

'Sense of Place' in Virtual Design Studio (VDS): A Review

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ABSTRACT

Physical design studio (PDS) and live critique sessions are essential elements in design school pedagogy. It enables students to construct their socio-spatial ability through creativity and rationality in a simultaneous way. However, due to the COVID-19 global pandemic, all teaching and learning activities must be conducted remotely in a virtual design studio (VDS). Unfortunately, VDS could be a placeless place for the students and significantly affects their overall learning experience. 'Sense of Place', or the people-place engagement, is an important concept in the virtual learning context from the cognitive, affective, and conative domain. VDS not merely provide the 'place', but should be able to support dynamic social interactions between students and the tutors as well as to conduct pedagogical activities. Without 'Sense of Place', the emotional and psychological engagement in creating learning experiences could not be fulfilled. This paper reviews the previous studies that concentrate on the pedagogical method and 'Sense of Place' in VDS at a higher education level. There are several strategies for constructing 'Sense of Place' in a VDS. Those are humanization, socialization, the presence of a teacher, guiding structure, graphic tools used, and the student contribution during the learning process. Another strategy is to blend both online and classroom that encourages teachings with multiple learning styles. This conceptualization of 'Sense of Place' in VDS is beneficial in further research with empirical data.

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Physical Design Studio (PDS) dan sesi kritik langsung adalah elemen penting dalam pedagogi sekolah desain. Hal ini memungkinkan siswa untuk membangun kemampuan sosio-spasial mereka melalui kreativitas dan rasionalitas secara simultan. Namun, karena pandemi global COVID-19, semua kegiatan belajar mengajar harus dilakukan dari jarak jauh. Sayangnya, Virtual Design Studio (VDS) bisa menjadi tempat yang abstrak bagi siswa, dan oleh karena itu, secara signifikan mempengaruhi pengalaman belajar mereka secara keseluruhan. 'Sense of Place', atau keterlibatan orang-tempat, adalah konsep penting dalam konteks pembelajaran virtual dari domain kognitif, afektif, dan konatif. VDS tidak hanya menyediakan 'tempat' tetapi juga harus dapat mendukung interaksi sosial yang dinamis antara siswa dan tutor, serta untuk melakukan kegiatan pedagogis. Tanpa 'Sense of Place', keterlibatan emosional dan psikologis dalam menciptakan pengalaman belajar tidak dapat terpenuhi. Makalah ini mengulas penelitian-penelitian sebelumnya yang berfokus pada pembentukan 'Sense of Place' dalam VDS di jenjang pendidikan tinggi. Terdapat beberapa strategi untuk membangun 'Sense of Place' dalam VDS, yaitu humanisasi, sosialisasi, kehadiran pengajar, arahan terstruktur, alat grafis yang digunakan, dan kontribusi siswa selama proses pembelajaran. Strategi lain adalah dengan cara memadukan kelas online dan offline yang mendorong pengajaran dengan berbagai gaya belajar. Konseptualisasi 'Sense of Place' di VDS ini bermanfaat dalam penelitian lebih lanjut dengan data empiris.

1. Introduction

The COVID-19 global pandemic has brought a tremendous impact on the higher education system by transforming from offline learning to online classes. Not only the teaching and learning activities, but also impacting other aspects including research, community service as well as faculty operation. In a short term and immediate action, shifting in teaching methods, preparing online teaching materials including the supporting infrastructure must be synchronized to ensure a smooth running of the teaching and learning process. There has been a tremendous effort to support the online curriculum adaptation process while maintaining the mental and physical health of the teaching staff as well as the students' motivation and engagement during the online learning session. A well-designed online learning system is expected (1) to prevent students from dropping out of school midway during their study years, (2) to develop online learning infrastructure, (3) to create reliable online learning assessments as well as (4) to improve the collaboration with industries and communities for strengthening the online learning materials and maintain the quality assurance.

For art and design subjects at a higher education level, shifting pedagogical method has existed since more than a decade ago and currently is still ongoing due to the pandemic, from hands-on to the virtual way. There have been numerous publications on virtual learning in design studios including teaching and learning through learning-by-doing and the culture of studio syllabus adaptation, the pedagogy of design studio to online teaching and learning, diverse student competencies on technology acceptance interface, internet connection problems, as well as the needs of exploring new tools and applications to improve students' engagement in classroom (Schon, 1987; Wagner & Gansemer-Topf, 2005).

