

Research Article

Landscape, Well-Being and Connection: A Qualitative Study of Community College Students' Perceptions of Campus Attributes

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Abstract: Research increasingly highlights the significant challenges faced by students in higher education, particularly in terms of stress, anxiety, and a diminished sense of belonging. While numerous studies have explored the relationship between students and the landscape at four-year institutions, there is a gap in understanding how campus landscapes influence community college students' well-being and academic success. This study used a qualitative phenomenological approach to investigate how students perceive campus landscape attributes, which features they regard as most salient to their mental and physical well-being, and how they contribute to or hinder their success. Key findings point to the positive impact of diverse naturalistic settings, underscoring the link between campus landscapes and students' psycho-physiological well-being. Additionally, participants highlighted the importance of landscape excellence in communicating that they are valued by the institution, thereby enhancing their sense of belonging. Insufficient student involvement in campus landscape planning is thus problematic, as it may result in environments that fail to support student well-being and persistence. The study concludes that intentional, student-centred landscape design is essential for fostering students' mental health, sense of belonging, and academic resilience at the community college level.

Implications: Student engagement with campus landscapes has a wide-ranging impact on policy, practice, and research. Findings underscore the need for student input in campus landscape planning to foster belonging, ownership, and well-being. Designing diverse social and private spaces can accommodate varied student needs. Institutions should integrate these considerations into strategic missions, ensuring holistic mental and physical well-being support. Although drawn from a limited sample, these insights encourage further exploration of intentional, student-centred campus landscapes to enhance academic success.

Keywords: Community colleges, landscape, mental/physical well-being, appreciation, recuperation, connection

1. Introduction

I once observed a visibly distressed student pacing in our horticulture garden, seeking a quiet space to calm her anxiety. That moment highlighted how crucial natural refuges can be for students' well-being. Research confirms that time in nature reduces negative thoughts and improves both mental and physical health (Ottosson & Grahn, 2008; Rakov & Eells, 2019). Nevertheless, administrators and faculty frequently overlook campus landscapes as supportive spaces.

Many students at community colleges contend with stress, anxiety, and a limited sense of belonging (Arria et al., 2013; Dyson, 2006; Gillen-O'Neel, 2019). Institutions have recently begun focusing on students' physical and mental well-being as a critical factor in their academic achievement (Berman et al., 2021; Bratman et al., 2015; Lu & Fu, 2019). However, insufficient research examines how the physical campus landscape contributes to these factors (Bailey et al., 2004; Hoachlander et al., 2003; Schuetz, 2005). This study

addresses the gap in research on how thoughtfully designed outdoor environments can promote students' physical and mental well-being, particularly in diverse and urban two-year institutions. By exploring the role of the physical landscape in fostering students' sense of belonging and mental health, this work offers insights for institutional agents seeking feasible, cost-effective interventions. Ultimately, recognizing campus landscapes as essential resources may broaden equity and student success opportunities while guiding policymakers, designers, and administrators toward more inclusive, nature-based strategies.

2. Methods

This qualitative phenomenological study explored how community college students perceive and experience campus landscapes. Data collection occurred at six urban Southern California community colleges (public, two-year institutions) that granted research approval. These sites share similar characteristics, including diverse student populations, median household incomes above \$48,000, and enrollments exceeding 10,000 students each.

Table 1. Campus Abridged Descriptions

Campus*	Year Campus Built	Approx. Student Population	Approx. Acreage
Junius Community College	1915	13,000	100
Posidonius Community College	1927	24,000	110
Diogenes Community College	1946	30,000	420
Aurelius Community College	1947	20,000	165
Epictetus Community College	1965	12,000	120
Aristo Community College	1991	11,200	135

*All names are pseudonyms

Using purposeful sampling, I contacted the colleges' division deans, requesting if they would recommend any of their students for the study. I requested participants who had completed at least one semester of on-campus attendance. Of 23 participants, 13 identified as female, nine as male, and one as non-binary; 18 reported racially or ethnically diverse backgrounds. Ages ranged from 18 to over 55, and 19 participants identified as first-generation college students. We protected confidentiality by assigning pseudonyms and removing identifying details.

