fact that almost all of the respondents like the MCQ format of questions, The second pie chart shows that 56.6% of them also like to practice other formats such as short answer, paragraph, checkboxes, and drop-down questions. The rest either disagree or are not sure. As displayed in the third pie chart, 86 (95.5%) of the respondents agree or strongly agree that the test questions were well-organized and only 4 respondents (4.4%) are not sure. As is clear from the fourth pie chart, precisely 68.9% of the respondents agree or strongly agree that the questions were generally easy, 14.4% are not sure, and 16.7 disagree and think that the questions were difficult (**Item No. 4**). Responses to the fifth item show that 85.6% of the respondents agree or strongly agree that the test questions were comprehensive and covered all items of their study material. The rest are not sure and only 2 (2.2%) respondents disagree. The sixth pie chart illustrates that 90% of the respondents agree or strongly agree that the distribution of points was fair (50 questions carried equal points), one respondent disagrees, and 8.9% are not sure. Responses to the seventh item indicate that 87 (96.6%) respondents agree or strongly agree that the feedback to incorrect answers is important to help them realise their mistakes and work on them. Two respondents are not sure and only one disagrees.

Figure (14) below displays the responses to the "Usability and Technicality" section of the survey:

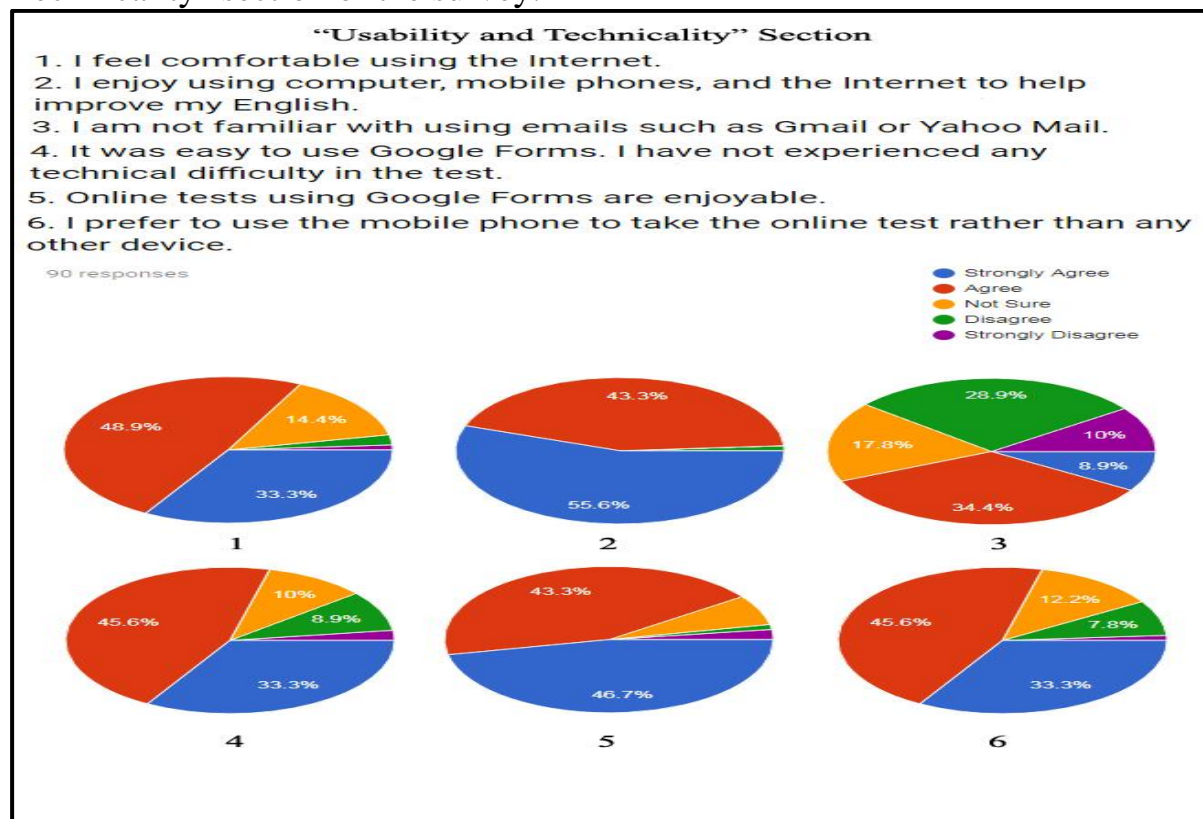


Figure (14): Responses to Items No. 1-6 (Usability and Technicality Section)

