

# Reframing Third Places: Environmental Changes of Merging Places During COVID-19

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## Abstract

The ubiquitous nature of technology is changing the way humans interact with interior space and redefining the third place, venues where individuals gather for socialization. During the COVID-19 pandemic, the fusion of physical and virtual space led to an overlapping of the first place (home) that served as the physical host for the virtual second (work), and third (social gathering) places. Most critically, the first place (home) became a proxy for second and third place experiences as we started connecting with the outside world, albeit virtually. The goal of this study was to determine the extent that individuals relied on technology to meet their socializing needs in response to COVID-19, verify if individuals are altering their environment as a result of the pandemic and whether these changes align with physical third-place characteristics, and inform interior designers on how to intentionally design physical space in ways that include virtual experiences. The researchers employed a mixed-methods approach by gathering data from an online survey, incorporating closed-ended and open-ended questions, using two different convenience sampling approaches ( $N = 229$ ), and asking participants to submit photos to support their responses. Results illustrated that during the pandemic, virtual environments integrated with the home and became a substitute for physical third places. Four themes identified the modifications in physical space that occurred because of COVID-19 as individuals accommodated the merging of their home, work, school, and social places. Insights regarding the design of successful physical spaces that embrace virtual experiences are provided.

## INTRODUCTION

For decades, third places, traditionally defined as a social environment away from home (the first place) and work (the second place), have been locations that increase the frequency of social opportunities and support for individuals. Concerned over the trends in late twentieth-century American culture, sociologists Oldenburg and Brissett (1982) proposed the third place as a venue promoting belongingness and the building of social capital. They argued the sociability afforded in third places might remedy the disappearance of public life due to societal changes.

The ubiquitous nature of technology, however, is changing the way humans interact, redefining the third place. A conversation between friends starts in the coffee shop, continues over Zoom or Facebook Messenger, or gets posted on Instagram, hashtagged, and then is seen by others. The third place is suddenly extended from the physical coffee shop to the virtual space of social networking sites (SNS). The distinction between virtual and physical space has become blurred, especially since COVID-19. According to D'Souza and Lin (2015), virtual behaviors add another layer to place experience through “augmentation or evolution rather than substitution” (p. 376). Physicality remains relevant but is complemented by virtuality, and as illustrated in the example above, virtual space does not replace physical space but rather merges with it.

During COVID-19, the integration of physical and virtual space led to a merging of the first, second, and third places, as the first place (home) served as the physical host for the virtual second (work) and third places (social gathering locations). Despite this, there is little in the interior design literature on the use of the virtual as a social venue in the physical environment that occurred during the pandemic. Augustin (2014) described a deficit in the literature concerning spaces where

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people can be physically present while virtually connecting with others. Misra and Stokols (2012) also added, “Design of public places should be guided by the goal of optimizing rather than compromising the fit between virtual and real settings so that people can participate in both kinds of settings effectively and simultaneously” (p. 320).

The use of the virtual in the physical environment has become imperative during the COVID-19 pandemic. Spending time on social media may have been the safest way to communicate with others and was an important avenue to build and maintain social capital (Pitas & Ehmer, 2020). However, few studies have addressed the user experience during the merging of physical and virtual environments. Post-pandemic, interior designers need to consider recommendations that accommodate the use of virtual environments within physical spaces, particularly since increases in technology use are expected over the next 10–20 years (Alsop, 2022). Thus, the purpose of this study was to determine the extent that individuals relied on technology to meet their socializing needs in response to COVID-19, verify if individuals are altering their environment as a result of the pandemic and whether these changes align with physical third-place characteristics, and inform interior designers on how to intentionally design physical space in ways that include virtual experiences.

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## LITERATURE REVIEW

Oldenburg (1999) designated venues, such as pubs, cafés, and coffee houses as third places for “the regular, voluntary, informal, and happily anticipated gatherings of individuals beyond the realms of home [the first place] and work [the second place]” (p. 16). Associated with Habermas’s (1989) notions of the public sphere as a setting for free political discourse and public conversation, the term has become a common descriptor for the “freewheeling” social gathering places where “none are required to play host” (Oldenburg & Brissett, 1982, p. 266). Historically, third places provided individuals opportunities to socially connect with a “diversity of human beings” and build reciprocal support networks that meet their belonging needs. Scholars have also defined design elements frequently found in physical third places (Vaux, 2015; Waxman, 2006). Vaux (2015) identified physical attributes that furthered a sense of community and place attachment within third places, while Waxman (2006) discovered five features common to physical third places that contributed to patrons’ place attachment, including cleanliness, aroma, adequate lighting, comfortable furniture, and views.

Literature specific to interior design has recognized the merging of physical and virtual experiences in spaces where individuals simultaneously engage in other “interior” environments, such as social media. D’Souza and Lin (2015) argued that physical and virtual spaces are no longer dichotomous. Augustin (2014) called for research to explore the implications of integrating physical and virtual environments. Vaux and Langlais (2018) advocated for interior designers to consider their role in designing and assimilating virtual spaces into design problem-solving. While some researchers have examined connections between “real” and “virtual” environments (Lawson, 2004; Lindsey & McLain-Kark, 1998; North, 2008), others have addressed the use of virtual reality (VR) and augmented reality (AR) in interior design (Izani Abidin et al., 2020; Jin et al., 2021; Kalantari & Neo, 2020; Siltanen et al., 2013).

