Catering for Students' Well-being during COVID-19 Social Distancing: a Case Study from a University Campus

Shuhao Ma*
Marta Ferreira*
imshuhao.ma@gmail.com
hello@amartaferreira.com
ITI – Interactive Technologies Institute, LARSyS
Lisbon, Portugal

Hugo Nicolau
ITI / LARSyS, Instituto Superior Técnico, Universidade de Lisboa
Lisbon, Portugal
hugo.nicolau@tecnico.ulisboa.pt

Catia Prandi
ITI / LARSyS, Department of Computer Science and Engineering, University of Bologna
Bologna, Italy
catia.prandi2@unibo.it

Augusto Esteves
ITI / LARSyS, Instituto Superior Técnico, Universidade de Lisboa
Lisbon, Portugal
augusto.esteves@tecnico.ulisboa.pt

Nuno Jardim Nunes
ITI / LARSyS, Instituto Superior Técnico, Universidade de Lisboa
Lisbon, Portugal
nunojnunes@tecnico.ulisboa.pt

Valentina Nisi
ITI / LARSyS, Instituto Superior Técnico, Universidade de Lisboa
Lisbon, Portugal
valentina.nisi@tecnico.ulisboa.pt

ABSTRACT

COVID-19 gave rise to discussions around designing for life during the pandemic, in particular related to health, leisure and education. In 2020, an online survey aimed at university students (N=225) pointed the authors to various challenges related to well-being in terms of studying, socializing, community, and safety during the COVID-19 pandemic. These results shaped the crowdsensing-enabled service design of a mobile application, Tecnico GO!, aimed at supporting students' well-being. Considering the constant changing context caused by the pandemic, we present a study conducted during the academic year 2021-2022 and if/how the App's features continue to respond to student's needs. The evaluation of the App focused on 12 semi-structured interviews and think-aloud protocols. Findings cluster around three themes: a) Supporting the study experience; b) Building a sense of community; c) Improving gamification for better participation. Discussion elaborates on the student's perceptions around well-being during pandemics. Students' insights of the App are overall positive and highlight that crowdsensing-enabled design does contribute to learning, community and safety, but the gamification as currently deployed does not.

CCS CONCEPTS

• **Human-centered computing** → **User studies**; *User centered design.*

KEYWORDS

student well-being; design evaluation; social distancing; crowdsensing

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1 INTRODUCTION

As lockdowns were imposed globally to prevent the spread of COVID-19, nations and governments resorted to technology in an attempt to control the pandemic. In response to this threat, a plethora of mobile apps quickly emerged [15] for contact tracing, disseminating information, keeping track of symptoms, tracing the spread of the virus, monitoring the occupancy of locations, and monitoring social contacts [12]. However, these technology-based solutions had diverse user adoption rates [32]. Issues about privacy, vulnerabilities, and freedom of action were often raised by users [26].

In addition to the social and economic consequences of the pandemic, two years of imposed social distancing and other necessary restrictions have caused widespread impacts on physical and mental well-being [6, 25]. In Europe, well-being indicators dropped to unprecedented levels compared to the last 40 years [2]. As highlighted by [27], the COVID-19 pandemic impacted people physically, psychologically and socially [3]. Furthermore, the forced seclusion generated new routines, from remote socializing to remote working, learning and education at large. Effects from these routines had a noticeable environmental impact [30], promoted inclusion and accessibility and are likely to continue in the long-term. Moreover in our globally connected society , pandemics have become an increased risk compared to the past. Currently the World health Organization is alerting us about another virus commonly called Monkeypox [23].

*Both authors contributed equally to this research.

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In the spirit of learning from the COVID-19 lessons, this article reports on the work initiated from a design brief asking interaction designers and researchers at a Western major University to quickly develop an application to support students' safe return to campus. The team decided to adopt a human-centered design approach to better understand the students' needs and explore solutions in the context of the university campus and its day-to-day occupation. The research started with an initial survey conducted in October-November 2020 with the participation of 225 students. Results showed that while the majority of students were still coming to campus (self-study, lab classes and exams), they were missing a sense of community and the social aspects of everyday life on campus, such as study groups, lunches and coffee breaks, informal chats with colleagues and professors [18].