Table 2. Participants' Profile Data

Name*	Gender	Race/Ethnicity**	Age	Person w/ Disability	Veteran
Aero	Female	Hispanic/LatinX	18 - 24	No	No
Bellamy	Female	White	35 - 54	Yes	No
Cagney	Male	African Am/Black	18 - 24	Yes	No
Darby	Female	Hispanic/LatinX	25 - 34	No	No
Ellery	Male	Pacific Islander	25 - 34	No	No
Faber	Female	Hispanic/LatinX	18 - 24	No	No
Gemi	Male	Hispanic/LatinX	18 - 24	No	No
Hayden	Female	Southeast Asian	18 - 24	No	No
Isley	Male	White	18 - 24	No	No
Jalen	Female	Hispanic/LatinX	25 - 34	No	No
Malec	Male	Multiracial	18 - 24	No	No
Nicola	Female	Hispanic/LatinX	35 - 54	No	No
Omega	Female	White	55 - 74	Yes	No
Pennington	Female	White	55 - 74	Yes	Yes
Raen	Female	Hispanic/LatinX	35 - 54	No	No
Sailor	Male	Southeast Asian	35 - 54	No	No
Tate	Female	White	25 - 34	No	No
Underwood	Male	African Am/Black	18 - 24	Yes	No
Valentine	Female	Southeast Asian	18 - 24	Yes	No
Weaver	Female	African Am/Black	18 - 24	Yes	No
Xi-Wang	Genderqueer or non-binary	Multiracial	18 - 24	No	No
Yuki	Male	Hispanic/LatinX	25 - 34	No	No
Zeta	Male	Hispanic/LatinX	18 - 24	No	No

*All names are pseudonyms **Self-Identified

Data were gathered through three instruments: (a) pre-Photovoice exploration questionnaire featuring demographic items and Likert-scale questions about well-being, academic persistence, and landscape preferences; (b) Photovoice, enabling participants to take digital photographs of campus features they found supportive, aesthetically engaging, or indicative of belonging; and (c) semistructured, one-on-one interviews, in which participants discussed their photos and perceptions of the campus environment. The questionnaire served a dual purpose: it provided a foundation of quantitative and open-ended qualitative insights that revealed a range of profound and diverse respondent perspectives, and it also functioned as an effective ice-breaker to prime participants for deeper reflection during interviews. This multi-instrument approach was designed to capture a wide range of data and to enhance credibility via methodological triangulation.

Before formal data collection, I conducted a pilot study with three nonparticipant students to test feasibility, clarity, and timing. I secured Institutional Review Board (IRB) approvals from each participating college to ensure ethical oversight. I followed protocols to protect participants' rights, including informed consent and confidentiality safeguards.

Each data-collection session lasted 45–60 minutes. Participants received a \$25 gift card as an incentive. Questionnaire responses were entered into a secure database, while photographs were logged by participant ID and uploaded to a password-protected computer. Interviews were audio-recorded, transcribed verbatim, and then reviewed alongside the photographs.

The primary challenge of this analysis was integrating data from multiple collection instruments. To address this, I employed a constant comparative method to evaluate the data at each stage, which strengthened the overall analysis (Charmaz, 2014). I conducted an independent thematic analysis of all data sources to identify emergent patterns, starting with initial coding and then iteratively refining the codes to capture central themes. The conceptual framework guided the thematic analysis, which shaped my initial expectations of possible themes. At the same time, the iterative analysis process allowed for the emergence of unexpected themes, offering nuanced insights that illustrated each research question and supported the findings.

To ensure trustworthiness, I maintained an audit trail, conducted member checks when feasible, and applied rigorous data management practices while remaining mindful of researcher reflexivity. This systematic, multimethod approach enabled a comprehensive understanding of how students' lived experiences with the campus landscape shape their well-being, sense of belonging, and academic engagement. Accordingly, my analysis was guided by these three research questions:

1. How do community college students perceive the characteristics of campus landscapes?
2. What characteristics of the campus landscape do community college students consider to be most salient for their well-being?
3. How do community college students describe the campus landscape attributes that contribute to or impede their success?

3. Results

My research questions sought to reveal more fully the essences and meanings of community college students' lived experiences with the campus landscape. Data analysis identified three unifying themes from the questionnaires, Photovoice collection, and specifically the interviews:

- (a) Appreciation
- (b) Recuperation
- (c) Connection

The questionnaire's initial Likert-scale items focused on the behavioral and physical aspects of the campus, including aesthetics, seating availability, and whether the landscape promoted relaxation. Most participants found the campus visually appealing and relaxing, with many appreciating the presence of trees and plants. However, fewer participants felt that the landscape influenced their decision to attend, and many expressed concerns about campus safety. Open-ended responses revealed a desire for more greenery, art installations, and features such as water elements, animal habitats, and comfortable shaded seating. Participants also suggested functional improvements, including better food options, labeled buildings, and the addition of recreational or contemplative spaces, such as hammocks or a labyrinth.