A physical studio is merely not a classroom, however, it acts as a way of life (Iranmanesh & Onur, 2021). In other words, physical studio means phases in a design process that are undergone within a collaborative ecosystem design framework. There is an interconnected socio-spatial character in building a 'Sense of Place', or the people-place relationship, in a design studio beyond its normative function. When the shifting to the virtual room happens, Virtual Design Studio (VDS) applies. The majority of the students are the millennial generation who are highly literate in technology, social media and other digital spaces. Faster and easier communication could be accomplished through technology, not only for exploration, activities, or recording purposes but also for live critique sessions and review purposes. Based on this phenomenon, strategies are needed to improve students' engagement towards the study room in accordance with the nature of studio design teaching and learning (a.k.a. 'studio culture') through 'Sense of Place'.

2. Materials and Methods

2.1. Virtual Design Studio (VDS)

In a simpler definition, a virtual design studio (VDS) is a virtual learning place for design students. This term was coined and has been widely investigated for the past three decades. The increasing popularity of research and studies in this area nowadays is due to the need to develop the teaching and learning of design in the COVID-19 pandemic situation. Although in general, there have been many claims on how the

physical environment of a studio can bring convenience to execute project-based learning with optimal interaction.

The strengths of VDS include a wider and interdisciplinary connected way of learning by forging collaborative yet independent exploration opportunities. On the other hand, there are still several areas that need to be improved in VDS, such as lack of social interaction and diverse basic knowledge (Arora & Khazanchi, 2014). Before the pandemic, social interaction happens when the students meet physically and conduct collaborative learning activities. Unfortunately, the pandemic changes the setting to minimize social interaction. Thus, peer learning becomes one of the missing aspects during online studio in VDS. Available media applications and software are then expected to bridge the gap. The problem of diverse basic knowledge is usually faced by beginners. In addition to the above two challenges, VDS entails the need for the learners to improve their communication skills for job search. Moreover, the capacity to observe and peer connection could be difficult to achieve in a VDS. Northcote, (2008) indicates that there is a need to construct the 'Sense of Place' in VLE. By enhancing the engagement among the online learning communities, it will maximize the student learning quality.

2.1.1. Studio Activities to Achieve the Learning Outcomes

Saghafi, Franz, & Crowther, (2012) indicated that there are nine different aspects between PDS and VDS, those are: (1) culture, (2) community, (3) space, (4) technology, (5) pedagogy, (6) assessment, (7) content, (8) process and (9) outcome. Firstly, in the cultural aspect, there is more interaction and communication in PDS whereas there is a probability of less communication between students and teachers in VDS. Second, in the community aspect, PDS communities can meet in reality, thus it could develop students' potentials, while in VDS, members of the developed community should be familiar with each other (virtually) otherwise it could lead to alienation, confusion and loss of identity. Thirdly, in the 'space' aspect, the PDS environment provides less freedom which has brought challenges to the studio course coordinator to manage the setting parallel to the desired pedagogy. However, in VDS, learning space reflects the learners who are able to choose their preferred study space. The fourth aspect is the 'technological' aspect. It can be divided into hardware and software aspects. The learning management system has to be specifically supportive during VDS. Although synchronous communication happens in PDS, technological aspects should also be taken into consideration.

In a 'pedagogy' aspect, teaching style, learning approach and curriculum are the main focus. PDS focuses more on the improvement of knowledge and skills and peer learning while VDS targets independent research and discussion. 'Assessment', as the sixth aspect, could be done equally both virtually and physically. However, in PDS, formal observation and structured demonstration are less difficult to execute. The eighth aspect, the 'content' of the course material in PDS combines both online and printed, while online materials are more suitable for VDS. Lastly, in the 'outcome' aspect, both VDS and PDS need to be equipped with overall planning from a design brief. The two methods could generate outcomes through planning and also channelled design process.