These results from the survey motivated a shift from the initial brief that focused on the logistics of how to bring students back to campus, to finding a way of serving students during this challenging period and helping them to re-create a sense of community and safe proximity. With this in mind the researchers embraced a user centred approach to design Tecnico Go! a crowdsensing-enabled service working to promote student's well-being during the COVID-19 pandemic. The App supports students in a number of ways: i) passive wifi and crowdsensing-enabled Map to help students being aware of occupancy and crowdedness of specific spots on campus; ii) intent-booking for study rooms and library spaces and room occupancy feedback; iii) gamification strategies to support community building [18].

In this paper, we present results of a case study focused on how Tecnico Go! caters to student's studying, socializing, safety, and community needs during the pandemic. The study (N=12) conducted in November 2021 asked the participating students to perform several basic tasks on the app and reflect on it while looking back at the past academic year. After the hands on experience with the app the participants of the study we asked to briefly discussed the App use and its current and future values in regards to life post pandemic. We conclude by discussing the results and proposals for future implementations that consider the constant changes of the current pandemic situation.

2 RELATED WORK

In this section, we present related work from two different angles: first, we analyze mobile applications related to the COVID-19 pandemic with a special focus on applications for an academic setting; second, we discuss research that aims to understand, support and cater for students' well-being in situations where social distancing is inevitable.

2.1 COVID-19 Apps

Technology, and in particular smartphone apps, have been playing an important role in the response to the COVID-19 pandemic. According to several surveys, most apps fall into one of the following categories: contact tracing, symptom monitoring, apps to support quarantine, and information provision. Collado-Borrell et al. (2020) analyzed N=107 apps in Western languages, concluding that the most common objectives were: providing general information about the virus (n=66, 64%), COVID-19 related news (n=53, 51%), record symptoms (n=53, 51%), and contact tracing (n=51, 47.7%), with n=99 (92.5%) of the apps involved in more than one purpose [12]. Ming et al. (2020) has shown that more than half the apps analyzed (total N=223) were providing information by health authorities: tracing or mapping (n=18,37.5%), and home monitoring surveillance (n=15, 31.3%) [22].

Arguably the most debated apps for COVID-19 are contact tracing apps. For example, Trace Together, the Bluetooth enabled Singapore Government's app, tracks people, and if they report having been infected, it notifies those who were in recent contact with them [10]. One of the major issues with contact tracing apps is that their effectiveness is highly dependent on a high use by the population. However, most countries have witnessed low adoption rates [28]. Since many of these apps do not have transparent data collection or processing mechanisms, and display limited user control/rights over the data [26], they have raised discussions related to data protection, privacy and security and freedom rights. Having this into consideration, we used privacy sensitive passive wifi technology, as a way to trace users across space without impinging on their privacy and personal data [24].

Moreover, during the first two years of pandemics students related apps flourished; in particular to aid safe campus attendance. A safe return to campus has been a major concern for most universities. These apps' focus varies, from contact tracing (e.g., [1]), self-report (e.g., [31]), campus pass (e.g., [8]), showing vaccination status (e.g., [9]) or check-in QR codes (e.g., [16]). These apps have not been immune to concerns regarding data protection and privacy [13].

To the best of our knowledge, these apps showed homogenized design concepts and none of them explored a holistic design combining technology-based solutions with students' well-being. We contribute to this gap with the design and evaluation of a socially minded student app. To overcome data and privacy related technological concerns, we aimed at empowering students to make informed decisions rather than developing a contact tracing app.

2.2 Well-being in Times of Social Distancing

The need to rapidly change social behaviours to safeguard healthcare systems during COVID-19, introduced sudden and drastic changes to our routines. Social distancing and further pandemic limitations operated in our society at different levels of discomfort, shock and consequent loss of well-being. These include shifts in physical activity, sleep, dietary behaviors, among other factors [25]. Reports have highlighted the negative psychological effects of the quarantines, including post-traumatic stress symptoms, anger, confusion, frustration, and boredom, also suggesting possible long-lasting effects [7]. These new stressors caused or exacerbated by the pandemic, from psychophysiological, to social and work related, have a direct impact on the mental health of the population [11].