Photovoice empowered participants to document their campus landscape experiences through over 400 photographs, and the interview allowed for deep reflective discussions. The images revealed a strong appreciation for naturalistic settings—especially trees—which students associated with relaxation, study, privacy, and stress relief. These photographs captured diverse perspectives of shared spaces, shaped by students' connections to familiar and new environments. While nature scenes were favored, modern campus buildings were featured and described as clean, iconic, and supportive. Overall, the visual method sparked meaningful dialogue and allowed students to express how the landscape supported their well-being.

Appreciation

A central theme that emerged across interviews and photo collections was the appreciation of the campus landscape. Participants responded positively to naturalistic environments' visual and sensory richness, expressing preferences for well-maintained lawns, shade trees, and colorful plants. They also favored contemporary buildings and landscapes with varied and engaging elements. This theme addressed the first research question: "How do community college students perceive campus landscape characteristics?"

Participants consistently articulated their enjoyment of specific landscape features and patterns in their responses, and their photo selections reinforced this shared sense of appreciation. However, understanding how students experienced these spaces was just as important as identifying their preferences. Students responded to the visual and

experiential complexity of the landscape, expressing a desire for settings that offered relaxation, stimulation, comfort, and a sense of safety—spaces with shade, greenery, flexible seating, and natural beauty supported stress relief and recovery. While engaging landscapes sparked conversations, curiosity, and shared enthusiasm, dull or uninspired environments were less appealing.

Students were especially drawn to the processes of growth and change in plants, observing their development, transformation, and resilience. For many, nature was an intellectually rich and emotionally resonant environment that inspired reflection, discovery, and learning outside the classroom. Several participants connected these natural cycles to their academic and personal growth, finding comfort in the reminder that change is constant and challenges are temporary. These connections to nature not only supported their well-being but also helped them navigate stress and anxiety.

Recuperation

The theme of recuperation emerged prominently in this study, highlighting the critical role of the campus landscape in supporting students' psychological well-being. This finding aligns with existing research on the positive effects of natural environments on stress reduction and emotional recovery (Bowler et al., 2010; Bratman et al., 2021; Keniger et al., 2013; Lopes, 2020). Over half of the participants described using the campus landscape to relieve stress, restore positive thoughts, and recover after facing academic or personal challenges. Students frequently identified personal, restorative spaces—such as tree-filled areas, rocks, and hidden ponds—that offered solitude, quiet reflection, and a sense of connection with the natural world. Secluded “nooks and crannies” were particularly valued for their calming qualities and sense of refuge, where students could retreat from the demands of college life.

Participants consistently emphasized that these natural settings were aesthetically pleasing and essential to their mental health and academic persistence. The ability to take breaks in peaceful, nature-filled spaces allowed them to recharge and regain focus, thereby supporting their ability to cope with daily stressors. In contrast, poorly maintained or uncomfortable areas—like barren lawns, uncomfortable seating, or neglected landscaping—undermined this recuperative effect. Students noted that such neglected environments made them feel undervalued, highlighting the importance of intentional landscape design that fosters well-being and belonging.

This balance between restorative and neglected spaces points to a broader consideration: campuses should include natural elements and maintain them thoughtfully to ensure they remain inviting and beneficial. The presence of thoughtfully designed, well-kept outdoor spaces signals institutional care, while neglected areas can convey a lack of regard for students' needs. By prioritizing recuperative landscapes, colleges can enhance students' well-being and their sense of being valued within the campus community.

Connection

Participants' images and reflections revealed deep emotional and social connections to specific campus spaces, particularly buildings and outdoor areas they frequented for classes, services, work, or socializing. These familiar and meaningful places often became a “second home,” contributing to students' sense of identity, belonging, and motivation. The landscape supported independent reflection and social interactions, fostering a sense of welcome and connection with friends, peers, and professors. Features such as school logos, well-maintained grounds, and casual meeting spaces were interpreted as symbols of institutional care and pride.

