DESIGN OF VIDEO CALLING APP

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Abstract - The development of communication technologies has opened up new avenues for qualitative research. MyChat, a cutting-edge video conferencing platform, stands out among them thanks to a number of special features that raise the possibility of its attractiveness to qualitative and mixed-methods students. Few studies have looked at participant and student perspectives on using web and video conferencing platforms for research, despite the fact that studies on this topic have been conducted. Furthermore, there is a paucity of information on the advantages and drawbacks of using MyChat as a tool for data collection. In order to better understand MyChat's applicability for qualitative and mixed-methods students, we investigated its feasibility and acceptability for collecting qualitative video calling data in a health research context. Despite the fact that some participants had technical issues, the majority of them ranked MyChat higher than other video calling options like face-to-face, telephone, and other video conferencing services, platforms, and products. The relative ease of use, cost-effectiveness, data management features, and security choices of MyChat as a tool for qualitative data gathering are findings that point to its feasibility. It is advised to conduct more research into the usefulness of MyChat in order to evaluate advances in online learning and advance them for students.

Key Words: videoconferencing, web conferencing, technology, qualitative methodology, online research methods, video callings, nurses, health research

1. INTRODUCTION

→ The coronavirus COVID-19 pandemic has had a significant impact on the growth of several societal sectors, including business and education (at all levels) (Crawford et al., 2020). (McKibbin & Roshen, 2020). Due to the COVID-19 emergency, more than 1.5 billion kids and young people worldwide are impacted by school and university cancellations (Universities, 2020). UNESCO (UNESCO & IESALC, 2020) reports that 5.131.897 students in Ecuador are affected by COVID-19. However, the schedules for the schools in Ecuador's Amazonia, Highlands, and coastal regions vary.

1.1 MyChat as a Research Tool

→ Online meetings are one of the functions offered by the video conferencing service MyChat. Similar to similar services like Skype, MyChat enables real-time communication with people who are separated by distance using a computer, tablet, or mobile device. MyChat, on the other hand, differs from many other VoIP technologies in that it has a variety of extra benefits that increase its potential research utility. This functionality is especially crucial in studies when it's necessary to protect extremely sensitive data.

It is still to be determined whether VoIP tools like MyChat can enhance participants' and students' perceptions of qualitative data collection. Students' subjective evaluations of the caliber of video calling data are often used to compare the advantages and disadvantages of VoIP technologies as well as comparisons with in-person data collection. Research that assesses MyChat's usefulness as a platform for qualitative data gathering can help educate decisions regarding its potential use and solutions for overcoming platform- or context-specific challenges to enable productive collaborations between students and participants.

In this paper, we discuss how students and participants perceived and engaged in video chats with a geographically distributed group in India using MyChat. This study contributes to raising knowledge of the methodological choices available to qualitative students by evaluating the potential utility of MyChat for qualitative data gathering and offers relevant suggestions for further applications.

2. METHODOLOGY: -

2.1 *Languages Used :-*

In this project, various languages have been utilised. Python serves as the project's primary language. HTML, CSS, and JavaScript are the other languages used. For video-related reasons, Agora SDK was used. The Django web framework served as the project's foundation.
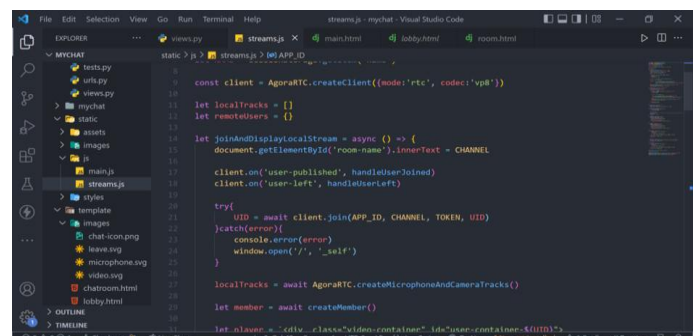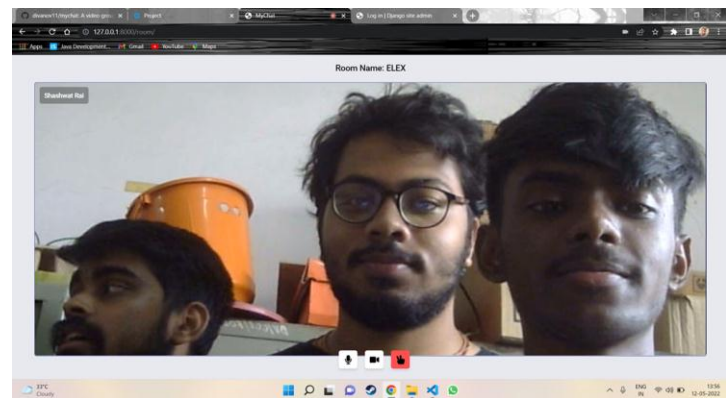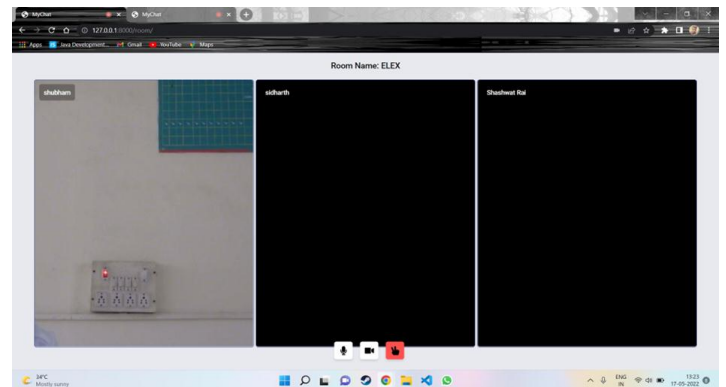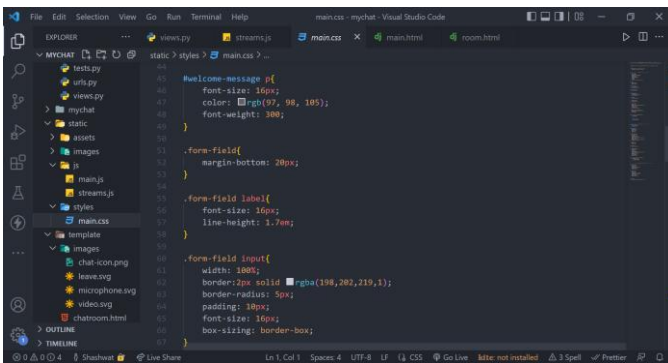
2.2 Overview