There have been concerns for senior students to be given more chances in a VDS. A previous study conducted by Arora & Khazanchi, (2014) proved that upper-year students are more adaptable to a virtual environment, more capable to meet the needs,

more well-versed in digital communication and more independent in learning. On the other hand, junior students tend to learn better in a physical design environment including in exploring the spatial experience and mastering the basic knowledge. Nevertheless, students have their own preference to gain the right composition between physical learning studio and virtual design studio, and this option needs to be formulated by the facilitators (Arora & Khazanchi, 2014; Rodriguez, Hudson, & Niblock, 2018).

Another option is through blended learning in a hybrid studio. A recent study on hybrid studios by combining conventional studios or PDS, VDS and live projects has been conducted by Rodriguez et al., (2018). The study proved that the students could work collaboratively, confidently and interactively. They also competently answered the challenges posted in the design brief. The virtual medium enables collaborations between campuses in Columbia and the UK. Moreover, the flexibility in the blended learning method could increase hands-on activities and be more beneficial for tactile learner students (Salata, 2017). The current studies on VDS focus on the consideration of the soaring COVID-19 cases within the pandemic era worldwide and the possibilities of its development in the post-COVID-19 era. Therefore, more studies on strengthening the 'Sense of Place' within the online learning environment should be conducted both during and after the pandemic era by taking into consideration the benefits gained in order to improve students' engagement and performance.

2.1.2. Previous Research on Virtual Learning Environment (VLE) and Virtual Design Studio (VDS)

In the past, virtual learning environment (VLE) topics have been studied in relation to the teaching and learning process (Bessa, Santos, & Duarte, 2019; Trestini, 2018), its connection to students' behaviour and performances (Alves, Miranda, & Morais, 2017; Karuppanan & Mohammed, 2020; Wijaya, Ying, Purnama, & Hermita, 2020) and the best practice (Lupukhova & Makeeva, 2017). Researchers also relate the virtual learning environments with contexts of place (Clark & Mayer, 2010) and also to 'Sense of Place' (Arora & Khazanchi, 2014; Jones & Lloyd, 2013; Turner, Turner, & Burrows, 2013).

In a narrower scope, the concept of VDS has also been commonly investigated in relation to students' perception (Ahmad, Sosa, & Musfy, 2020; Koh & Wong, 2021; Saghafi et al., 2012) monitoring and evaluation processes (Harahap & Atmodiwirjo, 2021); the success factors (Iranmanesh & Onur, 2021; Lotz, Jones, & Holden, 2018); transition from offline to online design studio (Iranmanesh & Onur, 2021), and added value by collaborating with several parties (McAra & Ross, 2020). The dimensions could also be adjusted from the concept of place from offline to online, such as place identity (cognitive evaluation of VLE); place dependence (conative evaluation of VLE) and place attachment (affective evaluation of VLE) (Arora & Khazanchi, 2014). Yet, only a few studies aimed to conceptualize the 'Sense of Place' in relation to VLE (Arora & Khazanchi, 2014; Champion, 2005), especially those pursuing architectural and interior design studies. Hence, this study aims to provide insights and strategies to create a 'Sense of Place' within a VDS to improve students' engagement and learning performance.

2.2. Methodology

This paper employs a semi-systematic literature review method to provide a strong foundation to analyze related findings on the concept of 'Sense of Place' in VDS. According to Snyder, (2019), a semi-systematic literature review delves into a narrative review which utilized in this study to explore issues related to the keywords i.e. 'Sense of Place' and VDS. Hence, this study could generate a specific theme in literature in the area of design studies. There are four phases applied in writing the review. The first phase of the research is to ensure the importance of the topic of 'Sense of Place' and VDS as the theme of the literature review and select publications related to the subject matter. The second phase is the review of the literature based on the themes. The third phase is analyzing the connection between the keywords to form new concepts. Lastly is to write the review by reporting the findings to provide clear and valuable contributions to design studies in particular within the theme of 'Sense of Place' and VDS as the subject matter.

3. Result and Discussion

3.1. 'Sense of Place' in Virtual Design Studio (VDS)

'Sense of Place' can be defined as the way people use, engage, and conduct routine experiences in a place (Arora & Khazanchi, 2014; Tuan, 1977). This notion is generally applied in the field of human geography, sociology as well as environmental psychology. In an educational context, 'Sense of Place' is studied to investigate the students' engagement with their learning environment, both physically and virtually. However, an online learning environment could be problematic in terms of the students' engagement and performance. Northcote, (2008) agreed that an online learning environment lacks 'humanity' that creates a cold, isolating, faceless, and disembodied place. Hence, constructing 'Sense of Place' in VDS plays a significant role in enhancing the students' online learning quality by increasing the sense of community.