For young people in particular, social relationships are paramount and deeply influence their perception of the world. The sudden pandemic restrictions resulted in the deterioration of their psychological well-being [13, 21]. However, the effects of the pandemic on younger people were unequal. Those who were faring better before the pandemic and with more resources continued to live better – the pandemic only aggravated preexisting inequalities

[14]. During the pandemic lockdown, students found themselves prohibited to gather, meet and socialize at school.

For younger generations, maintaining daily routines is paramount, as they provide opportunities for social rewards and a sense of belonging [17]. Routines are important psychological resources, particularly in times of uncertainty and stress [20]. During the pandemic, feeling socially connected has helped in lowering anxiety and depression [19]. Therefore, fostering a sense of community and assisting in safe proximity is important for the well-being of younger populations, including university campus communities.

Our previous study [18] also pointed to how students suffered from social distancing which kept them from taking part in their university's community life. Having this in mind, we set out to better understand our student population's past and current well-being needs during the pandemic, and how the App responded to those needs. Furthermore, this study would inform future iterations of the App based on updated feedback as the pandemic situation is volatile and would represent continuous challenges.

3 RESEARCH METHOD

The development of Tecnico GO! went through several stages as the app design was adapting to the dynamic changes and restrictions imposed by the COVID-19. The App implementation builds on the human-centered and service design approach, to design for students' needs during the time of social distancing [18]. The present study extends on [18, 29] and contributes to the evaluation of the design and development of the App. In this section, we give a general overview of the App and its features in order to situate the user study's goals, and then describe the evaluation protocol.

3.1 The Development of Tecnico GO!

The App was deployed on the basis of an original service blueprint conceived for students during the COVID-19 pandemic [18]. A partial implementation of the blueprint is deployed in Tecnico Go! and gives form to the basic features of the mobile application. The deployment efforts were interdisciplinary with contributions from HCI researchers, gamification and service designers, backend and front end engineers. The App is currently in its Beta version and was uploaded on Google Play and TestFlight – it is accessible exclusively through an invitation. In its current deployment, the App is functioning only for students who access the campus. The Beta version includes the following primary features: 1) Map; 2) Intent booking and room occupancy feedback; 3) Gamification strategy and community (Figure 1).

3.2 Research Question

This study aims to evaluate the students' acceptance and reactions to these functions. Moreover, the authors wanted to explore future development for the app and its possible adaptation to a post-pandemic use. In order to investigate the above, the study was guided by the following research questions:

- RQ1: How does Tecnico Go! perform in terms of catering to students' needs during pandemic (studying, socializing, community, safety)?
- RQ2: How might alternative features help foster students' well-being during/after the pandemic?

3.3 Participants, Researchers and Resources Involved in the Study

The evaluation protocol was based on semi-structured interviews and a think-aloud protocol. The protocol was designed as a collaborative efforts between all authors, and conducted by two researchers (the first two authors) in a lab-like condition: 1) A room with a table and a mobile device with the app installed at disposal of the participant; 2) researchers would record the device screen, the interview, and take notes during the participants performance of the tasks. University students enrolled in the 2020-2021 academic year were recruited via snowball sampling, inviting them to recommend other colleagues to grow our set of participants (N=12). The average length of the study was 35 minutes.

