The Online Questionnaire: General Guidelines

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Abstract:

The use of the computer and the internet for research purposes has offered for researchers alternative tools for data collection. At Mohamed Seddik Ben Yahia/Jijel University, it is the pandemic situation Covid 19 that has constrained Master 2 students to use for the first time the online questionnaire (Web-based) to collect the data required for their research. This paper discusses the use of this research tool by highlighting some of its advantages and methodological limitations and providing some guidelines for a well-designed questionnaire. To make this paper more practical, some important steps used in the creation of a Web-based questionnaire using GoogleForms are illustrated .

Keywords: Online Questionnaire-Web-based questionnaire- Advantages -Limitations

ملخص:

لقد أتاح استخدام الكمبيوتر والأنترنت لأغراض البحث أدوات بديلة للباحثين لجمع البيان. في جامعة محمد الصديق بن يحيى /جيجل فرض الوضع الوبائي كوفيد 19على الطلبة حتمية استخدام الاستبيان عبر الأنترنت لأول مرة لجمع البيانات المطلوبة لأبحائهم. يناقش هذا المقال استعمال الإستبيان عبر الأنترنت مع إبراز بعض مزاياه وقيوده وكذا تقديم بعض الإرشادات لتسهيل تصميمه. وحتى تكون الأمور أكثر عملية، تم توضيح بعض الخطوات المهمة المستخدمة في إنشاء استبيان عن طريق الأنترنت باستخدام تطبيق غوغل فورمز.

الكلمات المفتاحية : إستبيان عبر الأنترنت - الايجابيات - السلبيات- تصميم الإستبيان عبر الأنترنت- تطبيق غوغل فورمز .

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1. Introduction

An online questionnaire is a research tool in which the internet has a role to play. Two different ways are possible to send the online questionnaire: the email questionnaire (sending a file attached to the message), and the Web-based questionnaire (sending a link in the email message, or placing the link on a Web page). For researchers, the online questionnaire is more attractive than pen-paper questionnaire because of the significant facilities it may offer. However, the online questionnaire may also present some methodological problems that can affect results quality. Henceforth, this paper is intended to Master 2 and Doctorate students who are not familiar with the online questionnaire, but intend to use it as their research tool for collecting data.

2. General Issues about the Questionnaire

Questionnaires are the most popular research tools used for collecting data. They are defined as "research tools through which people are asked to respond to the same set of questions in a predetermined order" (Gray, 2004, p. 18). Usually, the respondents have to react to these questions in different ways: either by writing their own answers or selecting answers from existing options. The data collected from the questionnaires may be either *qualitative* or *quantitative*, and it is of three types: *factual information* (respondents' demographic characteristics such as age, gender…..); *behavioral information* (respondents' present and past experiences), and finally *attitudinal information* (respondents' thoughts, beliefs, attitudes, and interests) (Dornyei, 2007).

Gray (2004) classified the questions used in questionnaires into *closed questions* and *open questions*. On the one hand, the closed questions are of many types such as *list questions* (selecting among a list of responses), *category questions* (selecting only one answer), *ranking questions* (making the respondents' answers in order), *scale questions* (measuring a variable), and *classification questions* (looking for the respondents' name, age, or gender). On the other hand, the open questions are not followed by any response options to select from, but rather by some dotted lines to be filled by the respondents.

3. The Online Questionnaire

Questionnaires can be sent by post, administered face to face, or over the internet. With the use of the internet, two types of questionnaires have emerged. These are the e-*mail questionnaire,* considered as the earliest method used in sending the questionnaire via the internet; and the *Web-based questionnaire, which* is the most common way of sending the online questionnaire nowadays.