To construct the 'Sense of Place' in online learning communities, Arora & Khazanchi, (2014) defines that there are three dimensions to be considered, i.e. (1) place identity (cognitive evaluation), (2) place dependence (conative evaluation), and (3) place attachment (affective evaluation). This multidimensionality concept of 'Sense of Place' is important in the virtual learning domain that affects the students' learning outcomes. Firstly, place identity is associated with the cognitive functions that drive the intellectual activities on how people see, think and feel in their environment that includes the images, memories and conceptions (Proshansky, Fabian, & Kaminoff, 1983). Secondly, place dependence focuses on the conative or behavioural evaluation that facilitates the specific goal or activities of the people (Canter, 1977). Lastly, place attachment is related to the emotional bond towards a place based on the direct experience that develops over time (Relph, 1976).

As listed in Table 1, Arora & Khazanchi, (2014); Iranmanesh & Onur, (2021) and Northcote, (2008) conceptualized their concept of 'Sense of Place' in the VDS context. The place identity refers to the design of the user interface characteristics of the virtual learning space or the online platform they use. However, a VDS has to be user friendly and familiar in order to create a higher place identity. Place dependence refers to the

technologies that are conducive for conducting online learning activities, e.g. self-dependent research and exploration, peer learning, and critique session. Low place dependence resulted in functional deficiencies in accomplishing the task. Place attachment in VDS is associated with the repetitive physical and social engagements that generate meaningful learning experiences, such as the tutor-student and peer-to-peer communication. Despite the inability to interact directly, human interaction is still important in a virtual environment.

Table 1. The Notion of ‘Sense of Place’ in Virtual Design Studio (VDS)

‘Sense of Place’ Dimension	Evaluation	Application in VLE (Arora & Khazanchi, 2014)	Application in VLE (Northcote, 2008)	Application in design school (Iranmanesh & Onur, 2021)
Place identity (Proshansky, Fabian, & Kaminoff, 1983)	Cognitive/intellectual	Physical characteristics	Online platform	VDS by using any online platform
Place dependence (Canter, 1977)	Conative/behavior	Afforded activities	Online learning activities	Self-dependent research and exploration, peer learning, critique session
Place attachment (Relph, 1976)	Affective/emotional	Social interactions	Online social experience	Tutor-student and peer-to-peer communication

(Source: Authors’ analysis, 2021)

