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### RESEARCH ARTICLE

#### THE CHALLENGES OF SOCIAL MEDIA RESEARCH IN ONLINE LEARNING ENVIRONMENTS

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#### Abstract

The purpose of this paper is to provide an overview of the critical challenges in social media research in the educational field and some current initiatives in addressing them. Semi-structured interviews were conducted with thirteen researchers using social media as the data source in their educational research. The study revealed four concerns that must be addressed before embarking on research involving social networking sites, including the volume of data, accessing data, the extent of data reliability and validity and some ethical concerns regarding collecting data from social media platforms. This study suggested that the new digital icons people use in social media communication to convey their emotions are essential and must be considered when analyzing data. Also, it is recommended to theorize the analysis of these social media-related icons (or language). They contain a wealth of information related to the meaning of online learning conversations.

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#### Introduction:-

Human social activity has rapidly transitioned to digital media platforms. We use Email services for mail, FaceTime or Skype for phone calls, Twitter and Facebook for microblogging, Instagram, or Snapchat for sharing images and videos, or WhatsApp and SMS for private messaging. Researchers now have access to an unprecedented amount of data to study human life and social systems due to the digitalization of social life (Stieglitz et al., 2020). However, getting access to this information is becoming increasingly challenging (Alghamdi,2019). This paper tries to articulate the concerns that face researchers involving social networking sites as a source of data in their research. Mainly, in educational research that activates social media applications as part of teaching or learning activities, then collect the data from these applications to study different aspects such as evaluation of student interactions, analyze the content of learning, or even create online learning communities (Alghamdi,2019).

According to McKenna, Myers & Newman (2017), qualitative research is generally challenging in terms of gathering and analyzing data; however, there are additional challenges when using social media as a source of data. Web 2.0 applications such as blogs, video/image/file-sharing platforms, and wikis are commonly referred to as "social media" (Fuchs, 2013). "A category of Internet-based apps that build on the conceptual and technological roots of Web 2.0, and that allow the creation and exchange of user-generated content," say Kaplan and Hoenlein (2010). (p.61). This definition introduces us to two crucial social media concepts: technology and content. Social media, according to the authors, is based on mobile and web-based technologies. Individuals and communities can share, co-create, adapt and discuss through highly interactive media.

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**Present study:-**

Carr and Hayes (2015) define social media as "Internet-based channels that allow users to opportunistically interact and selectively self-present, either in real-time or asynchronously, with both broad and narrow audiences who derive value from user-generated content and the perception of interaction with others." P.8. From this definition, they articulate five characteristics of social media as:

- 1- Social media are internet-based tools. It seems that developers are moving away from browser-based Web tools to include stand-alone applications based on the internet service and do not require the Web to browse or use them.
- 2- Social media are distracted and persistent channels; in which the user participates when they can commit to participating, while in face-to-face communication, both members require to be committed at the same time.
- 3- The authors specify the perception of interactivity with other users is necessary to distinguish social media. Fundamentally, users indicate an interactive element to consider the medium social. A social media is inherently social in nature. Therefore, it aims to initiate and maintain social interactions among its users.
- 4- Social media content is formed by contributions and interactions with other users rather than by an organization or individual hosting the medium.
- 5- Social media are Mass-personal communication. Mass communication channels are used for interpersonal communication, and interpersonal channels are used for mass communication. In other words, the users can simultaneously engage in mass and interpersonal interactions.

These various characteristics of social media suggest that there are several ways in which we can design our educational research studies. For example, one dimension relates to the depth of the researcher's involvement. There are two extremes regarding the roles of the researchers in using social media as research tools: that of the outside observer and that of the involved researcher. These can generate different issues that need to be addressed and identified. This paper will shed light on the challenges that face the researcher in the educational field when they use social media as the main or part of their data collection tools. Then we will summarize several suggestions based on the researchers' point of view to best deal with and minimize the effect of these challenges.

**Methodology:-**

An online survey was conducted to identify the researchers using social media as a data source in their educational research. The survey was distributed personally through my social networks such as WhatsApp and Twitter. I received 42 responses; then, I contacted them personally to get their consent to participate. 13 researchers agreed to participate in this research. The primary data collection tool for this research is semi-structured interviews. I focused on three main aspects: the challenges of using social media in educational research, the suggestions to deal with these challenges and any comments or additional details that could add by the participants. The main benefit of conducting semi-structured interviews is to enable the researcher to prompt and follow lines of questioning within the discussion (Ayres, 2008). semi-structured interviews allowed me to focus on exciting and unexpected ideas that emerged from the participants' responses. Therefore, the resulting transcript is a collaboration between the researcher as the director of the talk and participants as storytellers of their experiences. In order to ensure the interpretive validity of semi-structured interviews, the interview structure was designed to ask open-ended questions and allow for further probing questions. Thematic analysis was applied to the transcripts of the interviews to identify the main ideas mentioned as challenges and suggestions for using social media as a source of data in educational research.

**Result and Discussion:-**

From the findings of the interviews, it was reported that the majority of the researchers are aware of four main challenges of using social media for data collection in educational research. This section will present the challenges along with some suggestions from the researchers to demonstrate how they undertook them:

Although qualitative research is generally challenging in terms of gathering, validating and analyzing data, there are additional challenges when using social media as a source of data in educational research. This study summarizes four concerns that must be addressed before embarking on research involving social networking sites, including the volume of data, accessing data, the extent of data reliability and validity and some ethical concerns regarding collecting data from social media platforms.