As an illustration, figure (14) shows six pie charts corresponding to six items belonging to the Usability and Technicality section. The first pie chart shows that more than 81% of the respondents feel comfortable using the internet which is something expected and not surprising at all. The second chart shows that a large number of respondents enjoy using technology tools such as computers, mobile phones, and the internet. Item No. 3 received varying responses. Thirty-nine respondents 43.3% agree or strongly agree that they are not familiar with using emails, while 28.9% disagree or strongly disagree. The rest chose the "Not Sure" option. The responses in the fourth pie chart clearly suggest that Google Forms are easy to use with 71 (approximately 79%) respondents agreeing or strongly agreeing. This means that the majority felt comfortable having online tests on the Google Forms platform. Item No. 5 is closely related to the previous one. Google Forms were not only easy to use but also enjoyable to the majority of the respondents. 90% (81 respondents) find it very interesting to have tests on Google Forms. The last pie chart displays that approximately 79% of the respondents prefer to using mobile phones to participate in such kinds of tests. This is quite natural as most students nowadays have cell phones and not all of them have access to computers or tablets.

Figure (15) shows responses to the "Preparation" section of the survey:

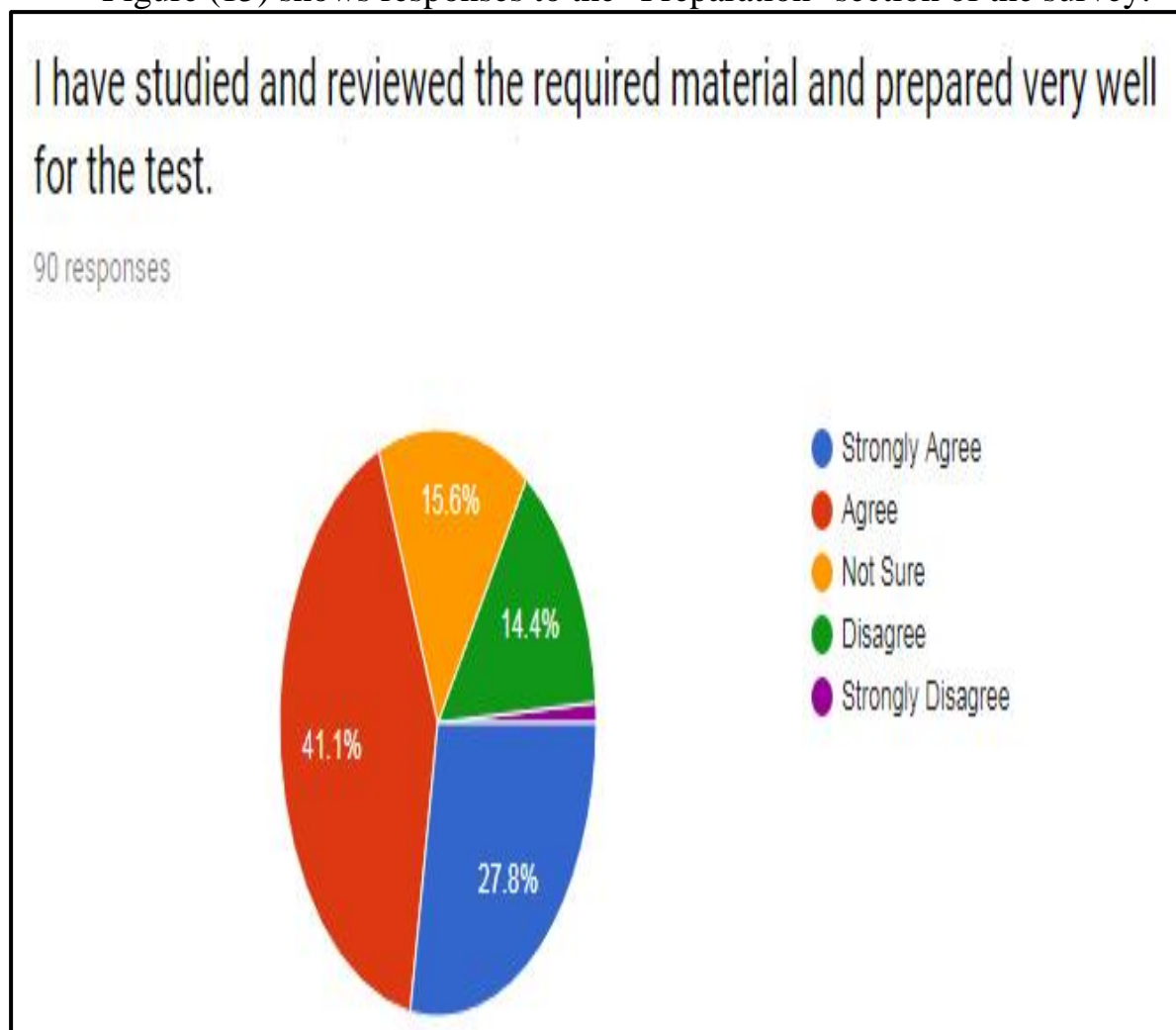
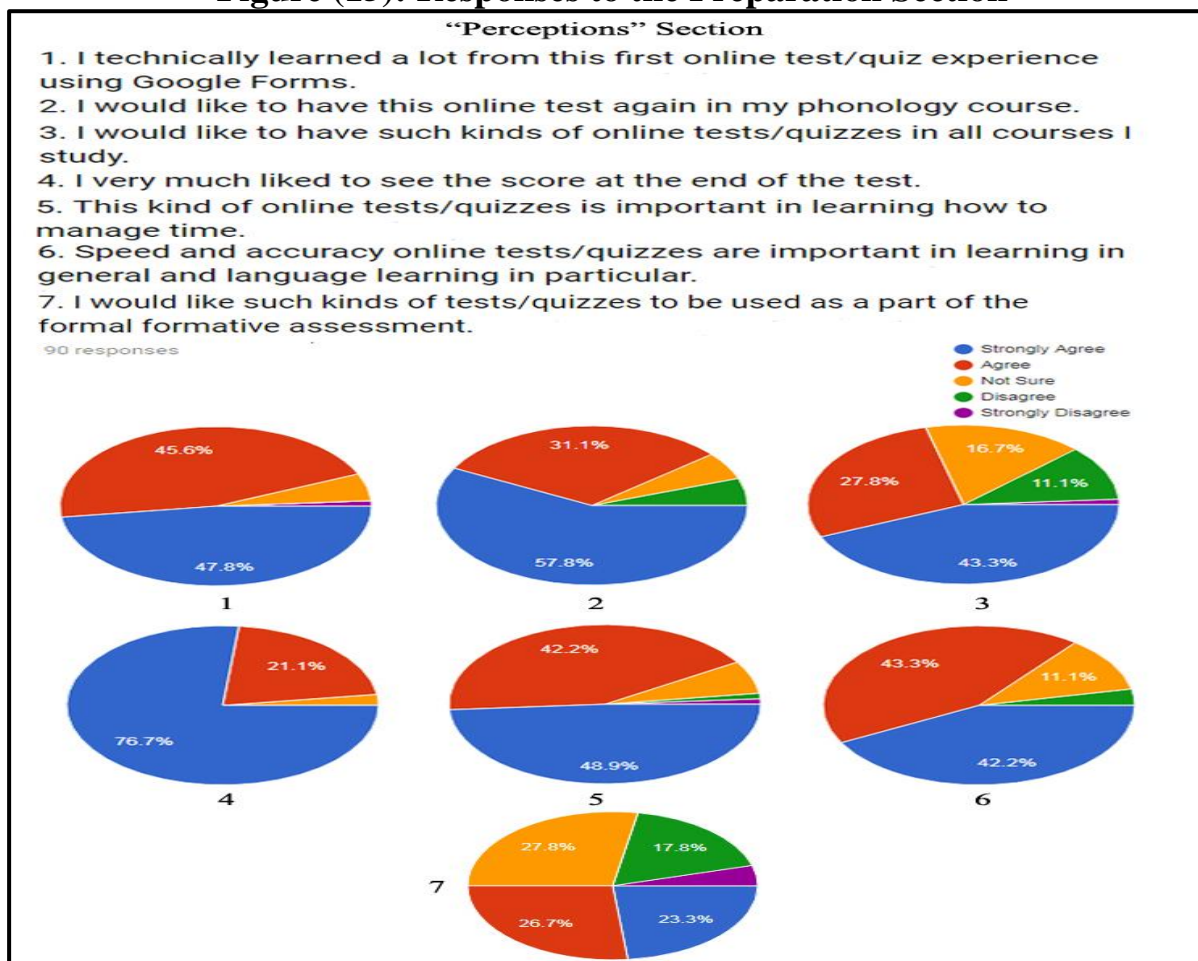