Cohen et al (2007) summarized the evolution of the questionnaire using the internet as follows: "internet-based surveys have moved from being in the form of emails to emails-plus-attachments of the questionnaire itself to emails

directing potential respondents to a web site, or simply to web sites" (p.226). In other words, sending an email questionnaire can be achieved either by sending the questionnaire as a text included within the email message or by sending it through a file (PDF, WORD) attached to the email message.
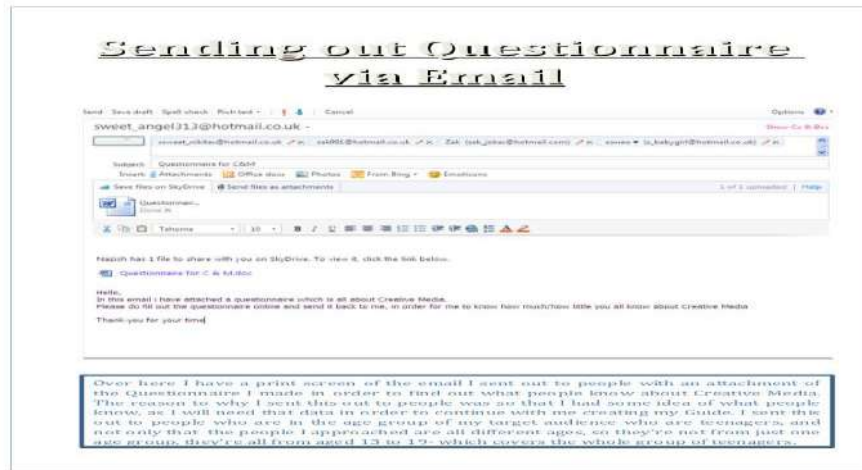

Figure 1: Sending the Questionnaire through an Attached File (Word)

In contrast, a Web-based questionnaire (**which constitutes the focus of this paper**) is sent through the combination of an email "cover letter" and an URL embedded in the message. To fill in the questionnaire, the respondents have to click on the link to be directed to the questionnaire. Another way of sending a Web-based questionnaire is to place a general request for respondents on a Web page inviting them to participate in the questionnaire. **Similarly, the respondents have also to click on the link places on the Web page.**

Figure 2: Sending the Questionnaire by Placing a General Request for the Respondents on a Web Page

4. Advantages of the Web-based Questionnaire

Many characteristics of the Web-based questionnaire have made it an attractive and popular research tool. The most common ones are its low cost in terms of time, effort, and money. In other words, not only the administration of the Web-based questionnaire is easy and quick, but also a great amount of information can be collected rapidly by reaching a large number of participants. Furthermore, less effort is made in collecting and processing data responses as data entered onto a Web-based questionnaire can be processed automatically (data is entered by the respondent rather than being keyed in later by the researcher). This helps in reducing errors when processing data. In addition, a Web-based questionnaire shows fewer missing entries than a paper-based one, and is also found to be less expensive than paper-based (paper and photocopying costs). Another particular advantage is the use of additional features that may make the questionnaire attractive (e.g. graphics, colors, fonts, and so on) (Fleeming & Bowden, 2009; Ullman, 2005).

5. Limitations of the Web-based Questionnaire

While the Web-based questionnaire proves to be effective in research; nonetheless, it has a number of limitations that can be classified into three categories: *Sampling problems, Non response problems, and Technical problems.*

5.1. Sampling Problems

Whatever the approach used in conducting research, two questions are frequently asked. The first question is "*how large should my sample be?",* and the second one is "*what sort of people shall I select?"* According to Dornyei (2007, p.96), "the *sample* is the group of participants whom the researcher actually examines in an empirical investigation, and the *population* is the group of people whom the study is about". This selected sample should be *representative* of the whole population; in other words, the sample and the population should share the most important general characteristics (age, gender, educational background…).

Problems in sampling may appear "when all potential members of the target have not been given the same opportunity to participate in the research" (Ullman, 2005, p.77). This particular is not unique to paper-based questionnaires as reported by Hewson *et al*. (2003, p. 27) who stated that "Internet-mediated research is immediately subject to serious problems concerning sampling representativeness and validity of data".