Through the Photovoice process and interviews, it became evident that students continually reinterpreted their environment to build relationships, enhance their sense of belonging, and support academic persistence. Students described how certain campus spaces helped them feel more rooted within the community, often associating these areas with personal growth and positive social experiences. In particular, naturalistic settings and iconic campus landmarks acted as touchpoints that reinforced their emotional attachment to the college. This connection was not only beneficial for personal well-being but also influenced how students navigated challenges, drawing strength from the familiar and supportive spaces around them. The data demonstrated that campus landscapes are not merely physical backdrops but integral components of students' identity, well-being, and engagement in college life. By providing spaces where students feel valued and connected, the campus landscape contributes to their overall college experience.

This study explored the lived experiences of community college students in relation to their campus landscape, revealing three unifying themes: Appreciation, Recuperation,

and Connection. Students expressed deep appreciation for naturalistic elements such as trees, colorful plants, and shaded seating areas, contributing to visual pleasure and emotional well-being. They consistently preferred sensory-rich environments over dull or poorly maintained spaces, and their responses indicated a strong desire for landscapes that stimulate curiosity, offer comfort, and support relaxation.

4. Findings

The findings of this study reveal that students' perceptions of the campus landscape significantly influence where they spend time and how they engage in campus life. When viewed through student development literature, these perceptions are critical, emphasizing the connection between belonging, satisfaction, and academic success (Astin, 1984; Pascarella & Terenzini, 2005). While landscaping is common across campuses, this study highlights that intentional design, quality, and maintenance make a difference. Students were acutely aware of whether their campus landscapes were cared for—and interpreted that care, or lack thereof, as a reflection of how valued they were by the institution. These responses directly connect with the broader literature on student belonging, mattering, and retention (Strayhorn, 2018; Strange & Banning, 2015).

The study's five key findings—centered around water features and naturalistic settings, contemplative windows, psycho-physiological health, environmental excellence, and place attachment—support three core themes: Appreciation, Recuperation, and Connection. These themes highlight the crucial role of the campus landscape in supporting students' mental health, academic motivation, and social integration. Students who encounter visually engaging, well-maintained spaces are more likely to feel at ease, valued, and inspired. Conversely, neglected or uninspired areas—such as barren lawns or uncomfortable seating—undermine students' emotional connection to the institution and, in some cases, amplify feelings of disconnection or invisibility.

Thus, the discussion shifts from interpretation to action: What can campus leaders do with this information? How can the physical environment be leveraged as a backdrop and a strategic asset for student success?

5. Discussion and Implications

While the qualitative nature of the study and its setting in six urban Southern California community colleges limit generalizability, the findings present important implications for institutional planning. Despite potential self-selection bias from participants with a preexisting interest in landscape aesthetics, the breadth and depth of responses suggest widespread relevance. At its core, this research offers an underutilized lens for understanding and supporting student well-being—the campus landscape as a pivotal emotional, psychological, and developmental touchpoint.

The following four recommendations are grounded in both empirical findings and existing literature:

1. Establish the Campus Landscape as a Principal Asset

Outdoor spaces must be central to the student experience—not peripheral. College leaders should prioritize transforming low-quality or neglected areas into welcoming, functional, and meaningful spaces, including aligning landscape planning with the institution's mission and utilizing student feedback to inform and guide improvements.

2. Increase Alternative Campus Landscape Spaces

Campuses should offer a range of landscape settings that accommodate different student needs, from solitary study to social interaction. Spaces featuring trees, vibrant plants, water features, and flexible, comfortable seating will encourage use and promote well-being and creativity. Importantly, students should be able to customize their use of outdoor spaces to suit changing moods and tasks.

3. Connect Students to the Outdoor Landscape

Designing for connectivity between indoor and outdoor environments—such as through large windows, natural lighting, or accessible green areas—enhances students' mental health and learning. Integrating outdoor spaces into academic programming, such as utilizing gardens or quads as learning labs, can deepen students' connection to their surroundings and promote interdisciplinary engagement.

4. Embed Intentional Landscape Design into Campus Planning

Intentionality must become the standard. Beautiful, well-maintained, and symbolically rich landscapes—featuring recognizable icons, meaningful landmarks, and inviting textures—should be integral to institutional design. These features promote place attachment, reduce stress, and reinforce the idea that students matter, supporting persistence and academic engagement.