Figure (15): Responses to the Preparation Section



The "Preparation" section, as illustrated in figure (15), has only one item. The responses show that approximately 69% (62 respondents) have reviewed and prepared the required material before taking the test.

Figure (16): Responses to Items No. 1-7 (Perceptions Section)

Figure (16) shows seven pie charts corresponding to seven items belonging to the "Perceptions" section of the survey. The first chart remarkably shows that 93.4% of the respondents technically learned a lot from this online test. The second pie chart also shows that about 89% of the respondents want to have this kind of test again in their phonology course. Only (5) respondents do not want to have the test again. Responses to (item no. 3) indicate that the majority (71.1%) of the respondents would like to have this test in all of their study courses, and only 12% of them do not want that to happen. The rest of the respondents (16.7%) are not sure. The fourth pie chart considerably shows that 97.8% (88 respondents) like to see their scores immediately at the end of the test. No respondent disagrees and only 2 are not sure. Responses to Item No. 5 significantly show that 91.1% (82 respondents) agree or strongly agree that such tests are important in learning how to manage time, and only (2) respondents disagree. It is also quite noticeable from the sixth pie chart that 85.5% (77 respondents) agree that speed and accuracy tests are very important in learning. However, only 3 respondents disagree. Item No. 7 received some approximated



responses. Exactly half the respondents (45 respondents) agree or strongly agree to make these kinds of online tests as part of the formal formative evaluation of the students. The other half splits into (25) respondents who are not sure and (20) respondents who disagree.

9. Analysis of the Results

There are certain reasons why these specific items of the survey have been selected. Responses to items in the "Time" section can reveal facts about whether or not time was sufficient with regard to the questions of the online test, the correlation between time and slow internet services, and finally how much time students (or the respondents) prefer to have for each question. As shown in the results of the survey, the majority of respondents agree that time was insufficient with respect to the number of questions, their level of difficulty, and the weak or sometimes interrupted local internet services in Iraq. Hence, they recommended having at least 30 seconds for each question. The matter of determining time of the test depends on the instructor, and the nature of the subject and the questions. The instructor can shut down the test later to prevent receiving late responses. The instructor can reasonably increase time to fit the questions' level of difficulty and at the same time prevent students from seeking help or cheating. Since the goal is purely instructional, it is necessary to restrict time. The respondents were aware of the time limit, nevertheless many were able to submit their answers, with some obtaining very high scores. As mentioned before, the test was a speed and accuracy formative test, and a fast correct answer is a proof of understanding.

The items in the "Content" section were chosen in order to go over the format of the questions, organization, level of difficulty, material included, distribution of points, and feedback to incorrect answers. The results have shown that the respondents like the MCQ format and also like to try other formats if possible. It is worth mentioning here that the auto-graded multiple-choice questions are chosen because they are measurable, reliable, and can save time. They can be made too easy or too difficult depending on the way they are constructed. The results of the survey also show that the questions were organized, not difficult and extremely comprehensive. The distribution of points was done fairly according to the respondents' opinions. Assigning points can further be done according to the importance of the question and the topic being tackled. Finally, the respondents found that the feedback to incorrect questions given to them at the end of the test is very useful. This is because it conveys information to them and helps them recognise their mistakes and know what original material needs to be further examined and reviewed.

Responses to the "Usability and Technicality" section show that the majority of respondents feel comfortable using the internet and the majority enjoy using mobile phones and computers. The results also showed that about 44% of the respondents were not familiar with emails, thus the test was a good chance for them to be acquainted to how to write and reply to emails. Moreover, the results revealed, as hypothesized, that Google Forms were fun and easy to use which is a good motivation factor for the students. Coupled with the previous results,



responses to the last item of that section indicate that the respondents like to take the test using their phones rather than other devices. This last result is a key advantage and adds to the success and applicability of the online test since most students nowadays have their own mobile phones.