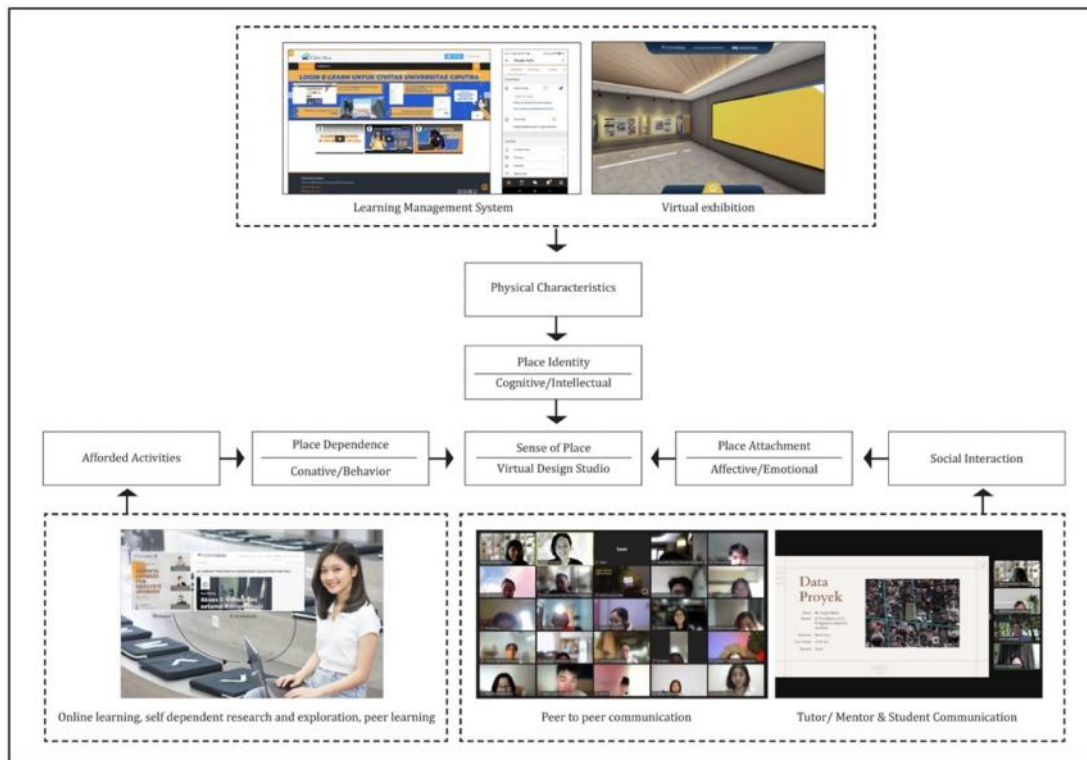


Figure 1. Schematic Diagram – ‘Sense of Place’ in Virtual Design Studio (VDS)

Source: Authors’ analysis based on the personal documentation (2021)

To sum up, Figure 1 illustrates the schematic diagram based on the notion of ‘Sense of Place’ that occurred in a VDS in Table 1. Firstly, the physical characteristics that define the place identity can be in the form of an e-learning platform or learning management

system and also a virtual exhibition gallery that can be viewed by the public. Secondly, to achieve the place dependent dimension, the individual and group learning activities still can be performed by the students although in a virtual setting. Lastly, the social interactions between tutor-student and peer-to-peer that occurred in the design studio are possible by utilizing the cloud-based video conferencing service.

3.2. Strategies to Construct the 'Sense of Place' in Virtual Design Studio

The COVID-19 global pandemic phenomenon has changed the teaching and learning method in design school by shifting the studio life virtually. Although virtual design studio is not a new concept in architectural pedagogy, improvements are needed to enhance the students' learning outcomes. A well-designed online learning platform should be based on the learners' cognitive, locational, and social needs in mind. This condition will balance the 'mind-body-soul' connection (Crook, 2007, as cited in Northcote, (2008)). Arora & Khazanchi, (2014) emphasized that both students and teachers must be ready, independent, and well-versed in digital technology. They also argue that adequate infrastructure plays a significant role to facilitate the VDS although technology alone is insufficient in influencing the course structure. The quality of the teaching and learning process has to be prioritized rather than the technology used (Goodfellow & Lea, 2007; Marrett & Harvey, 2001).

The social interactions that occurred in the VDS during the critique session and peer discussion have to be maintained to create the 'Sense of Place'. There are six ways to create the 'Sense of Place' in an online learning environment that can be applied in VDS. Those are humanization, socialization, the presence of a teacher, guiding structure, graphic tools used, and the student contribution during the learning process (Northcote, 2008). Another option to construct 'Sense of Place' is by blending both online and offline classroom that encourages teachings with multiple learning styles (Salata, 2017). To conclude, if the tutor-student-community presence and identity are developed in a positive way, the 'Sense of Place' could successfully contribute to enhance the quality of the learning outcomes.

4. Conclusions

Similar to physical space which is designed to build a connection with the users, VDS also needs to be conditioned to create a positive attachment during the learning process. A learning experience that can create a 'Sense of Place' in a VDS is in urgent need to be conceptualized. The aim is to provide feedback for the online teaching and learning process, specifically in design schools. Therefore, the idea of 'Sense of Place' is no longer limited to physical setting, activities and social interaction of a place, but it could also be reconceptualized and adapted with the condition of VDS. Whereas VDS alone can create a 'place' for online learners and in many ways, as an institution, it is expected to support the students' needs during their learning process. By engaging various online platforms, the project-based teaching and learning process could be conducted in synchronous and asynchronous methods. Hence, it could create social interaction and build a sense of community which is essential for constructing the 'Sense of Place' in VDS. However, there is a need to conduct further studies by using empirical data to conceptualize the achievement of 'Sense of Place' based on the learning performance.

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