To start, we used HTML and CSS to construct the login page. Then, in order to give it functionality, we connected it to the JS. Then, to make the video call page function, we created it and used Django and Agora. Agora generates a token so that you may use their SDK. The SDK is then helped to function as intended by the JS file and Django.

In order to give consumers convenience, we gave it a video off/on, microphone off/on, and leave button choice.

Each participant is visible to the presenter, who has the power to exclude anyone at any time.

3. RESULTS:

→ Between March and June 2022, we had multiple video calls with 5 persons utilising MyChat. The calls lasted for 30 to 50 minutes. Everyone who took part was a student. Although some respondents were located in remote and regional areas, the majority of participants were concentrated in the city of Pune. The results are broken down into two areas that show the primary benefits and drawbacks of MyChat as seen by the participants and students.

4. Advantages of using MyChat

→ In general, students and participants agreed that using MyChat to conduct qualitative video calls was a good idea. The majority of participants (69%) chose MyChat as their favorite method above telephone, alternative video conferencing platforms, and in-person video calls. The following benefits of using MyChat for qualitative video calling were commonly mentioned by students and others who received the calls, reflecting logistical, technological, and impersonal factors: rapport, convenience, and simplicity.

4.1 Rapport

When compared to "nonvisual" communication channels like the phone or e-mail, many participants (69%) thought that MyChat was helpful in building and establishing rapport with the student. Similar to studies looking at the use of Skype for qualitative calling, participants frequently said that being able to see the student and react to nonverbal cues was crucial for developing rapport, forging connections with others, or for providing "a personal touch" (P1). In order to promote participation, trust, and natural, easy discussion, students frequently recognised the importance of being able to read nonverbal clues such gestures and facial expressions. In several instances, students noted, particularly when participants were accustomed to videoconferencing technology, the

ability to see the caller and react to body language promoted vibrant and engaging debate. The students thought that this made it possible to get precious information.

44 percent of those surveyed mentioned the screen on MyChat as a standout benefit that promoted more engagement and improved rapport. Specifically, because viewing and evaluating a number of screening instruments was a requirement for participation in the current study.

4.2 Convenience: access, time effectiveness, and cost-effectiveness

Participants and students frequently identified convenience as a primary benefit of MyChat, particularly in terms of accessibility to participants who were geographically far, cost effectiveness, and time effectiveness. Given their remote location, hectic work schedules, and potential of noisy or distracting working conditions, more than half of participants (56%) cited time effectiveness ("time is a precious moment for everyone...if this works, go this way," P8) as a major advantage. Participants also cited MyChat's potential cost-effectiveness as a result of lower travel costs and the absence of upfront setup fees for basic subscriptions. Students also cited cost savings from reduced or eliminated travel or venue hire charges as a benefit of using MyChat for data collecting, as well as the potential for greater flexibility in the timing and location of video calls.

Another significant benefit of MyChat over conventional face-to-face approaches was the potential for a wider reach for recruiting participants from regional and remote places (nationally and internationally). Students discussed how having access to previously inaccessible participants might enhance research by boosting the diversity of viewpoints represented and trying to maximize research effort when there are little resources available (e.g., time, money).