Many authors have investigated the problems affecting the sampling procedures. Ward et al (2004) discussed the problems of the limited /non-access of the internet for all the members of the chosen population, the unavailable e-mail addresses of the participants, or even their use of the mail filters**.** In another study, Nayak and Narayan (2019) reported the problem of respondents'

unfamiliarity with some computer skills necessary to answer and send the questionnaire. Kaye and Johnson, (1999, p.326) raised the problem of self-selection saying that "[once] a survey is posted to the Web, anyone who stumbles across it can fill it out". While this may increase the response rate, it can, however, "result in respondents with biases selecting themselves into the sample" (Andrade, 2020, p. 576). Such Problems of sampling in general and self-selection in particular make it impossible for the researcher to generalize his/her findings to the whole population. To overcome this problem, the researcher may provide a PIN (personal identification number) to limit access to those people sought in the sample, and avoid multiple submissions from the part of the same respondent.

5.2. Non- Response Problem

Non-response errors occur "when individuals fail to respond to the invitation to participate in a survey or abandon a questionnaire before completing it" (Lumsden, 2007, p.45). Many reasons may lead to non-response errors. Among these is the fact that the respondents never receive the questionnaire. Another reason is the respondents' refusal to cooperate in the study, or their neglection of the questionnaire itself (Berdie & Anderson (1976, p.72). In the same vein, Ritter and Sue (2007) mentioned the technical problems and the length of the questionnaire which may make the participants abandon the process of filling in the questionnaire. Both problems, according to them, cause the respondents frustration and fatigue.

In another study, Dillman et al's (1998a; 1998b; 1999) (Cited in Cohen et al, 2007) reported that the respondents receiving simple/plain version are more likely to complete the questionnaire than those receiving a fancy version especially if the respondents have a limited browser. They further mentioned the problem of making the respondents forced to enter an answer before proceeding to the next question. This, obviously, will make the respondents abandon the questionnaire, and thus reduces the response rate.

Quinn (2002, as cited in Nutley, 2008) reported on the following strategies to enhance the response rates in online surveys. According to him, the longer the questionnaire is available on the web, the greater chance the students will respond. Moreover, it is important, according to her, to get the students and teachers familiar with using these new tools. Finally, Quinn (2002, as cited in Nutley, 2008) highlighted the factor of time in increasing students' motivation to answer the questionnaire by making the questionnaire short. Zuniga (2004, cited in Nutley, 2008), on his part, discussed the importance of making the respondents' access to the questionnaire easy through the use of a link that may direct the respondents to the questionnaire. Furthermore, the issue of providing frequent reminders is also highlighted by Zuniga (2004) though this can increase the respondents' sensitivity in case they have to answer many questionnaires.

5.3 Technical Problems

The major technical problem a Web-based questionnaire may cause for both researchers/respondents is the non-access or the slow network connection. In this regard, Ritter, L. A., & Sue, V. M. (2007) pointed out that "an online survey works best in a situation where the respondent pool is known to have e-mail and Internet access" (p. 7). Another technical problem that may hinder the process of filling in and sending the questionnaire is the variation of the software/ hardware versions of the sender and the receiver. Moreover, the excessive use of graphics may render the downloading of the questionnaire either slow or impossible. Besides this, a lack of knowledge of software and computer skills may hinder the process of sending/replying to a Web-based questionnaire (Ullman, 2007).

6. The Web-based Questionnaire Design

Questionnaires are wrongly believed to be the easiest research tools to be designed. Whether it is paper or online, designing a questionnaire requires "significant amount of knowledge, planning, and skills to execute correctly" (Lodico et al, 2006, p. 159). In addition to the general issues regarding the design of the questionnaire such as the general format or the wording items, the Web-based questionnaire presents more design options than the paper-based questionnaire.