**1- Data volume**

One of the most observable challenges in collecting data from social media platforms is the large volume of data involved. Although qualitative researchers tend to gather large amounts of data anyhow, the size of social media datasets seems to be overwhelming, even for experienced researchers in this study. The "big data" concept relates to "the flood of data that is generated and captured as users interact with the myriad of IT systems that support daily activities from iTunes, Twitter, and YouTube through to e-commerce and public services" (Dawson & Siemens, 2014, p.290).

In the use of social media networks, there are several types of information that can be obtained and analyzed for research purposes; for instance, the number of messages posted on each platform, reporting of students' login times, or total time spent online are common numeric data (Alghamdi, 2019). However, with large sizes of classroom or online learning groups, the process of capturing and analyzing students' posts on social media would generate vast amounts of data, particularly with open social networking platforms such as Facebook or YouTube channels. Another problem raised here is how to manage the number of participants in social media networks under a research study. A social media network is a public space, and the participation is voluntary in nature, so in some social networks, the number of participants cannot be managed, and groups cannot be closed off from other users or people with similar interests.

To deal with big data collecting from social media for research purposes, this study found that there is a need for filtering or "cleaning" the data extracted from social media. For example, some members may be excluded from data collection, and unrelated data can be ignored when the richness of the thread of online conversation is revealed. Moreover, using private or secure social media space or groups to ensure that the numbers of participants are more stable than on other platforms. The findings of this study also recommend selecting a sample of data of online interactions over a period (one to three months) as a way to narrow down the volume of data.

**2- Data access**

Two main methods were raised by the participants for accessing social media data: automated method and manual method. Both raised different concerns for the researchers. In the automated way, the researcher should find an appropriate tool to collect the data from a specified social media platform. The main problem here is how to find this tool or how the researcher could program an automated data collection by themselves as they need to collect specified information over a period. The second problem is the massive amount of data that could be generated if the researcher relies on automated access to data.

On the other hand, recording data manually from social media is very time consuming, and its ethical concerns are misunderstanding sometimes. Observing and recording interactions on social media platforms such as Twitter, Facebook, or YouTube comments is no different from taking notes on interactions in a classroom or school. But the difference here is the researcher needs a permeation to enter the school and collect data from its members; however social media is an open platform making some researchers assume that they have permission to access these online data. To deal with this misleading point, some researchers advice to clearly state the type of their data and distinguish between private data such as usernames, phone numbers, and email addresses; and open data such as a public tweet or comments on an open YouTube channel. This explanation will help the researchers how to deal with each type of data more ethically and adequately in their researches.

**3-Trustworthiness of data**

The interviews also revealed that there are concerns regarding the validity and trustworthiness of data obtained from social media. Social media data represent user-generated content. That means that social media data may not contain the specific points the researcher is looking for, or there may be questions about the trustworthiness and validity of the data. The use of social media data might exclude some group members from the study who prefer to observe the online learning discussions, or are limited participants, although they still learn and gain advantages from these discussions.

The trustworthiness of data can also be affected by anonymous participation, such as people using nicknames on social media platforms: it may be challenging to ensure the identity of the author of a post, which can lead to uncertainty regarding whether data can be trusted or not. The use of text as a mean of communication on most social media applications raised other concerns related to the trustworthiness of data because this type of communication often lacks visual signs. Furthermore, extracted texts might enclose new sorts of digital icons that need to be

analyzed in different ways. Such as emojis, capital letters, or even web-page links or a tweet, agree or like signs to support a post.

This study suggested that the new digital icons that people tend to use in social media communication to convey their emotions are essential and need to be considered when analyzing data. Moreover, this study recommended theorizing the analysis of these social media-related icons (or language), given that they contain a wealth of information related to the meaning of online learning conversations.

#### 4-Research ethics

The ethical concerns of collecting students' and teachers' data from social media were one of the most challenging aspects of our findings. The participants confirmed that they face a number of ethical issues when using social media for collecting data related to classroom learning activities. First, the researchers must be sure that all of the participants are fully aware and clear understanding of what kind of data will be collected from their social networks, how they will be collected and for what proposes.

Second, obtaining consent from all the students and the teacher was a sophisticated process because of the diverse perceives of social media data privacy. Some researchers are assuming social media content is open source, so they do not need to take any permission to collect and analyze the content available there. While other points of view assume that the researcher must get formal permeation from the person husting the learning group (usually the teacher), however other researchers thought that the permission should be taken from all the members of the learning group (students and the teacher) to collect and use their communication on social media for research purposes.

In order to address the ethical issues of social media research, it is recommended to identify the type and the level of privacy in social media by the researcher. This could help the researcher to be full describe their data and how they collect it ethically. Also, the consent forms must explain all the points the researcher wants to convey to the participants in straightforward, clear and explicit language.

#### Conclusion:-

This study addressed the most common challenges faced by the researchers when using social media as a source of data in educational research. Also, it provided suggestions to deal with these challenges. The findings reveal four concerns that must be addressed before embarking on research involving social networking sites, including the volume of data, accessing data, the extent of data reliability and validity and some ethical concerns regarding collecting data from social media platforms.

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