In addition, scholars have studied social media in relation to interior design. Izadpanah and Gunce (2021) considered the use of social media to increase awareness of interior design for non-designers. Others have argued that social media can serve as a tool for marketing and provide a positive impact on interior design culture (Eriksson et al., 2019; Nummelin, 2015). Significantly, Tehve (2021) explored how social media, specifically Instagram, has transformed physical space and provided an alternative spatial form.

As Perolini (2014) advocated, interior designers need to think about interior space beyond the physical space within four walls. Even though an individual may be “elsewhere” in cyberspace while engaging in social media, the engagement occurs within a specific physical environment with the tactile and visual experiences of the screen and/or keyboard. Understanding the dichotomy of being in two places at the same time (McArthur, 2016) and how that impacts the use and motivations of participation in virtual third places is important for interior designers to consider. The pandemic intensified this need and highlighted the necessary merging of first, second, and third places (home with work and social environments). To emphasize the use of the virtual in physical places and the unique event of the merging third space during COVID-19, it is important to review the literature on virtual third places and social capital.

## EVOLVING SOCIALIZING TRENDS AND VIRTUAL THIRD PLACES

Researchers, including Oldenburg (1999), have extended third place designation to environments beyond the local bar and coffee shop to bookstores, cancer support groups (Glover & Parry, 2009), retirement communities (Campbell, 2014), festivals (Hawkins & Ryan, 2013), and even homes (Purnell, 2015). During COVID-19, as traditional third places were closed, the home became a substitute third place as people connected through video chat, social media, and other virtual venues.

Researchers have found virtual environments serve as third places through the development of social capital (Ellison et al., 2007; Phua et al., 2017; Sinclair & Grieve, 2017) and that social media contributes to social capital, that individuals most commonly use social media to comment on relevant information with existing acquaintances, and that keeping in touch with people they already know outweighs individuals' use of social media to meet new people (Ellison et al., 2007; Kujath, 2011). In addition, research has shown that frequent use of computer-mediated communication can strengthen existing relationships, increase face-to-face communication, augment closeness with family and friends, and extend social circles (e.g., Kujath, 2011). Given the relationship between third place and social capital, researchers have argued that SNS can serve as virtual third places (Ancu & Cozma, 2009; Wright, 2012).

Many scholars have demonstrated the viability of virtual environments as third places (Anacleto et al., 2017; Langlais & Vaux, 2022; Soukup, 2006), including online games (Ducheneaut et al., 2007; Steinkuhler & Williams, 2006) and Twitter (McArthur & White, 2016). Studies have revised and/or expanded Oldenburg's original third-place characteristics to include

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virtual third places (Memarovic et al., 2014; Vaux & Langlais, 2021) where individuals meet their belongingness needs by maintaining current relationships, establishing new relationships, communicating with others outside their geographic location, and passively viewing others' interactions. McArthur and White (2016) posited that Twitter chats are a contemporary means of providing a third stop between work and home. Vaux and Langlais (2021) described how Facebook

met and extended third place characteristics and consequently revised Oldenburg's original third place characteristics. The expansion of Oldenburg's criteria became necessary as individuals rely on technology for social interactions previously met by physical third places. The result was nine traits based on Oldenburg's (1999) definition, with two remaining the same (*conversation* and *playful mood*) and seven others revised to encompass both physical and virtual third place environments (Vaux & Langlais, 2021):

*Relationship Initiation and Maintenance:* Relationships can be built or strengthened through a physical or virtual third place environment.

*Equalizer:* The environment provides access and opportunities to overcome geographic limitations and create relationships with others.

*Communication Main Activity:* Conversation is the primary activity of a physical third place per Oldenburg (1999), which remains true when including virtual third places.

*Active and Passive Engagement:* Individuals can participate through observation or active socializing in the environment.

*Reciprocity:* There are mutual benefits from social interactions in the environment, even if it's people watching (see also Waxman, 2006).

*People Over Place:* The focus is on social connection rather than specific attributes of the physical environment or the virtual platform.

*Playful Mood:* Third places are environments that provide opportunities for humor and wit, which are common in social interactions whether virtual or physical.

*Cognitive Separation and Reprieve:* The venue is used to disconnect from stressful, isolating, or monotonous environments.

*[Virtual] Third Place Within a Third Place:* Individuals can access a virtual third place while being in a physical third place.

Langlais and Vaux (2022) expanded this research by examining whether four different social media platforms (Facebook, Instagram, Snapchat, and Twitter) met the evolving third-place characteristics explained above. First, a scale was created and validated using confirmatory factor analysis, identifying a nine-factor solution with consistent internal reliability (Cronbach's alpha ranged from .89 to .96). Confirmatory factor analysis was used since the evolving third place characteristics were already derived from the theoretical and empirical literature. Using this scale, the researchers found that Facebook most closely met the evolving characteristics, followed by Snapchat, Instagram, and Twitter.

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Social media has altered how individuals form and maintain interpersonal relationships (Kujath, 2011; Misra & Stokols, 2012), build community (Soukup, 2006), and strengthen social capital (Ellison et al., 2007), all of which have become more important with limited face-to-face interaction during COVID-19 (Vaterlaus et al., 2021). Low and Smart (2020) argued that virtual environments became a substitute for physical third places during the pandemic. Throughout the pandemic, the affordances of SNS have increased the ways individuals can interact with people they know and even people they do not know (Tehve, 2021; Vaterlaus et al., 2021) contributing to the merging of the home, work, and third place. Although many studies have illustrated how individuals rely on technology to promote and support social interactions (Chen & Lin, 2014; Jung & Sundar, 2018; Misra & Stokols, 2012), additional changes due to COVID-19 (face masks, social distancing, working from home) have accelerated the reliance on virtual environments for social connection. Despite the evidence in the literature, physical spaces have not reflected this relationship.