There are two approaches used in the design of Web-based questionnaires (Couper, 2008; Toepoel, 2008). On the one hand, the *scrolling approach* is when the whole questionnaire is placed in a single HTML form, or a single screen with one or more action buttons such as submit or cancel put at the very end of the questionnaire. In this approach, which is very similar to the paper version, the respondents can have an idea about the length of the questionnaire, and feel free to respond to the questions in any order they prefer. The respondents should, however, submit their answers before closing the browser; otherwise, all their answers are to be lost. On the other hand, the *paging approach* is when each HTML form contains one or more questions. In other words, each question is placed on a single screen. While this approach doesn't allow the respondents to monitor their progress throughout the questionnaire, it enables, however, permanent storage of data through the use of the submit button each time a question is completed, so the respondents can complete the survey in multiple sessions, starting where they left off.

In addition to the general layout of the Web-based questionnaire, The Web-based various response options are used to facilitate the response process to the different types of questions. *Radio buttons* are round buttons to be clicked to provide answers. They are used when a respondent has to select only one

response in a range of answer categories to prevent multiple answers. *Checkboxes* are squares that can be ticked to provide an answer and are used when more than one answer is possible ('check all that apply' questions). *The Dropdown menu* is composed of a hidden list of answer options. The latter become visible when the respondent presses the arrow on the right-hand side and the list drops down. It is an option to display many response options without cluttering the questionnaire screen. *Grids or matrixes* are a series of items where the rows are a set of items and the columns the response options. *Text fields* can be divided into *text boxes* and *text areas*. Text boxes are small and should be used for relatively short input, such as one word or a few numbers. Text areas allow lengthy responses and should be used for open-ended questions. (Toepoel, pp. 190-193)

The paper questionnaire and the online questionnaire have much in common; yet, specific instructions in the design of Web-based questionnaires should be applied as reported by Dillman *et al.* (2000; 1999; as cited in Cohen et al, 2007, p.229)

- ✓ Start the web questionnaire with a welcome screen with clear instructions on how to proceed; this will motivate the respondents to continue.
- ✓ Provide a PIN (personal identification number) to limit access to those people sought in the sample.
- ✓ Make sure the first question is clear and easy to understand and complete.
- ✓ As the respondents are more familiar with the paper format, make the layout of questions as close as possible with this.
- ✓ Keep the line length short, to fit in with the screen size.
- ✓ Minimize the use of drop-down boxes, and direct respondents to them where they occur.
- ✓ Give clear instructions for how to move through the questionnaire using the computer.
- ✓ Make clear instructions for skipping parts in the questionnaire.
- ✓ Keep instructions for computer actions to be taken at the point where the action is needed, rather than placing them all at the start of the questionnaire.
- ✓ Avoid requiring respondents to answer each question before being able to move on to the next question.
- ✓ If multiple choices are presented, try to keep them to a single screen; if this is

    not possible then consider double columns, providing navigational instructions.
- ✓ Provide graphical symbols or words to indicate where the respondent has reached in

the questionnaire.

7. **Practical Instructions for Creating a Web-based Questionnaire using Google Forms**

There are a variety of Web-based applications used to create forms for data collection purposes. Among these applications are *Google Forms, Survey Monkey, Type Form, So Go Survey*, *Zoho Survey, or Kwik Survey.* Widely used by the students, Google Forms is a free Web-based application that allows storing data gathered in a spreadsheet. Using Google Forms, researchers can gt unlimited questions and answers (Sivakumar, 2019). To create a questionnaire using Google Forms, students need a Google account. In what follows some important steps for the creation of a Web-based questionnaire using Google Forms.