3.4 Interview Procedure

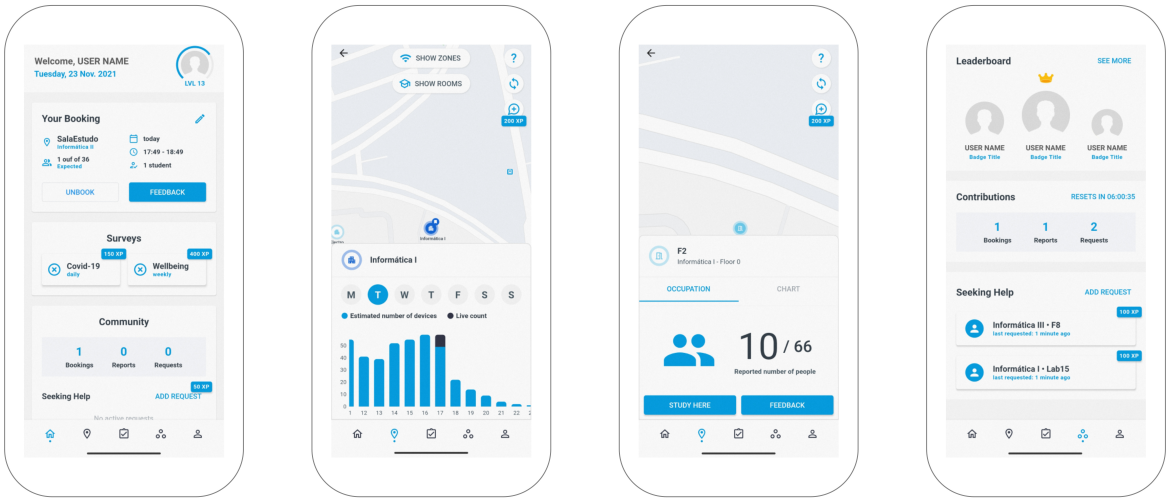
First, the researcher welcomed the participant, explained the study and signed the agreement. Second, the interview started with eight questions to set the context of their experiences during the academic year 2020-2021. These questions focused on the modality of classes they experienced. Third, the participants were asked to perform three sets of tasks in the App, adhering to a "think-aloud" process of evaluation. This process was organized through the presentation of a series of usage scenarios, asking participants to finish the tasks on the mobile device and comment out loud on their actions and impressions. Three sets of tasks covered all functions deployed in the App: intent booking, navigation of the campus through a customized map, feedback, and the gamification features. Subsequently, we finalized the study by discussing the App's impacts in relation to studying, socializing, community, and safety needs. Finally, to counteract the possible bias and pleasing effect of the in-person interviews, we surveyed participants' satisfaction with the App features. The survey consists of nine Likert scale questions (Figure 2-1) and one multiple-choice question (Figure 2-2). In the next sections, we describe the findings in detail, discuss them and illuminate the path for future work.

3.5 Data Collection and Analysis

The first two authors transcribed and initially analyzed the interviews and think aloud protocol data through grounded theory and thematic analysis [5]. The results were revised by them and discussed with the last author. Divergences were clarified, and findings were debated and finalized. Lastly, the final Likert survey results (Figure 2) were discussed in relation to the qualitative findings.

4 FINDINGS

When asked about the 2020/21 academic year, it emerged that most students (n=9) appreciated the online teaching aspects for its practicality and for allowing better time management. Two students mentioned appreciation about the lectures being recorded. One student mentioned that they felt more focused with this modality, while four others highlighted difficulties in focusing and in clearly understanding colleagues or instructors. The majority of the interviewees (n=10) felt alone, missed being with their colleagues in person, or felt online classes were impersonal. The balance of positives and negatives of online classes – practicality versus lack of connection with colleagues – was a recurring theme. Regarding



1) Intent book 2) Campus Map: Buildings 3) Campus Map: Rooms 4) Community

Figure 1: The main App Interfaces: 1) Intent book and room occupancy feedback: Students can let the system know of their intent of traveling to campus via intent booking or give feedback on room occupancy; 2-3) The campus Map: It contains three layers of information: i) the location of the wifi sensing technology (router) on campus; ii) the number of devices detected by the wifi routers at any specific location, presenting the real-time traffic and history trends; iii) the occupancy data, which is a result of crowdsensing report of intent booking and room occupancy feedback; 4) Gamification strategy and community: Beta version deployed the leaderboard and badges placeholders in the community page. It contains three sections: i) The leaderboard that covers all registered students and displays students' names, photos, badges, and levels; ii) The contribution board that shows the daily counts of all activities (bookings, reports, and requests); iii) The list of help requests, for example, request for reporting specific rooms occupancy.

in-person attendance during the 2021/22 academic year, students reported mixed opinions. Four students felt in some way uncomfortable when attending classes or labs in closed spaces (e.g., lack of social distancing or the unsafety related to using public transportation during the commute). Nevertheless, the majority (n=8) have no particular concerns about going to campus.

The rest of the findings from the interviews were then organized around three main themes: i) Supporting the study experience; ii) Building a sense of community; iii) Improving gamification strategy for better participation.