4.3 Simplicity and user-friendliness

When compared to webinar and alternative web conferencing services like Skype, more than half of the participants (56%) cited MyChat's simplicity and user-friendliness as its top advantages. Participants and students highlighted the platform's key strengths as being the simplicity of connection, intuitive functionality (straightforwardness), and robust but simple privacy and security options (such as the ability to manage user and call metadata, secure webinar options, and secure recording on local devices or remote servers). It was commonly mentioned how difficult it was to connect into Skype as opposed to

how simple it was for many participants to securely log into MyChat by utilising a common username.

4.4 Disadvantages of using MyChat

Although the majority of participants chose MyChat as their favorite way for video calling, the following factors were noted as platform obstacles, showing problems with call connection and audio or video dependability and quality..

4.5 Difficulty connecting

Despite finding MyChat to be simple to use and straightforward, the majority (88%) of study participants had some difficulties joining the session. Low Internet bandwidth, old technology, and/or limited webcam and/or microphone functionality were typical technical issues. Most of the time, participants rather than students encountered these issues, which probably reflected disparities in MyChat familiarity or accessibility to dependable, high-speed Internet.

We discovered that the prolonged cooperative problem-solving procedure implicated by the technical issues frequently had unforeseen benefits with regard to creating rapport. After spending a considerable amount of time resolving numerous problems during session setup, one participant expressed the following sentiment in comments: "We did it. It was an audition for someone else .Comparatively, another participant acknowledged the student for the opportunity to learn and said of the video chat, "It's all wonderful learning... Everything about it, you know, is useful to know since everyone does it. So, I'd like to thank you for the chance.

4.6 Call quality and reliability issues

After overcoming the first technical challenges in setting up the call, some participants (25%) reported problems with the quality of the video or audio. These occurrences could have been brought on by a shaky Internet connection, the use of outdated computers or mobile devices, or slowness caused by dropped calls or lost call connections. Although there were infrequent instances of poor audio quality, two participants reported audio garbled:

5. FUTURE SCOPE: -

→Regardless of where we are located, we may collaborate as if we were in the same room together, face-to-face. By distributing its workforce across different nations, cultures, continents, and time zones, these advances enable businesses who are working to solve the world's most pressing issues to hire exceptional people from all over the globe. In order to cope with the new reality of

social distance, COVID-19 has forced all enterprises to function remotely. When the pandemic is finished, everyone will return to work, but we won't operate in the same manner as before.

1. **Browser-based Video Conferencing Solutions**
   Free open source software called WebTRC offers one-click video calling from a web browser without the installation of any downloads or plugins. MyChat is a fantastic illustration of this modern technology. You may start an instant video conference, join a meeting, or arrange a call all from your web browser with just one click.

2. **Video Conferencing Rooms**
   Room-based video conferencing is made for large group meetings, much like 1:1 sessions. With the aid of large screens, sophisticated noise-canceling speakers, sensitive microphones, and wide-angle or rotating cameras, attendees and remote visitors can effortlessly converse once they enter the meeting space. These have made it possible for us to collaborate with folks from all around the world in an effortless manner. New high-tech hardware for enhancing communication is made accessible every day. When seeking for a unified communication service, IT departments may soon be able to sign contracts with one provider, one-stop shopping, by offering bundled packages of hardware and software.

3. **High-Quality Video and Audio**
   No matter how many great features a video conferencing tool has, customers will leave if the visual and audio quality are not up to snuff, which will significantly lower the program's adoption rate. Therefore, the ultimate goal for all providers and businesses implementing a new video conferencing solution should be high-quality video interactions.

4. **Natural Language Processing (NLP)**
   The user experience of video conferencing can be enhanced with the help of NLP. When AI is integrated, voice activation can be used to start or conclude a meeting or to tell participants to go silent when they are finished speaking. We should also anticipate real-time translations in video conferencing in the near future.

6. CONCLUSION: -

→ Due to its comfort, simplicity, security, interaction, special features, and capacity to foster personal ties between users, MyChat technology was frequently praised by students in this study. Compared to other widely used VoIP technologies, our findings imply that MyChat may be a very good platform for gathering qualitative video calling data. Although initial connection issues were frequently experienced, these problems did not appear to have an impact on how the participants felt about the video calling's quality or experience. We propose that the provision of written instructions prior to the video calling and/or practise sessions may lessen the occurrence of technological issues.

To our knowledge, this study is the first to investigate whether MyChat is appropriate for gathering qualitative data, and it is also one of the first to investigate how participants' experiences with web conferencing technologies have changed over time. To inform decisions regarding how such technology can effectively be used to supplement and enhance current qualitative methodologies, more research is required. However, MyChat and similar technologies are anticipated to make significant contributions to the conduct of qualitative research in the future given the capability of videoconferencing to offer greater flexibility and widen participation while keeping data quality.

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