Step one: To create a Google Form, go to **googelforms.com**. Click **Empty**. A new form or questionnaire opens.
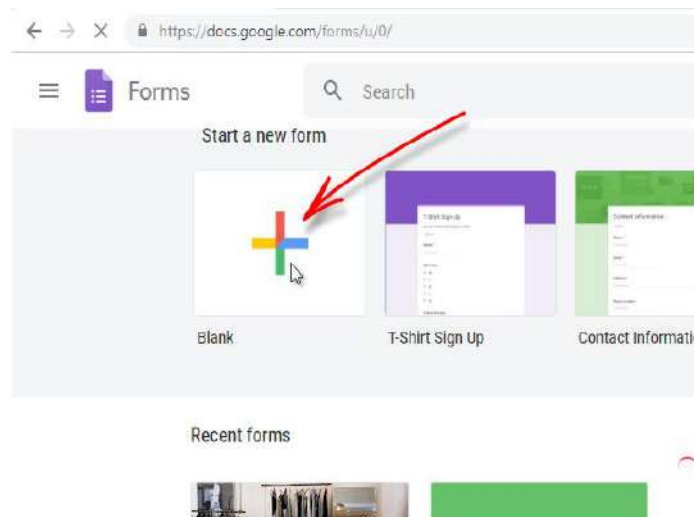
Figure 3

OR

Go to the **drive.google.com** page. At the top left, click **New**. Click on **More**
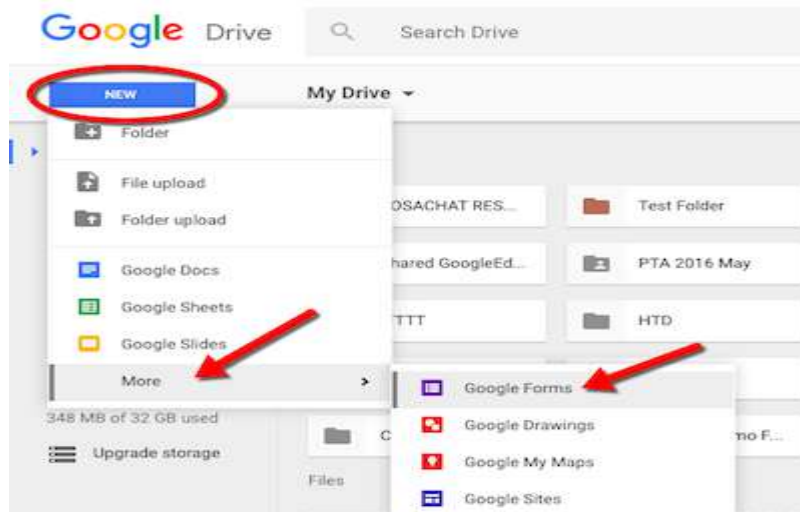
Figure 4

Step two: Give your form a title by clicking on **Untitled form** and typing in a name.
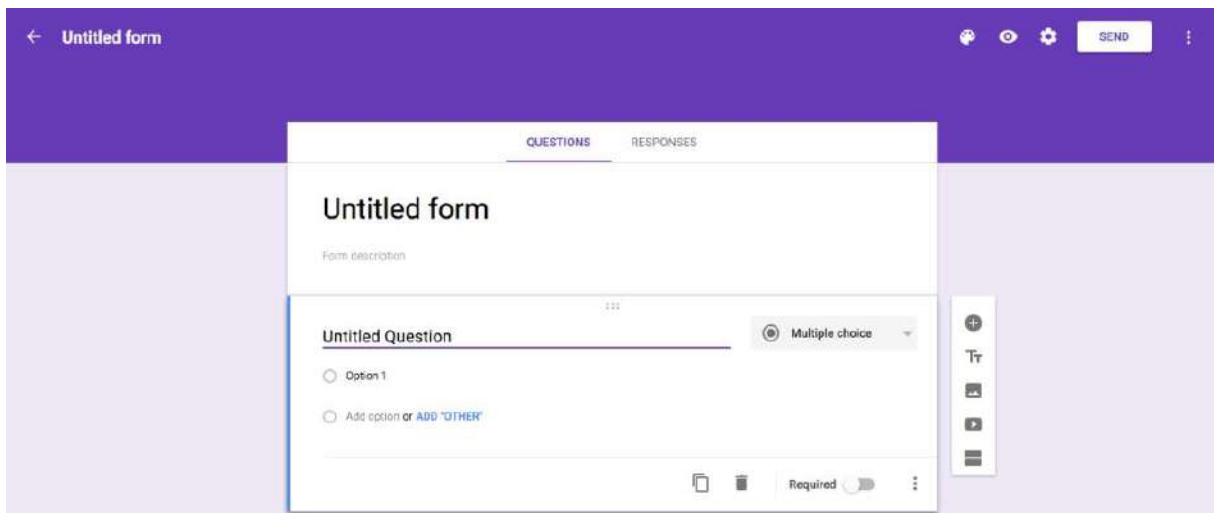
Type in your question by clicking on **Untitled Question**