A need exists for interior designers to understand the use of the virtual in the physical environment as individuals interface the two in their daily lives. The impact of the COVID-19 pandemic on social connection and capital has made this need imminent as individuals' first, second, and third places have merged. It is important to note that this call has been made previously (e.g., Augustin, 2014; D'Souza & Lin, 2015) and still has not been adequately addressed in the literature.

## METHODS

The purpose of this study was to (1) determine the extent that individuals relied on technology to meet their socializing needs in response to COVID-19, (2) verify if individuals are altering their environment as a result of the pandemic and whether these changes align with physical third-place characteristics, and (3) inform interior designers on how to intentionally design physical space in ways that include virtual experiences. To address this goal, the researchers employed a mixed-methods approach by gathering data from an online survey, incorporating closed-ended and open-ended questions, and providing opportunities for respondents to submit photos to support their answers.

## PROCEDURES AND PARTICIPANTS

Participants were recruited through two sampling approaches from August 2021 to October 2021, which coincided with renewed COVID-19 safety protocols given recent surges in the delta and omicron variants (Le Page, 2021). First, undergraduate students were recruited through convenience sampling from two universities (one in the southeast U.S. and the other in the Midwest U.S.). Students received information about the study through a post on their Canvas course page (www.canvas.com) and received extra credit for their participation. Snowball sampling was subsequently administered by requesting that participants who completed the survey share the questionnaire with their friends to achieve a more representative sample. Second, participants were recruited through posts on local exchange pages on Facebook using convenience sampling. Using these approaches, 229 individuals volunteered to participate (85.2% were recruited from universities). To access the survey, a link was included in the social media and Canvas posts. Once the survey was selected, the informed consent was presented; at the bottom was a button that read, "I Agree." Those who clicked this button consented to participate in the Institutional Review Board (IRB)-approved study and were granted access to the questionnaire. Of those who participated in the study, 221 responded to at least one open-ended question (96.5%), and 70 included photos of their merged space (first, second, and third place; 30.6%). Individuals in this study were predominantly female (60.7%; 38.4% were male, and 0.9% identified as non-binary) and approximately 20.96 years old ( $SD = 5.05$ ; range: 18–55). The ethnic composition

in the sample was 62.4% White/Caucasian, 13.5% Hispanic, 11.8% Black/African American, 5.7% Middle Eastern, and 6.6% other. The majority of participants were students ( $n = 195$ ); the remaining participants did not offer information about their occupations.

## DATA COLLECTION AND MEASURES

Participants answered quantitative and qualitative questions. Qualitative questions included, “How did your physical environment (i.e., your home, school, or work) change as a result of the COVID-19 pandemic? Please provide as many details as you are able.”; “How did your communication (either face-to-face or virtual) change as a result of the pandemic?”; “Describe the physical environment at your home in which you spent the most time socializing with others during the COVID-19 pandemic; provide details concerning the physical environment, including furniture, windows, etc.”; and, “What are some of the changes that you have experienced in your physical environment and/or social experiences that you believe will continue even after the pandemic?” Question two aimed to address the first part of the purpose statement, while the remaining questions addressed the second and third portions. Participants were prompted to upload a photo of the space where they socialized: “Please submit a photo of the room where you spend the most time socializing with others.” The photos provided another data source to triangulate with the qualitative responses, thus increasing the validity (Close, 2007).

For quantitative data, participants answered the 34-item Evolving Third Place Questionnaire (Langlais & Vaux, 2022). This measure includes the nine subscales representing the evolving characteristics of third places previously described in the literature review: relationship initiation and maintenance, equalizer, communication as main activity, active and passive engagement, reciprocity, people over place, playful mood, cognitive separation and reprieve, and (virtual) third place within a third place. However, each item was adapted to consider the COVID-19 context. Example items included, “How often do you use virtual environments to engage in conversations with others during the COVID-19 pandemic?” and “How often do you use virtual environments to share something humorous with others during the COVID-19 pandemic?” Responses ranged from 1 (*never*) to 7 (*all the time*). Internal consistency was acceptable for this study as the Cronbach’s alpha for each subscale ranged from .68 to .92. Quantitative data were then analyzed using one-sample  $t$ -tests, using 4.0, the median of the scale. This  $t$ -test was selected because different groups were not being compared and to adequately determine if the frequencies of these characteristics occurred more than average (i.e., 4.0 on the Likert scale), which is a recommended approach when there is no comparison group and the goal is to compare with the target population (Ross & Willson, 2017).

Qualitative data were analyzed to identify common themes using an inductive thematic analysis informed by grounded theory (Charmaz, 2006). First, each author became familiar with the responses to the four open-ended questions from the online survey. Through this process, similar responses were coded to represent a theme. Next, each author compared and contrasted their codes to arrive at a consensus. These codes were used to sort and analyze the data. To reach a consensus, codes were merged, subdivided, or eliminated (if necessary) to ensure a framework that best represented the data. Each of these steps of qualitative analysis is consistent with the guidelines proffered by Creswell and Plano Clark (2011). Once these codes were finalized, both authors reviewed and analyzed the photos to confirm the codes previously determined from the qualitative data represented in the images. As recommended by Creswell (2007), inter-rater reliability was calculated by randomly selecting 25% of participant responses and identifying themes, resulting in strong inter-rater reliability (91.4%); the same process was used when analyzing the photos, with an 85.0% inter-rater reliability.