The "Preparation" section has a single item and responses to that item confirm that most respondents have prepared well before taking the test. This is one of the main goals of the test. Preparation and review of material enrich students' competence and this formative online test is an attempt to examine that competence and enhance it. In other words, this online test is a good chance for students to read more and direct their efforts to accomplish better results.

The last section (Perceptions) explores the students' observations and opinions. As put forward in the hypotheses, the results have shown that the respondents learned a lot from this online test experience and would like to have it again in their phonology course and in other courses as well. They simply found the test very useful to learn, know how to manage time, and also develop an efficient set of study skills. The responses revealed that a large number of the respondents feel excited to see their overall scores at the end of the test with most confirming that such tests are important in time management and in improving one's learning.

It appears that time was the only issue the respondents wanted to seriously change. As a result of that demand, the instructor extended time in the following three online tests to roughly 30 seconds per question. The same follow-up feedback and discussion procedures were carried out by the instructor and the four tests received a considerable welcome from all and contributed significantly to their understanding of the material on the one hand and their achievements in official semester exams on the other.

Referring to the objectives, Google Forms have been proved to be effective, and students have shown their desirability to participate in future tests. Students have also given their reflections on the items of the survey, and finally learning has enhanced and constructive feedback has been provided.

10. Conclusions

This research paper has arrived at the following conclusions:

1. For teachers, Google Forms save time and effort of checking and grading hundreds of formative test sheets and offer all results and required statistical information by just one click of a button. The teacher, as shown in this paper, can analyse the correct and incorrect answers and also know all strengths and weaknesses of the students from the data saved by Google Forms.
2. For students, tests and quizzes using Google Forms help students learn how to manage and deal with time. Such tests offer students their scores immediately and provide them with all necessary feedback. This kind of online tests is a good opportunity for students to stay away from all tension, stress and anxiety that could be caused by the boring atmosphere of the normal examination room. These tests also help students develop their expertise in dealing with the internet, emails, and Google Forms. More importantly, the more online tests the teacher constructs, the better the chance that students read and review the



material preparing for official semester exams.

3. For the institution, Google Forms-based quizzes and tests could be conducted in daily study classrooms or special designated language labs under the supervision of the instructor. All needs to be provided is an internet service available to both the instructor and the students. Links to the test can be published on the institution's official website which is considered a smart way to increase traffic statistics on the website.

4. The four online tests dramatically enhanced students' outcomes and achievements in the phonology course and especially in transcription, syllable structure and stress placement. The greatest evidence was students' daily participation and understanding, along with their official exam scores.

5. Among other findings, the most significant ones are the following. Students feel excited about the time challenge but prefer to have at least 30 seconds per question. The majority of students reviewed the content and prepared before taking the test, and almost all of them wanted to have the test again in phonology and other courses as well.

6. One of the challenges this research has come into is that not all students have access to the internet, for technical, financial, or even social reasons. However, solutions are always available. Students can still participate from any internet service at the time of the test which usually does not take more than 20 minutes. It should also be noted that we are only talking about a very small proportion because nowadays almost everyone have access to the internet in a myriad of ways. Ultimately, having 80-90% of the students participating is better than no one participating. They can later share the questions and the answers with others who did not participate.

7. Another noticeable challenge is concerned with time. The internet is slow or interrupted in many places; therefore, students might not receive the link to the test instantaneously at the time of transmission. Moreover, submission of answers might take more time. This has been recorded in the first online test; therefore, 2-3 extra minutes to the original specified time solved the problem in the other three tests. It should be remembered that the test must be locked because the play of time is crucial to achieving the pedagogical goals. Limited time will restrict students from resorting to outside sources other than their personal information. However, we still trust that the majority of students aim at learning, not playing or just scoring high points.

8. Finally and as stated by the US industrial engineer Allen F. Morgenstern in the 1930's "work smarter...not harder", Google Forms always provide smart and endless possibilities to maximize chances of success and get the job done with less time and less effort. With Google Forms everyone wins eventually.

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