Figure 5

Step 3: click the + icon to add more questions to your Form.
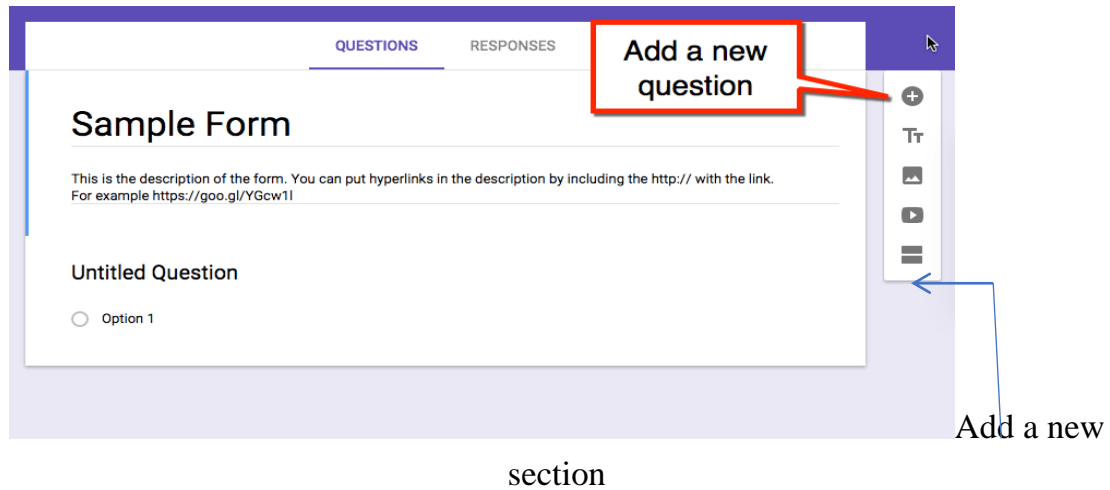
The last icon will allow you to add a new section.

Add a new section

Figure 6

Step 4: Google Forms offers a wide variety of question types to choose from.
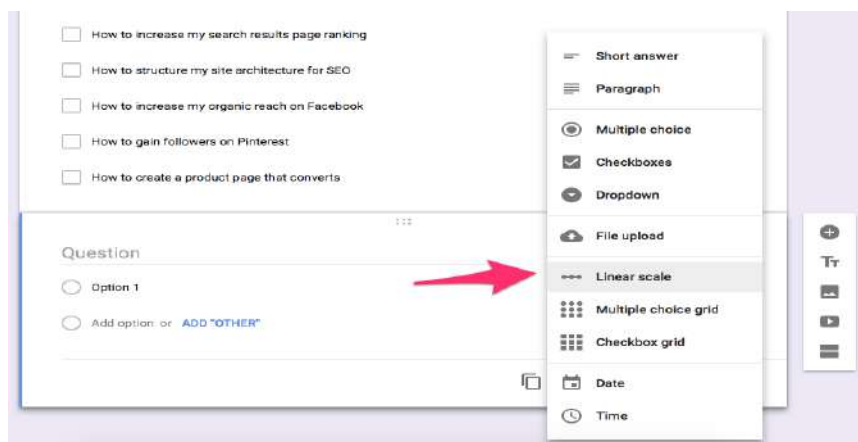
Figure 7