To address the third part of the purpose statement, the researchers compared the themes that emerged from the qualitative data to the quantitative results. This approach allowed the researchers to effectively merge and triangulate data, review the quantitative results, and apply them to the qualitative themes to provide further insight into the study findings and an indication of directionality.

## RESULTS

### EXAMINING THIRD PLACE CHARACTERISTICS

First, the researchers conducted a one-sample  $t$ -test examining the means of all nine evolving third place characteristics to determine the extent individuals merged their first, second, and third places during the pandemic (see Tables 1 and 2). Seven third place characteristics were statistically higher than 4.0, suggesting that the three places merged and the home effectively



**Table 1.** Descriptive characteristics of study sample ( $N = 229$ ).

Variable	Mean or frequency
Age	20.96 (5.05)
Gender	
Female	139 (60.7)
Male	88 (38.4)
Non-binary	2 (0.9)
Ethnicity	
White/Caucasian	143 (62.4)
Hispanic	31 (13.5)
Black/African American	27 (11.8)
Middle Eastern	13 (5.7)
Other	15 (6.6)
Sample	
University	195 (85.2)
Facebook	34 (14.8)

Note: Quantitative data is presented with means and standard deviations in parentheses. Categorical information is presented by counts with column percentages in parentheses.

tively consistent, resulting in one of two trends.

First, interactions previously occurring face-to-face shifted to an online context. For example, one 20-year-old female reflected on the need to adapt the way she socialized to meet belongingness: “Instead of hanging out with my friends in person during COVID-19, we did things like have Zoom meetings to watch movies together. I used social media a lot more to keep in touch with people, which was strange because I am more of a person who likes to go out and do things with friends rather than just talk on the phone.” Others responded that pandemic-related social anxiety prompted them to rely on technology, as their ability to interact face-to-face diminished. A 21-year-old female said, “I honestly developed quite a bit of social anxiety that I didn’t have prior to the pandemic. I think this was just because of less social interaction in general.” Others commented that they socialized less than they had before the pandemic, even as restrictions were loosened in various areas of the United States.

Second, participants said that although their face-to-face experiences declined, their experiences with socializing online stayed consistent. Individuals relied on technology for socializing as much as they did before the pandemic. For instance, a 21-year-old male stated, “Many of my interactions were online via Zoom or Facetime with teachers and family. Usually, I would text or use other forms of social media to contact friends.” Although the participant relied on technology to interact with his peers, the pandemic essentially altered the way he communicated virtually, rather than experiencing a change in the frequency or intensity. These examples provide strong support that participants continued to rely on virtual socializing, and many depended on these experiences to meet their belonging needs and build social capital, both central tenets of third place theory.

### CHANGING ENVIRONMENTS DURING COVID-19

Next, we sought to understand how individuals’ first places (home), second places (work or school), and third places (social venues) changed because of the pandemic. To answer this question, participants responded to the open-ended question, “How did your physical environment (i.e., your home, school, or work) change as a result of the COVID-19 pandemic? Please provide as many details as you are able.” Responses were categorized into four themes that included changes in: the merging of first, second, or third places, the merged space, behavior in merged spaces, and socialization experiences.

*Merging of First, Second, or Third Places.* The first theme revealed how many individuals combined their first, second, and/or third place, spending their leisure and work time at home in the same space. One 20-year-old male said, “When the pandemic first hit, I was living in a dorm on campus and was sent home for the remainder of the spring 2020 semester. I then went

became a third place. The largest deviance from the mean is listed first: cognitive separation and reprieve, reciprocity, communication as the main activity, third place within a third place, playful mood, relationship initiation and maintenance, and active and passive engagement. People over place, indicating individuals are focused more on social connections than attributes of the physical or virtual environment, was significantly less than the mean of 4.0. The equalizer, which signifies the environment was used to overcome geographic limitations and create relationships with others, was not statistically significant from the mean of 4.0.

### MEETING SOCIALIZING NEEDS DURING COVID-19

Next, we qualitatively examined the extent that individuals continued to rely on technology to meet their socializing needs during the pandemic. To address this, open-ended questions were asked concerning how socializing experiences changed due to COVID-19. Responses were rela-

**Table 2.** Mean differences based on merged first, second, and third places during COVID-19 (N = 229).

Characteristic	Example item	Cronbach's $\alpha$	Mean
Relationship initiation and maintenance	How often do you use social media to meet new friends?	.89	4.29 (1.36)**
Equalizer	How often do you use social media to connect with someone that you would not socialize with in person?	.77	3.85 (1.54)
Communication main activity	How often do you rely on social media to initiate a conversation?	.92	4.66 (1.36)***
Active and passive engagement	How often do you use social media to observe others' conversations?	.88	4.25 (1.36)*
Reciprocity	How often do you expect others to respond to you on social media?	.84	4.72 (1.51)***
People over place	How often do you personalize your profile on social media?	.68	3.48 (1.56)***
Playful mood	How often do you use social media to share something humorous with others?	.91	4.30 (1.41)**
Cognitive separation and reprieve	How often do you use social media to relax or unwind?	.85	4.85 (1.51)***
Third place within a third place	How often do you use social media in an environment where you can meet others face-to-face?	.77	4.41 (1.30)***

Note: Data is presented as means with standard deviations in parentheses. The scale for this measure is from 1 (*never*) to 7 (*all the time*). Significance levels were based on one-sample *t*-tests compared to the mean of the scale, 4.0. Because there was no comparison group for this study in order to compare means (all participants have a social and/or virtual environment), a one sample *t*-test was warranted. The comparison value of 4.0 was selected, as means larger than this value represent higher frequencies of the characteristic.