6. Conclusions

This study was initially prompted by a deeply affecting event: a young woman, visibly distressed, entered my department in search of relief from an anxiety attack, pleading to be near green plants to calm her nerves. This urgent need for proximity to nature underscores the critical role that campus landscapes can play in supporting students' mental and physical well-being (Gillen-O'Neel, 2019; Peker & Ataov, 2020; Rakow & Eells, 2019; Strange & Banning, 2015). The primary aim of this study was to explore how phenomenological investigations into students' perceptions of campus landscapes can inform campus design and planning.

This study marks a significant first step in understanding community college campus landscapes from a student-centered perspective. Specifically, it examines (a) how community college students perceive the attributes of their campus landscapes, (b) which landscape features students identify as most crucial to their well-being, and (c) how students describe the landscape attributes that either promote or impede their academic success. This study positions the campus landscape as more than aesthetic—it is relational, symbolic, and functional. Through intentional, student-centered design, community colleges can utilize their outdoor environments to foster a sense of belonging, support students' mental and emotional well-being, and enhance institutional commitment. As the demands on today's students grow, so must the campus environments supporting them.

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Data Availability Statement: Please contact the author for data sets or CSUF Dissertation ORCID-ID: 0000-0003-3602-5296.

References

- Abdelaal, M. (2019). Biophilic campus: An emerging planning approach for a sustainable innovation-conducive university. *Journal of Cleaner Production*, 215(2019), 1445–1456. <https://doi.org/10.1016/j.jclepro.2019.01.185>
- Abraham, A., Sommerhalder, K., & Abel, T. (2010). Landscape and well-being: A scoping study on the health-promoting impact of outdoor environments. *International Journal of Public Health*, 55(1), 59–69. <https://doi.org/10.1007/s00038-009-0069-z>
- Arria, A. M., Caldeira, K. M., Vincent, K. B., Winick, E. R., Baron, R. A., & O'Grady, K. E. (2013). Discontinuous college enrollment: Associations with substance use and mental health. *Psychiatric Services*, 64(2), 165–172. <https://doi.org/10.1176/appi.ps.201200106>
- Atchley, R. A., Strayer, D. L., & Atchley, P. (2012). Creativity in the wild: Improving creative reasoning through immersion in natural settings. *PLoS ONE*, 7(12), e5147. <https://doi.org/10.1371/journal.pone.0051474>
- Bailey, T., Alfonso, M., Calcagno, J. C., Jenkins, D., Kienzl, G., & Leinbach, D. T. (2004). *Improving student attainment in community colleges: Institutional characteristics and policies Report*. Columbia University, Teachers College, Community College Research Center. <http://www.tc.columbia.edu/ccrc/public.htm>
- Baird, L. L. (1990). Campus climate: Using surveys for policy-making and understanding. *New Directions for Institutional Research*, 68(Winter), 35–45.
- Falk, J. H., & Balling, J. D. (2010). Evolutionary influence on human landscape preference. *Environment and Behavior*, 42(4), 479–493. <https://doi.org/10.1177/0013916509341244>
- Banning, J. H. (2016). *Campus ecology and university affairs: History, applications, and future: A scholarly personal narrative*. TerraCotta Publishing.
- Banning, J. H. (2018). *Campus artifacts as diversity messages: A photographic approach*. TerraCotta Publishing.
- Banning, J. H., & Kaiser, L. (1974). An ecological perspective and model for campus design. *Personnel and Guidance Journal*, 52(6), 370–375. <https://doi.org/10.1002/j.2164-4918.1974.tb04043.x>
- Banning, J. H., Clemons, S., McKelfresh, D., & Gibbs, R. W. (2010). Special places for students: Third place and restorative place. *College Student Journal*, 44(4), 906–912.
- Barr, M. J., & McClellan, G. S. (2018). *Budgets and financial management in higher education*. Jossey-Bass Publishing.
- Berto, R. (2014). The role of nature in coping with psycho-physiological stress: A literature review on restorativeness. *Behavioral Sciences*, 2014(4), 394–409. <https://doi.org/10.3390/bs4040394>
- Bowler, D. E., Buyung-Ali, L., Knight, T. M., & Pullin, A. S. (2010). A systematic review of evidence for the added benefits to health of exposure to natural environments. *BMC Public Health*, 10(456), 1–10. <https://www.biomedcentral.com/1471-2458/10/456/>
- Boys, J., Melhuish, C., & Wilson, A. (2014). *Developing research methods for analyzing learning spaces that can inform institutional missions of learning and engagement*. Society for College and University Planning. <https://www.scup.org/resource/developing-research-methods-for-analyzing-learning-spaces-that-can-inform-institutional-missions-of-learning-and-engagement/>
- Bratman, G. N., young, G., Mehta, A., Babineaux, I. L., Daily, G. C., Gross, J. J. (2021). Affective benefits of nature contact: The role of rumination. *Frontiers in Psychology*, 12(3), 1–9. <https://doi.org/10.3389/fpsyg.2021.643866>
- Chapman, M. P. (2009). Creating global-ready places: The campus community connection. *The Society for College and University Planning*, 37(4), 4–15. <https://www.scup.org/resource/creating-global-ready-places/>
- Charmaz, K. (2014). *Construction Grounded Theory*. Sage Publications Ltd.
- Dober, R. P. (1992). *Campus design*. John Wiley & Sons.
- Dober, R. P. (2000). *Campus landscape: Functions, forms, features*. John Wiley & Sons.
- Dyson, R., & Renk, K. (2006). Freshmen adaptation to university life: Depressive symptoms, stress, and coping. *Journal of Clinical Psychology*, 62(10), 1231–244. <https://doi.org/10.1002/jclp.20295>