4.1 Supporting the Study Experience

In the interviews, all participants (N=12) reported the App being helpful because of the intent-booking, map of the campus and class or study room or occupancy features. Participants found the intent-booking and room occupancy features useful in finding a safe place to study (not overcrowded) (N=10). The main reasons for using these features would be saving time, safety (avoiding crowded places, keeping social distance), as well as organizing study sessions alone or with colleagues. Most students mentioned the App could support study groups by checking the room occupancy and booking an empty room (N=7). Interestingly, three students deeply appreciated the campus map (independently from other features), because of the lack of familiarity with the campus facilities. In general, students valued the App's support in times of pandemics and would find it useful in the post-pandemics and new-normal times as well.

Lastly, students' responses from the Likert scale data show that all would agree to use the App to guide their campus visits and to organize personal and group study through the intent booking features (Figure 2-1). Meanwhile, students showed their preference through the multiple-choice question: booking is the most welcome feature (Figure 2-2).

4.2 Building a Sense of Community

We now present the results regarding the students "building a sense of community" according to their comments to three proposed scenarios: i) provide feedback on a room occupancy when personally there; ii) respond to the feedback request from the community; and iii) give feedback of any rooms on the campus map (even if not there at that moment).

Most students (N=10) expressed their willingness to contribute feedback in regards to the room they are currently occupying, while two mentioned that more incentives would engage them more. After experiencing the App, most students argued that crowdsensing the occupancy of the rooms is a form of helping each other and organizing study groups, and contributes to their sense of community at campus (N=11). One student, on the other hand, lamented that the anonymization of the feedback process contributed to a sense of alienation from their colleagues. Most participants (N=9) mentioned that they would not contribute to requests about rooms they were not in, unless they passed by the requested room or had enough spare time to go there and check. Furthermore, two students usefully raised concerns regarding the accuracy of the feedback: 1)

1. Students' review in Likert scale about using the App to guide their campus tour (N=12)

#	Likert Question	Mode	Mean	Average
1	Would you enjoy using the App as an overall reference to guide your trip to campus?	5	5	4.58
2	Would you enjoy using the intent book before visiting the campus?	5	5	4.17
3	Would you voluntarily report the number of people in different areas on campus to help the community of the App?	4	4	4
4	Would you enjoy adding requests to know the occupancy of a classroom to help you plan your visit to campus?	4	4	4.33
5	Would you enjoy the leaderboard feature in the community?	4	4	3.67
6	To what degree do you think the App helps you make decisions when studying?	5	5	4.67
7	To what degree do you believe the App can help you socialize on campus during the Covid-19 pandemic?	3	3	3.42
8	To what degree do you believe that the App can promote a sense of university community during COVID-19 Pandemic?	4	4	4.17
9	To what degree do you believe that the App can improve the sense of security during the period of social distancing?	5	5	4.58

2. Students' choices in what features make them enjoy the App

Rank	What do you enjoy in the App?	Number
1	Booking a classroom to study	11
2	Requesting feedback for the occupancy of a room	10
3	Report the occupancy of a classroom	7
4	Checking the campus map	7
5	The progression of level up and catching up with peers on the leaderboard	4
6	I am not committed to using any of the features	1

Figure 2: 1: Results of the Linkert survey (scale from 1-5) – Using the App to guide campus visits is the major intent and the leaderboard gets few adoptions; 2: Result from multi-choice questions about their preference on features – Booking and requesting information are most welcome features, reporting and campus Map are also adopted by most students.

quality and quantity of feedback depends on the participation rate; 2) issues may arise with false reports and rapid foot traffic.

From the Likert scale questionnaire and the multiple-choice question, students also confirmed their enthusiasm to send or report feedback on the room occupancy. Giving feedback and requesting feedback emerged as a primary force in creating a sense of students' stewardship, community and proximity to colleagues (Figure 2).

4.3 Improving Gamification Strategy for Better Participation

Regarding the gamification features of the App, five students believe that gamification could motivate and engage people to participate in the crowdsourcing of the data and increase the use and adoption of the App. Four students felt that the gamification features would instigate competition, and were turned off by it. When answering the multiple-choice questions, only four students enjoyed the leaderboard feature in the App, and the Likert scale question also showed that most students considered that the leaderboard was not attractive enough (Figure 2). Several students highlighted that the mindful and consented exposure of private information could help the gamification strategy, and build and reinforce the student's sense of community. Suggestions about adding networks of friends and coursework groups and allowing students to display information (e.g., study status, coursework tasks, faces, and names) were voiced often.