\*\*\* $p < .001$ .

\*\* $p < .01$ .

\* $p < .05$ .

home to live with my family, and it was kind of difficult because all 4 of us were home all at the same time. . . I also had less motivation because I was at home, where I usually would only be for holiday breaks, so it felt like I was supposed to be on vacation." He commented on how school and home were combined into a single place, making it hard to differentiate between the two. Others also mentioned having to move from a dorm or off-campus back home to their family. Essentially, the spaces that would normally be separate for school, work, or leisure were now combined into one place, most often an individual's home, that served the purposes of first, second, and third places.

*The Merged Space.* In addition to changes in their first, second, and third places, participants also reported modifications in their newly merged spaces, including working in communal spaces (as opposed to private spaces) at home, working with windows open and/or better lighting, working in areas where social distancing was possible, having access to cleaning supplies, and comfortable furniture. For example, one 19-year-old female stated, "[I] started to focus on my space more. [I] cleaned more often and invested more in decorations." Another 22-year-old male said, "A change I experienced in my physical environment would be routinely keeping it clean because I have my camera on during Zoom classes, and I want to present my background [bedroom] as clean." Many were concerned about the cleanliness of their physical space, a change that occurred because of the pandemic. One 21-year-old female said, "[My] house was almost constantly clean, the curtains were always open, and the furniture the same."

Many mentioned having access to windows, open windows, and/or a nice view, while others remarked on the lighting in their physical space. This statement by an 18-year-old male is an example of this trend: "My desk is located in front of the window so I can look outside and not stare at a wall." Others discussed adding or changing the lighting, and some commented on how they sought more comfortable furniture. Two individuals found more comfortable or ergonomic chairs since they spent so much time in the space. In some cases, individuals altered the interior space for ambiance, as noted by a 21-year-old female, "My physical environment became my sanctuary; I started creating a better atmosphere in my home, which resulted in a more comfortable environment."

*Behavior in Merged Spaces.* In addition to adjustments in their physical space, participants also commented on how their behavior changed within these environments because of the pandemic, which included cleaning more often, wearing masks, and/or social distancing. Some became more invested in their physical spaces given how much time they were spending there, even if this time was for socializing virtually. One 22-year-old female stated, “During the pandemic I spent a lot of my time in my room, leading me to clean my room a lot. Now, I hate when my room in my apartment gets messy. I used to always leave my room dirty, but now I cannot stand it.” The need to keep their space clean was echoed by many in the study. Some even mentioned wanting cleaning supplies near them in their spaces. An 18-year-old male said he wanted to “[keep] the windows open more, hand sanitizer everywhere, [and] space out seating arrangements.” In a few cases, participants talked about their family’s rules about interacting with others or rearranging living room furniture in ways that could allow social distancing. Due to the pandemic, certain behaviors in physical places changed as individuals rearranged their physical environments to allow for social distancing and established ways to maintain cleanliness, with an emphasis on being clean and/or safe.

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*Social Experiences.* Some commented on changes in how they socialized regardless of whether their physical environment was modified. Many discussed uncomfortable feelings about spending time face-to-face again in the future, even after the pandemic ends. A 21-year-old male said, “I do not think my physical environment has changed much besides moving from a dorm room to an apartment because I have my own space now rather than sharing a bedroom with another person. . .but my social experiences have changed as it’s harder for me to connect with someone face-to-face after relying so much on technology and Zoom.” Several even said they developed social anxiety as a result of the pandemic, as they were unsure if they should shake someone’s hand or needed to wear a mask when interacting with others.

Other discussed that they relied more on technology than they had before, having to participate in work meetings online, attend classes virtually, and schedule time with friends over Zoom. For example, a 23-year-old female said, “With the majority of my friends, we would organize group Zooms to “hang out” and had to come up with new activities that we could do remotely.” Many in this study generally expressed variations in how they socialized through reliance on technology and the interpersonal consequences of these changes on their social well-being.

The four themes identified reflect the changes in physical space that occurred because of COVID-19 as individuals made modifications within their combined space and altered their behavior to accommodate the merging of their home, work, school, and social places.

## PHOTO ANALYSIS

An analysis of photos taken and uploaded by participants resulted in five themes: private communal gathering spaces, cleanliness (order and organization as well as sanitary), lighting (electric and daylight), comfortable furniture, and views of the outdoors. Many (64.3%, 45 of the 70) discussed and shared photos of communal spaces such as dining areas and living rooms. Not only did they comment on the benefits of this space for allowing opportunities for interaction since these locations were central to other areas of the home, but they also discussed the community of a gathering space as they could interact with others, observe others interacting, or spend time connecting with others virtually. Figure 1 shows photos provided of communal spaces where people are easily able to connect with others virtually or face-to-face.