- Föllmer, J., Kistemann, T., Anthonj, C. (2020). *Academic greenspace and well-being – Can campus landscape be therapeutic? Evidence from a German University*. Well-being, Space and Society. <https://doi.org/10.1016/j.wss.2020.100003>
- Gillen-O'Neel, C. (2019). *Sense of belonging and student engagement: A daily study of first- and continuing-generation college students*. Research in Higher Education. <https://doi.org/10.1007/s1162-019-09570-y>
- Gopalan, M. & Brady, S. T. (2020). College students' sense of belonging: A national perspective. *Educational Researcher*, 49(2), 134–137. <https://doi.org/10.3102/0013189X19897622>
- Grahn, P., & Stigsdotter, U. K. (2009). The relation between perceived sensory dimensions of urban green space and stress reduction. *Landscape and Urban Planning*, 94(2010), 264–275. <https://doi.org/10.1016/j.landurbplan.2009.10.012>
- Hajrasouliha, A. H. (2019). Connecting the dots: Campus form, student perceptions, and academic performance. *Focus*, 15(1), 39-48. <https://digitalcommons.calpoly.edu/focus/vol15/iss1/12>
- Harper, S.R., & Quaye, S.J. (Eds.). (2009). *Student engagement in higher education: Theoretical perspectives and practical approaches for diverse populations*. Routledge.
- Hartig, T., van den Berg, A., Hagerhall, C.M., Tomalak, M., Bauer, N., Hansmann, R., Ojala, A., Syngollitou, E., Carrus, G., van Herzele, A., Bell, S., Podesta, M. T. C., & Waaseth, G. (2011). Health benefits of nature experiences. In K. Nilsson, M. Sangster, C. Gallis, T. Hartig, S. de Vries, K. Seeland, & J. Schipperijn (Eds.), *Forests, trees and human health* (pp. 127-168). Springer.
- Heerwagen, J. H. & Orians, G. H. (1993). Humans, habitats, and aesthetics. In S. R. Kellert & E. O. Wilson (Eds.), *The biophilia hypothesis*, 138–172. Island Press.
- Heidegger, M. (2008). On the essence of truth (J. Sallis, Trans.). In D. F. Krell (Ed.), *Basic writings* (pp. 111-138). Harper Perennial Modern Thought. (Original work published 1961)
- Herzog, T. R., Maguire, C. P., & Nebel, M. B. (2003). Assessing the restorative components of environments. *Journal of Environmental Psychology*, 23(2003), 159–170. <https://doi.org/10.1016/j.jevp.2003.02.001>
- Hipp, J. A., Gulwadi, G. B., Alves, S., & Sequeira, S. (2016). The relationship between perceived greenness and perceived restorativeness of university campuses and student-reported quality of life. *Environment and Behavior*, 48(10), 1292–1308. <https://doi.org/10.1177/0013916515598200>
- Hoachlander, G., Sikora, A., & Horn, L. (2003). *Community college students: Goals, academic preparation, and outcomes* (NCES Report No. 2003-164). U.S. Department of Education, National Center for Education Statistics. <http://nces.ed.gov/pubs2003/2003164.pdf>
- Hodson, C. B., & Sander, H. A. (2017). Green urban landscape and school-level academic performance. *Landscape and Urban Planning*, 160(2017), 16–27. <https://doi.org/10.1016/j.landurbplan.2016.11.011>
- Holt, E. W., Lombard, Q. K., Best, N., Smiley-Smith, S., & Quinn, J. E. (2019). Active and passive use of green space, health, and well-being amongst university students. *International Journal of Environmental Research and Public Health*, 16(2019), 1–13. <https://doi.org/10.3390/ijerph16030424>
- Kaplan, R., & Kaplan, S. (1982). *Cognition and environment: Functioning in an uncertain world*. Praeger Publishers.
- Kaplan, R., & Kaplan, S. (1989). *The experience of nature: A psychological perspective*. Cambridge University Press.
- Kaplan, R., Kaplan, S., Ryan, R. (1998). *With people in mind: Design and management of everyday nature*. Island Press.
- Kaplan, S. (1995). The restorative benefits of nature: toward an integrative framework. *Journal of Environmental Psychology*, 15, 169–182. https://willsull.net/la270/LA_270_Readings/LA_270_Readings_files/Kaplan%201995.pdf
- Kaplan, S., & Berman, M. G. (2010). Directed attention as a common resource for executive functioning and self-regulation. *Perspectives on Psychological Science*, 1(1), 43–57. <https://doi.org/10.1177/1745691609356784>
- Kellert, S. R. (2013). Dimensions, elements, and attributes of biophilic design. In S. R. Kellert, J. H. Heerwagen, & M. L. Mador (Eds.), *Biophilic design: The theory, science, and practice of bringing buildings to life* (pp. 3–19). John Wiley & Sons.