Step 5: Once your questionnaire is created, you need to embed your Google form. For this, you'll need to click on the **Send** button at the top of your form.
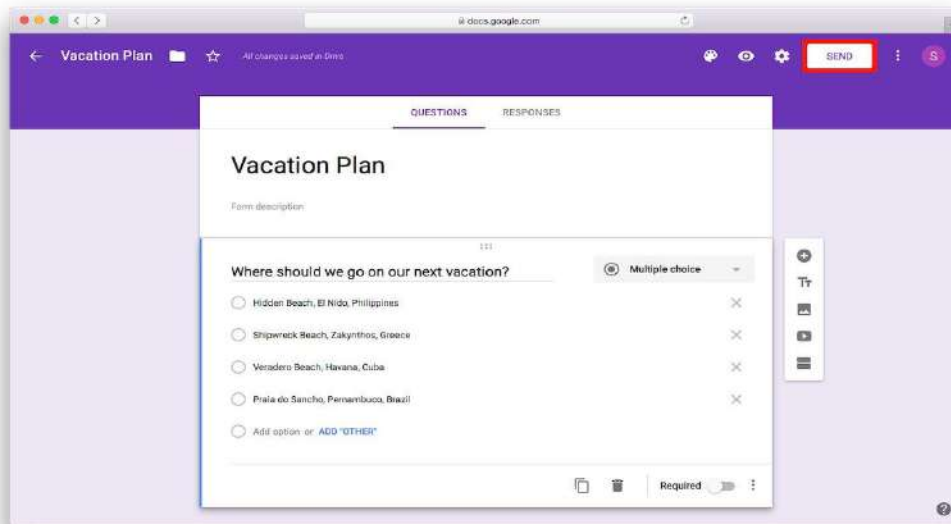
. **Figure 8**

Step 6: To embed the form in email, you need to click on **envelope** icon once you have a popup window.

Type in the email address (es) in the **To fields**, then press **Send.** The respondents will receive an email with a link.
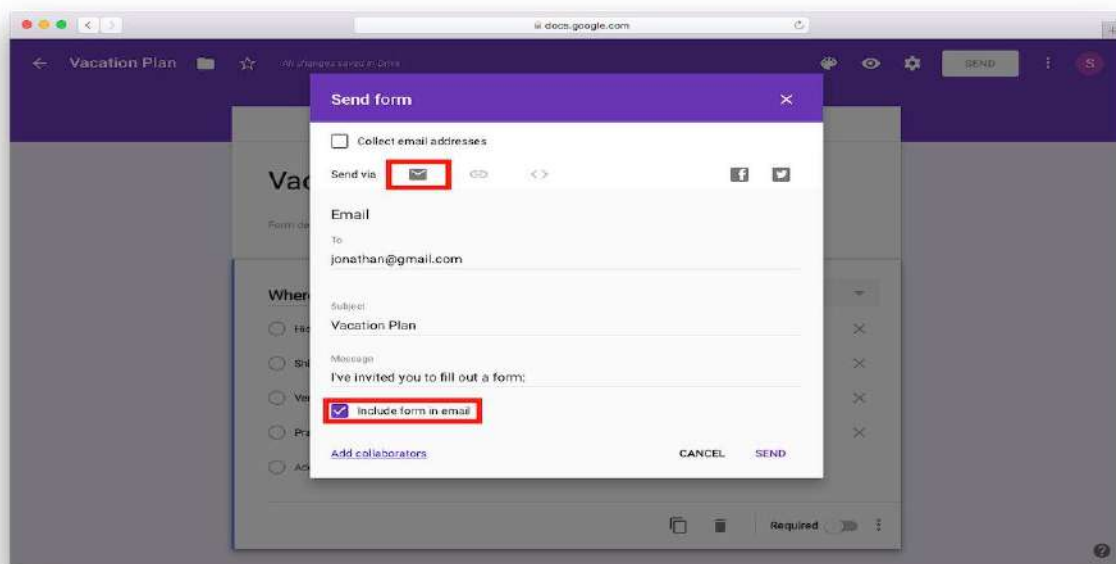