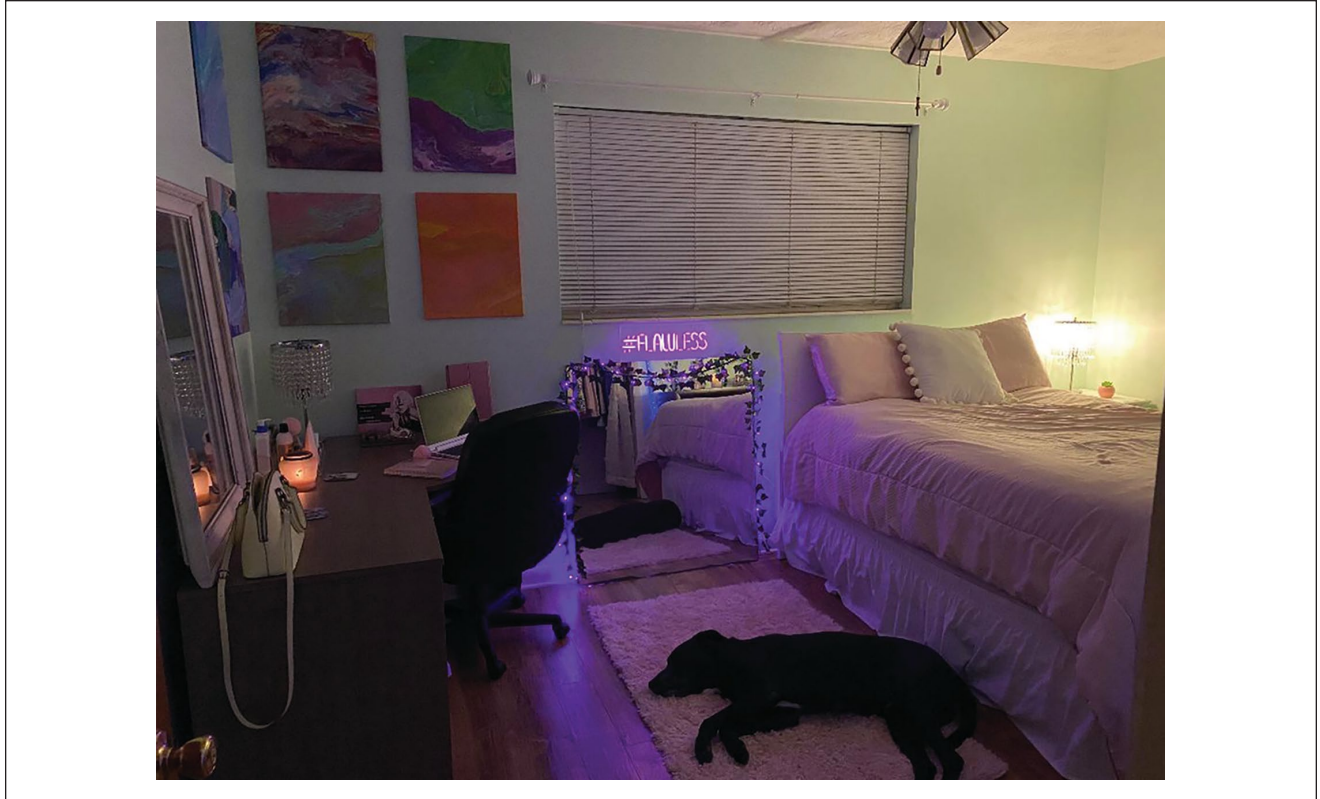
Next, the idea of cleanliness was discussed. Corroborating the qualitative data, participants emphasized a need to keep their physical environment clean in terms of organization and sanitation when they may or may not normally do so. Figure 2 provides some evidence of an extensive effort to keep living spaces tidy and orderly. As illustrated in this photo, beds are made, trash is minimal, and personal belongings are organized.





**Figure 1.** Individuals uploaded photos of the physical environment at their home in which they spent the most time socializing with others during the COVID-19 pandemic. Communal spaces, that is, places where people are easily able to connect with others either virtually or face-to-face, were common.

Some noted adding lighting to their physical environment, which served either a practical (better lighting) or comforting purpose (“I feel more at home”). Figure 3 displays a physical environment with added accent lighting for sparkle. An emphasis on comfortable furniture, most often desk chairs or quite simply a “comfortable space,” was also found. The word “comfort” was mentioned by 1 out of every 6 participants, appearing 38 times in responses. Figure 4 highlights comfort with comfortable furniture, added pillows, and layers of lighting, including various sources of electric light and daylight.



**Figure 2.** Photos uploaded by individuals of their home environment during the pandemic showed an emphasis on a need to keep their physical space clean in terms of organization and sanitation.



**Figure 3.** Many of the photos provided by individuals of their home environment showed added lighting to the physical environment, such as this photo with additional accent lighting.



**Figure 4.** Comfort was a common theme in the photos individuals uploaded, exhibited through comfortable furniture, added pillows, soft colors, and soft materials as well as layers of lighting that included electric lights and daylight.

Last, respondents mentioned nearness to windows and/or access to exterior views in their physical environments. Figures 5 and 6 provide examples of typical photos provided with access to windows and opportunities for views. While some participants indicated they were motivated to move near a window for a view of nature while spending so much time online, another reason for this commonality could be that daylight aided in tasks being completed with less eye strain. The choices of these images indicate that windows and views were important in this context.

The photos submitted and the quantitative and qualitative data provide evidence of important elements in the physical environment resulting from COVID-19—one that is clean with comfortable furniture and lighting and provides opportunities for socializing virtually and/or in person.

## DISCUSSION

The goal of this study was to examine how physical spaces incorporated virtual environments for social connection during COVID-19 to inform interior design solutions. Results illustrate that during the pandemic, there was a shift in the way individuals socialized that now includes virtual interactions.