5 DISCUSSION

As a result of the analysis of the collected user centered data, a three-layered declination of the sense of students' well-being emerged, unfolding students' concerns and issues regarding i) learning, ii) community, and iii) safety. We discuss well-being against these three concepts while assessing the goals of what the App had set off to accomplish.

5.1 Well-being and Learning

One of the purposes of the App was to assist students in the safe use of the campus facilities. As mentioned in 2.2, COVID-19 safety measures affected students' general sense of well-being, and as a consequence their learning experience. Loneliness and alienation affected motivation (Participant G: "Sometimes I procrastinate (...). And that would reflect on my grades."), productivity (E: "Sometimes it is hard to keep concentrating on the lessons"; J: "Making me

come here to IST makes me want to work more. It has a factor on motivation, for sure."). They focus on their studies requirements diminished during lockdown, especially for those who shared house or study spaces (F: "I get more distracted at home."). It emerged that physical proximity with colleagues and access to the facilities enhanced their academic performance.

The overall impersonality of online classes was a recurring theme in the interviews (J: "I can be comfortable at home, but it does have the disadvantage of impersonality."). However, most students also mentioned positive aspects of this modality (F: "It was good because we have more power to organize our time"; G: "I could manage my time in a better way. It was very practical."; L: "I like it because we can stay at home and we can sleep a little bit more."). Hybrid formats of learning seem to be the way forward (B: "But I feel a little alone. I'd prefer to have a hybrid way."; G: "I love having classes online, and I would like to have that same hybrid method.") Students' diversity and consequent difference in needs and preferences, highlights the needs of personalization of the university system (A: "I really want this [in-person classes] to keep being like this."; B: "Prefer to stay at home. I really like the idea of not coming and not spending the time in traffic."; L: "A mix of the two. I missed having classes with our colleagues. But classes at home seem good, sometimes."). The COVID-19 pandemic highlighted the need for flexibility of the system in order to include and satisfy a broader range of student populations. Solutions can integrate the advantages of in-person learning, group studies, and face-to-face meetings, with the advantages of remote classes and distance learning. While this seems to be the future of education, further studies and tools will need to illuminate its practice.

However, considering emerging students needs and the continuous uncertainty of the current pandemic situation, assisting in the safe use of campus facilities is still relevant. According to our study, most of the participants valued the App and its offerings, during pandemics but eventually in a new-normal situation as well. The App would help them make decisions when visiting campus, supporting their academic performance and mental well-being by allowing safe access to resources. We are still living through uncertain times, new viruses keep appearing and our global societies are increasingly prone to pandemics [4, 23]. Unpredictable renewed restrictions might leave students suddenly isolated again. Having safe access to study and socializing facilities is crucial for their well-being.

5.2 Well-being and Community

The majority of the students interviewed mentioned missing meeting their colleagues in person during lockdown (G: "I used to see my friends every single day and we are very good at pushing each other to study."). Some students expressed feeling alone (E: "...kind of miss the opportunity to meet with my colleagues and talk to them."), and not having a more personal university experience (I: "it was missing a bit of human interaction with people because I came from Italy. I didn't have anyone here. I was expecting to have some interaction."). These findings echo Deznabi et al. [13], about how younger generations suffered during lockdown and how social connections help in lowering anxiety [19]. The challenge comes in supporting the need for safety with people's need for social interactions. As pandemic restrictions are eventually resolved, these needs could still be valid for vulnerable communities who might be disadvantaged in personal and independent displacements. Moreover, freshmen and Erasmus students never experienced life on campus. For these groups, the need to orient themselves (physically and educationally), find mentoring and friends was exacerbated by the pandemic safety measures (F: "I didn't know anything on the campus because it was my first year here."). Students in general expressed preference in being allowed to decide for themselves to visit campus or not. Some of them prefer to be with colleagues even when restrictions are in place.