Figure 9

OR

Click on **the greater than / less than icon** to embed the form into a website. For this, you need just to click on **copy** and then press **Ctrl+C** to copy the link. Then **paste** it into your site, blog, etc.
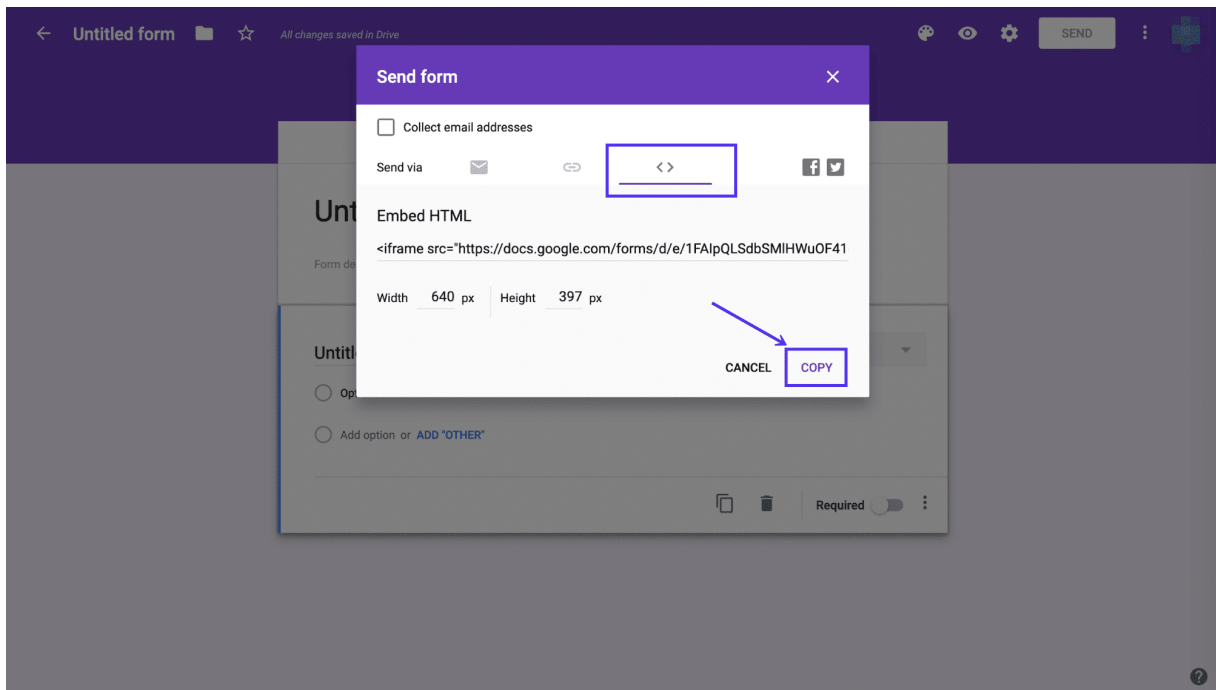
Figure 10

Conclusion

The growth of the internet has affected the researchers' way of administering the questionnaire for research purposes. Moreover, the existence of many ready-made software packages has facilitated the process of sending the questionnaire, collecting, processing, and analyzing data. Through this paper, the Web-based questionnaire has been introduced by highlighting some of its advantages and methodological limitations. The paper has also provided some instructions to be followed when designing the Web-based questionnaire, along with an illustration of the steps needed for creating a Web-based questionnaire using Google Forms. In a nutshell, the Web-based questionnaire offers more advantages than the traditional pen-paper. Researchers, however, should also be aware about the methodological limitations it may present. The popularity of the Web-based questionnaire in the Algerian universities in general, and in Mohamed Seddik Ben Yahia/Jijel in particular is due to the dictation of the pandemic situation. The question, however, is whether the Web-based questionnaire will persist in replacing the paper-based questionnaire after few years.

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6/30/2021