As scholars have noted (D'Souza & Lin, 2015; McArthur, 2016; Misra & Stokols, 2012), the idea that physical and virtual spaces have been merging is not new. Previous studies have illustrated that individuals were engaging in third places through a virtual experience even before COVID-19, regardless of their physical environment. Despite calls for research examining the assimilation of virtual and physical space, few studies have addressed this issue.

The current study used a multi-method approach to understand how socializing trends continue to evolve and to provide guidance for interior designers. The information illustrates specific ways that physical environments can adapt to





**Figure 5.** The photos individuals provided of their space during COVID showed a desire of participants to be near windows in the space where they spent time online.



**Figure 6.** Individuals provided photos of spaces near windows where they had views to the outside while online, indicating natural light and views were important in this context.

**The information illustrates specific ways that physical environments can adapt to incorporate virtual experiences. The outcomes show how first, second, and third places may no longer be mutually exclusive; rather, home, work, and third places may overlap for many individuals.**

“ incorporate virtual experiences. The outcomes show how first, second, and third places may no longer be mutually exclusive; rather, home, work, and third places may overlap for many individuals. Therefore, interior design solutions need to adapt accordingly. Subsequently, a review of the findings provided by qualitative responses and photos shows how individuals are changing their spaces to encompass virtual interactions as well as themes identified regarding environmental modifications associated with the pandemic.

Many in this study, through quantitative analyses and qualitative responses, described how the pandemic altered the way they connected with others. Individuals spent less time socializing with others face-to-face and focused on connect-

ing virtually, whether through social media, texting, and/or applications that allowed for real-time communication, like Zoom, WhatsApp, and Facetime. Some even said they scheduled “virtual events” to communicate with others. These trends are not different from previous studies that have shown a reliance on virtual environments to connect with others (Ducheneaut et al., 2007; Langlais & Vaux, 2022). This data lends itself to further investigation of environmental-behavior factors. For example, people exhibited aspects of personalization through lighting, comfort, and cleanliness, and referenced privacy by defining their space as a “sanctuary.” It would be beneficial for future studies to further examine this behavior. Empirical evidence emphasizes changes in socializing trends and how the design of physical space needs to allow for these experiences.

## DESIGN CONSIDERATIONS

Understanding the integration of physical and virtual spaces can help interior designers alter physical environments to promote virtual and physical interactions. Findings from this study are consistent with the elements of physical third places and characteristics of virtual third places in the literature and show the importance of understanding this merge. For example, four out of five of Waxman’s (2006) features that contribute to place attachment in coffee shops as third places (i.e., cleanliness, adequate lighting, comfortable furniture, and views) appear to be important in physical spaces where individuals engage in the virtual and are discussed below.

**Cleanliness.** The cleanliness of physical spaces emerges as significant when individuals also engage in virtual environments. Aspects identified show that cleanliness pertained to the organization of space as well as sanitation that contributed to perceived safety. Design considerations such as increased storage to maximize organization as well as intentional locations for sanitizers and other cleaning supplies not only helped the individual feel safer but also made it easier to have unplanned Zoom meetings or other virtual interactions where an organized background would be desired. In addition, social distancing even within the private home contributed to the perception of cleanliness related to wellbeing.

**Lighting.** Aspects of lighting known to be vital for the design of physical space are also important when individuals engage in virtual environments. Since it is well documented that light from screens can be tiring, increased virtual use leads to a greater desire for alternative light sources, especially natural light. Furthermore, lighting that increases ambiance can impact the phenomenological experience of space. As seen in study responses and shared images, some individuals added task lighting at desks and workspaces, ambient light (often as daylight); and accent lighting supplemented by decorative lights.

**Windows/Views.** The importance of daylight and views was also a common aspect of physical spaces where individuals engage in virtual environments. Prominent responses included moving workspaces closer to windows and orienting furniture towards views. Expansive views, such as a diverting glance out the window from a computer screen, can contribute to a sense of respite and reprieve, a characteristic of third places. Windows and views, as well as increased natural light, ground humans in reality after being on screens for an extended time.

**Comfort.** In addition to images showing comfort (e.g., soft furniture, extra pillows on beds, and sofas), the word comfort appeared frequently in many responses. One used the word “sanctuary” to describe the physical environment they created for their virtual interactions. Feeling comfortable appeared to allow the individual to be more immersed in the virtual world.



*Communal Space.* Having third places for social interaction is essential to human wellbeing (Oldenburg & Brissett, 1982; Rosenbaum et al., 2007; Vaux & Asay, 2019) and remains important as people gather in virtual space. Individuals often identified communal spaces as the physical environment they used to engage in virtual socialization, which highlights that physical and virtual spaces are no longer seen as independent from one another, but as integrated so that first (home), second (work), and third places (social venues) occur in the same location. Since first, second, and third places are increasingly merging, and the incorporation of the virtual third place is now essential, it is necessary to consider design elements important to this new way of interacting with space.

“ One used the word “sanctuary” to describe the physical environment they created for their virtual interactions. Feeling comfortable appeared to allow the individual to be more immersed in the virtual world.