- Kellert, S. R., Heerwagen, J. H., & Mador, M. L. (2013). *Biophilic design: The theory, science, and practice of bringing buildings, to life*. Wiley.
- Kellert, S. R., & Wilson, E. O. (1993). *The Biophilia Hypothesis*. Island Press. <https://doi.org/10.1177/027046769501500125>
- Keniger, L. E., Gaston, K. J., Irvine, K. N., & Fuller, R. A. (2013). What are the benefits of interacting with nature? *International Journal of Environmental Research and Public Health*, 10(3), 913–35. <https://doi.org/10.3390/ijerph10030913>
- Lopes, S., Lima, M., & Silva, K. (2020). Nature can get it out of your mind: The rumination reducing effects of contact with nature and the mediating role of awe and mood. *Journal of Environmental Psychology*, 71(2020), 1–7. <https://doi.org/10.1016/j.jenvp.2020.101489>
- Lu, M., & Fu, J. (2019). Attention restoration space on a university campus: Exploring restorative campus design based on environmental preferences of students. *International Journal of Environmental Research and Public Health*, 16(14), 2629–2648. <https://doi.org/10.3390/ijerph16142629>
- Marmot, A. (2006). *21st century learning space design*. Higher Education Funding Council for England. <https://doi.org/10.13140/RG.2.2.22776.24321>
- Maxwell, J. A. (2013). *Qualitative research design: An interactive approach*. Sage Publications.
- Melidona, D., Taylor, M. & McNamee, T. C. (2021). *2021 Fall term pulse point survey of college and university presidents*. American Council on Education. <https://www.acenet.edu/Research-Insights/Pages/Senior-Leaders/Presidents-Survey-Fall-2021.aspx>
- Merleau-Ponty, M., (2005). *Phenomenology of perception*. (K. Paul, Trans., Routledge Classics, Vol. 85, 2nd ed.). Routledge. (Original work published 1945)
- National Center for Education Statistics. (2017). *Measuring competency proficiency: The career readiness pilot project*. <https://www.naceweb.org/career-readiness/trends-and-predictions/measuring-competency-proficiency-the-career-readiness-pilot-project/>
- Norizan, M. A., Sakip, S., Abbas, M. Y., & Othman, N. (2018). Landscape spatial character: Students' preferences on outdoor campus spaces. *Asian Journal of Quality of Life*, 3(13), 89–97. <https://doi.org/10.21834/ajqol.v3i13.165>
- Olszewska_Guizzo, A. (2023). *Neuroscience for Designing Green Spaces: Contemplative Landscapes*. Routledge.
- Ottosson, J., & Grahn, P. (2008). The role of natural settings in crisis rehabilitation: How does the level of crisis influence the response to experiences of nature with regard to measures of rehabilitation? *Landscape Research*, 33(1), 51–70. <https://doi.org/10.1080/01426390701773813>
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students* (3rd ed.). Jossey-Bass Publishing.
- Peker, E., & Ataov, A. (2020). Exploring the ways in which campus open space design influences students' learning experiences. *Landscape Research*, 45(3), 310–326. <https://doi.org/10.1080/01426397.2019.1622661>
- Peoples, K. (2021). *How to write a phenomenological dissertation: A step-by-step guide*. Sage Publications.
- Rakow, D. A., & Eells, G. T. (2019). *Nature Rx: Improving college-student mental health*. Cornell University Press.
- Rawson, H. E., Bloomer, K., & Kendall, A. (1994). Stress, anxiety, depression, and physical illness in college students. *Journal of Genetic Psychology*, 155(3), 321–330. <https://doi.org/10.1080/00221325.1994.9914782>
- Rendón, L. I. (1994). Validating culturally diverse students: Toward a new model of learning and student development. *Innovative Higher Education*, 19(1994), 33–51. <https://doi.org/10.1007/BF01191156>
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68–78. <https://doi.org/10.1037/0003-066X.55.1.68>
- Schuetz, P. (2005). Campus environment: A missing link in studies of community college attrition. *UCLA Community College Review*, 32(4), 60–80. <https://doi.org/10.1177/009155210503200405>