Most students found the App helpful in building a sense of community – mostly by helping their colleagues through the crowdsensing feature (E: "Yes, the feature of helping people on the capacity of the room."; K: "It's this kind of app that incentivizes people helping each other, help the community."; J: "We are connected very easily through the help and the ask feature."); and the support in organizing study sessions on campus (D: "I could study more with my colleagues and by being on campus, you meet more people."; I: "If I want to gather people to study, I can do that.").

Through the survey, most of the students confirmed the potential of the App in supporting a sense of community. However, most of them lamented an absence of socializing features, including the restrictions of anonymity, friends' and colleagues' networking, etc. The students' suggestions pointed towards enhancing the App's features related to community. From the study results, it has become apparent how important this sense of belonging is in times of uncertainty. The App we designed shows promising signs in terms of assisting our university population with well-being through community building. The passive wifi and crowdsensing-enabled map allows for a better experience with the campus facilities for first-time users, and the intent book and occupancy feedback features support safe social practices for our student community from a bottom-up initiative.

5.3 Well-being and Safety

Interestingly, when asked about "concerns related to visiting campus", only three students mentioned COVID-19. Motivations for the concern were overlooked social distancing and crowded rooms (D: "I think we went back to normal a little bit too fast, and we are doing everything as before, just with masks."; E: "The rooms were really full sometimes."). One student even mentioned feeling safer last year since lockdowns were in place and people paid more attention to social distancing (C: "we can see classes sometimes full of people and you cannot have a safe distance."). Other answers ranged from non-COVID-19 concerns to mundane issues such as transportation and course organization (F: "don't have concerns with safety, but the situation is confusing with organization, the classes..."). Nevertheless, even with restrictions in place, they still need and wish to go to campus (K: "I think we don't have to be living in fear.").

When asked about COVID-19 related "challenges", seven students focused on routine issues that were present before the pandemic (C: "Parking is really expensive.") while the others said they had no challenges. Students highlighted safety challenges mainly

in going to and navigating the campus premises. Issues ranged from commute, social distancing, transportation, and parking (using private cars because of safety concerns); one mentioned room occupancy. In general, students do not mention COVID-19 as a challenge but as a concern. This might point towards the practical nature of COVID-19 restrictions as most students mentioned the current measures in place on campus as sufficient to feel safe and willingly visit campus (J: "I don't mind the possibility of catching COVID. I'd rather have that possibility but still come."; L: "Safe, because there are many alcohol [dispensers] everywhere.").

One of the main goals of the App was to empower students to decide by themselves when to visit campus on a daily basis and feel safe on their necessary campus visits (such as mandatory presential laboratory classes and exams). The crowdsensing collaborative actions to improve a sense of safety was implemented to fulfill this goal. The Likert scale survey shows that most of them think the App would improve their sense of safety (Figure 2-2).

The safety situation related to the COVID-19 pandemic in Europe improved during the summer and part of Autumn of 2021, and continued to be stable when we were conducting the interviews. However, at the point of writing this paper, despite the Western world is increasingly vaccinated, the situation is still unpredictable as case numbers have risen considerably under what is called the sixth wave of COVID -19. Moreover, a new alert is materialising these days peaking through the Variola virus alert [23]. Safety is still essential and is promising to be a crucial topic in the foreseeable future. This study proved timely for us to embrace students' concerns about safety coupled with their needs to come to campus to attend mandatory classes, labs, and exams, study together safely, and feel part of a like-minded community. In future work, we intend to keep developing our App to reinforce safety features, always considering students' needs for collaboration and community.

6 CONCLUSION

In this paper, we point to the importance of human-centered design in developing technological solutions for pandemic-related problems. We illustrate this premise through the presentation and evaluation of an app developed through this approach and responding to the needs of a university population. We presented the qualitative results from 12 semi-structured interviews and think-aloud protocol. We focused on the human-centered features of the App designed for satisfying students' needs and wishes during the COVID-19 Pandemic. The results show that students tend to recognize the App's value in learning processes, community building, and the sense of safety, in particular surrounding the features of intent booking and room feedback. Students question the rationale of anonymized feedback and less information exposure and voiced their socializing needs. Also, the deployed gamification strategy is well worth further research since it lacks adoption and attraction. This study proved itself timely in supporting our intent to benefit the student community well-being, fight isolation, and promote safety in educational settings. We foresee keeping improving the app to benefit our student community and university students at large.

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