The findings also have theoretical implications. Most significantly, third place theory must be adapted to include the interface of physical and virtual social venues as socializing trends continue to adapt and evolve (Vaux & Langlais, 2021). The results from this study further support the concept of interiority as a framework that “expands the definition of interior” to engage with space that is “not necessarily attached to buildings” (Attiwill, 2012, p. 175). Perolini (2014) defined interiority as “a process within a person that reflects an individual’s unique awareness of the world and a psychological relationship to the world that is meaningful” (p. 170). Similarly, Lefebvre (1991) expanded the notion of space to extend beyond physical attributes by including social activities and space imbued with meaning through engagement and interactions. The social dimension of place connects it significantly to the idea of third place, as these are venues in which people engage with one another, thereby making the space/venue meaningful to those using it. If an interior is not limited to the *physical*, meaning spaces enclosed by walls, it “transcends these physical constraints. . . [and] necessarily embraces subjective human experience in an existential sense” (Vaux & Wang, 2020, p. 6). As noted by D’Souza and Lin (2015), when people engage in virtual behavior, “there is still a physical environment in which the body resides and. . . the potential for two experiential worlds to coexist simultaneously” (p. 368). An interior extended beyond four walls challenges interior design practice to embrace “all the components of virtuality and physicality” (D’Souza & Lin, 2015, p. 376) as individuals are simultaneously present in both. The merging of virtual and physical environments in this study is one way to begin to understand “interior” in a broader sense.

## CONCLUSIONS, LIMITATIONS, AND FUTURE RESEARCH

Even though people may be mentally “somewhere else” in cyberspace while engaging in social media, their physical surroundings remain important. Four themes emerged that impacted individuals’ experiences with the integration of physical and virtual space: change in the merging of first, second, and third places, change within the merged space, change in how the space is used; and change in social experiences. Furthermore, findings in this study show that the participants in this sample continue to value characteristics of physical environments found to be important when socializing, such as cleanliness, comfort, lighting, and views within the merged environment (Vaux, 2015; Waxman, 2006). Although shifts have occurred over the past three decades, the combining of first, second, and third places were accelerated due to the COVID-19 pandemic. Thus, these results provide utility for designing home environments relative to the four themes as the physical-virtual dichotomy disappears due to evolving socializing trends.

For interior designers, incorporating design considerations into merged places is also relevant beyond the home environment. As the pandemic subsides and individuals continue to rely on virtual environments for social connection, traditional third places, such as coffee shops, as well as other environments, may become merged. Even in the work environment, where “resimercial” design trends have influenced home-like office layouts and furnishings, the potential for a merged place becomes viable when people return to work and integrate virtual and physical spaces. Future studies are encouraged to collect evidence of one’s environment before the pandemic and/or before the assimilation of first, second, and third places.

Despite these findings, this study is not without limitations. Individuals engage virtually in different ways: some use social media, some use texting, and some use real-time virtual interaction applications, like Zoom. The current investigation did not consider the context of how or why individuals engaged in virtual interaction, whether it was required due to work or school, or strictly for social interaction, which likely has implications for the merged environment. To illustrate, using Zoom versus Instagram could lead to different solutions for the interior (i.e., an effective space for virtual meetings where lighting and camera are important could be less critical for Instagram use). In addition, not every participant shared a photo of their

**As the pandemic subsides and individuals continue to rely on virtual environments for social connection, traditional third places, such as coffee shops, as well as other environments, may become merged.**

“ physical environment; therefore, the results lack generalization to other populations. Asking individuals to take a photo of their space may have also influenced the cleanliness results, as some participants may have “cleaned” prior to photographing. Yet qualitative responses do corroborate the idea of an orderly environment. Similarly, the quantitative data was based on convenience sampling and emerging adults, many of whom were college students.

Another limitation was an examination of how individuals communicated in their physical environments. For example, many spoke of reliance on virtual communication, but others had opportunities to connect face-to-face, whether through social distancing or simply interacting as they normally would despite the pandemic. Participants’ responses to COVID-19 are also likely to impact their physical environment, as those who did not report behavioral changes due to the pandemic may not have changed their physical environment. In addition, no question addressed vaccination status, so it is unclear how this variable may impact these results. While the findings focused on comfort, lighting, views, and cleanliness, future studies could address the physical and functional requirements that make the merged home space effective in terms of ergonomics and space planning. Although these are limitations, the current study adds to the literature on how individuals continue to rely on technology for social interaction, regardless of COVID-19.

Developing virtual third places that are beneficial for social well-being is essential and perhaps more so during the pandemic. The authors concede that community can create “havoc as well as happiness” (Oldenburg & Brissett, 1982, p. 267), as evidenced by studies on cyberbullying and its negative impacts on youth self-esteem (Kokkinos et al., 2016). It is important to note the reasons why some individuals may be less motivated to use technology for social interactions. In addition, given the affordances of face-to-face communication, which include greater intimacy compared to online communication, more immediate feedback, and a better understanding of nonverbal social cues, some individuals are more interested in face-to-face contact compared to online communication (Lee et al., 2019; Sherman et al., 2013). Despite these limitations, this investigation serves as a foundation for future studies examining the integration of first, second, and third places.


This study elaborates on previous calls to consider the merging of virtual environments with physical environments in the field of interior design. Through an online survey and photo analysis, the results provide evidence that individuals are using their physical environments to meet their socialization needs through virtual and face-to-face communication and that their physical environments must now meet multiple needs. As Tehve (2021) noted, “in the twenty-first century, digital space has become an extension and overlay of physical space” (p. 58). COVID-19 intensified the combining of virtual and physical spaces as many individuals experienced the world through a computer screen. The findings from this investigation provide suggestions for designing merged virtual and physical third places that can meet the socializing needs of individuals during and after the pandemic.

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Dr. Dana E. Vaux planned the study, assisted with data collection and analysis, and co-wrote the manuscript. Dr. Michael R. Langlais assisted with the planning of the study, conducted data collection and analysis of the data, and co-wrote the manuscript.

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