- Speake, J., Edmondson, S., & Nawaz, H. (2013). Everyday encounters with nature: Students' perceptions and use of university campus green spaces. *Journal of Studies and Research in Human Geography*, 7(1), 21–31.
<https://doi.org/10.5719/hgeo.2013.71.21>
- Strange, C. C. (2003). Dynamics of campus environments. In S. Komives & D. Woodard, Jr. (Eds.), *Student services: A handbook for the profession* (4th ed., pp. 242–316). Jossey Bass Publishing.
- Strange, C. C. (2014, June). *Navigating campus spaces to promote engagement: It's about brick and stones!* [Presentation]. Canadian Association of Colleges and University Student Services Annual Conference, Halifax, NS.
- Strange, C. C., & Banning, J. H. (2001). *Educating by design: Creating campus learning environments that work*. Jossey-Bass Publishing.
- Strange, C. C., & Banning, J. H. (2015). *Designing for learning: Creating campus environments for student success* (2nd ed.). Jossey-Bass Publishing.
- Strayhorn, T. (2018). *College students' sense of belonging: A key to educational success for all students*. Routledge.
- Temple, P. (Ed.). (2014). *The physical university: Contours of space and place in higher education*. Routledge.
- Turner, P. V. (1984). *Campus: An American planning tradition*. The MIT Press.
- Ulrich, R. S. (1979). Visual landscapes and psychological well-being. *Landscape Research*, 4(1), 17–23.
<https://doi.org/10.1080/01426397908705892>
- Ulrich, R. S. (1983). Aesthetic and affective response to natural environment. In I. Altman & J. F. Wohlwill (Eds.), *Behavior and the natural environment* (pp. 85–125). Springer. https://doi.org/1007/978-1-4613-3539-9_4
- Ulrich, R. S. (1984). View through a window may influence recovery from surgery. *Science*, 224(4647), 420–421.
<https://doi.org/10.1126/science.6143402>
- Ulrich, R. S. (1993). Biophilia, biophobia & natural landscape. In S. R. Kellert & E. O. Wilson (Eds.), *The Biophilia Hypothesis* (pp. 73–137). Island Press.
- Ulrich, R. S., Simons, R. F., Losito, B. D., Fiorito, E., Miles, M. A., & Zelson, M. (1991). Stress recovery during exposure to natural and urban environments. *Journal of Environmental Psychology*, 11(3), 201–230. [https://doi.org/10.1016/S0272-4944\(05\)80184-7](https://doi.org/10.1016/S0272-4944(05)80184-7)
- Wu, C-D., McNeely, E., Cedeño-Laurent, J. G., Pan, W-C., Adamkiewicz, G., Dominici, F., Lung, S-C. C., Su, H., & Spengler, J. D. (2014). Linking student performance in Massachusetts elementary schools with the “greenness” of school surroundings using remote sensing. *PLoS ONE*, 9(10), e108548. <https://doi:10.1371/journal.pone.0108548>
- Yaylali-Yildiz, B., Czerkauer-Yamu, C., & Çil, E. (2014). Exploring the effects of spatial and social segregation in university campuses: IZTECH as a case study. *Urban Design International*, 19(2014), 125–143. <https://doi.org/10.1057/udi.2013.19>