SESSION 01-02 RENDERING + MODELING NARRATIVES

Design Narratives in Studio Settings

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1. Introduction

1.1 Purpose

This study examines the practices for developing design narratives in architectural studio teaching settings. Conveyed in jargons such as design reference, inspirational concept, or philosophical position, design narrative development is a common practice in architectural education. We observe that narrative development process in design studios is hardly defined, practiced at different level of coherence and rigor from one studio offering to the other. To help define the process, we followed a line of explorations to assess two main issues. The first is the narrative declaration and presentation with the aim of understanding how students articulate and present their narratives. Representing Research Question 1, this issue considers the verbal and graphic content of student project submission. The second issue is the use of architectural elements to develop narratives with the aim of understanding what spatial and architectural elements of the project students choose to build up their design narratives. Representing Research Question 2, this issue considers site elements, building exterior elements, and interior elements.

1.2 Questions and Premises

These two issues are represented in Tables 1 & 2 below led by the respective questions and the associated research premises and hypnotized incongruities.

Research Question 1	
Narrative declaration and presentation	
Research Premises	Hypothesized Incongruities
- Students have sufficient understanding of the area of narrative - Students have compatible presentation skills to convey the narrative verbally and graphically	- Students tend to struggle researching and declaring a sound area of content. - Students tend to struggle deciding on compatible modes of presentation for the narratives.

Table1. Research Question 1 and associated premises and incongruities

Research Question 2	
Using the project's architectural elements to realize narratives	
Research Premises	Hypothesize Incongruities
Project givens typically provide opportunities to enrich narrative realization by using ample elements of site, building, and interior	Students tend to choose obvious and sporadic elements, not capitalizing on the ample opportunities of the site-building-interior spectrum.

Table2. Research Question 2 and associated premises and incongruities

1.3 Research Design

The study employs theoretical and empirical sources of information. The theoretical sources include works on narrative treatment in the disciplines in general, and on narrative as a topic of broad interest in the art and design fields. Parallel sources on the narrative use in architecture, and more pointedly, in the design studio complement the sources. For empirical data, the study draws on the output materials of design studio projects that have been administered at three architecture programs comprising Bowling Green State University, Ohio; Effat University, Saudi Arabia;

and, Tuskegee University, Alabama. The variations in the narrative development outlooks provide an opportunity for running a series of analyses as part of the research design. Upon selecting examples of student project submissions for the fourth-year undergraduate studios in the three programs' studios, the following main tasks proceed: a) analyzing and characterizing narrative declaration and presentation, and b) identifying and assessing the use of the project elements of site, building exterior, and interior. A set of narrative assessment indicators and performance scale were devised and set for use in a designed assessment process.

2. Literature Review

Narrative flourishes in use in casual interactions and in academic discourses. Narrative implies the intent of the narrator (a writer or designer) and, accordingly, aims to support the view on an issue at hand. Conversely, narrative seeks receptiveness on the part of the audience (readers or observers). Dubbed as a story or account by Miriam Webster, it is also described as "a way of presenting or understanding a situation or series of events that reflects and promotes a particular point of view or set of values."[1] Encyclopedia Britannica goes further to assert a series of narrative associated forms including plot, fiction, folktale, legend, and setting, among others.[2]
Narrative is discussed below in relation to "disciplines," art and design, architecture, and design studio.

2.1 In the Disciplines

Narrative in politically motivated settings energizes with "subjective interpretations, manipulative rhetoric and power-seeking behaviour" invariably exercised by different actors as parts of their competing stories.[3] Narratives inform about historical, cultural, or political issues. Mühlberger and Alaranta argue that "Political life narratives have emerged in Zimbabwe and elsewhere to contest, rebut, or corroborate versions of official history…"[4] Narratives in defense of mother earth echo in the global recognition of the impending calamities as discussed in the 2021 Glasgow UN Climate Change Conference. Narratives map the relationship between nature and human agency overtime as Rigby vividly describes.[5] The author contrasted the historical narrative of God's punishment with the scientific interpretation of fires and other natural calamities.[6]

2.2 In the Arts and Design Fields

Narratives influence what the artist wants to create. Bassie-Sweet and Hopkins discuss the relationship between the narrative and associated creation in Maya art.[7] The authors further elaborate on the relationship of the text and hieroglyphic representations.[8] On the narrative demand of acting, Corrie and Lane explain: "an actor is faced with a swirling mass of impressions: of language, of emotion, of character, of argument, of style, of shape. But the first, all-important and insistent question is: what is the story?"[9]

2.3 In Architecture

The reference idea and the imagined form come together to weave a narrative story for a building, an urban ensemble, or a designed landscape. Ching-Pin asserts "the relationship between the construction of spatial narrative and the substance of architectural spaces"[10] becomes crucial for understanding how design ideas transcend to environmental compositions. Narrative "concerns the semantic meanings of buildings and places, and the contribution of architecture to the expression of social and cultural messages….It also participates in the construction of meaning through the ordering of spaces and social relationships".[11]

2.4 In Design Studios

Scholarly reviews of narrative practices and experiments in design studio teaching are rare. This is ironic since narrative seems invariably a player in the design studio offerings. Still some writers cast light on the narrative in the pedagogic design studio. Liang provided a comprehensive review of the use of narrative observed in a series of studio administrations pointing to "the story behind each design scheme."[12] Gulmez et al address narrative "as a vehicle and an opportunity for self-expression and discovery for first-year students."[13] The authors assert that narrative forms like literature and performance are used as methods of exploration.[14]

3. Research Design

The research design articulates distinct sets of data and analysis techniques associated with respective objectives. Under this synchronized research design/objective set-up, the triad subject of the study—BGSU, Effat, and Tuskegee design studios—entails

the application of this methodical design to each member of the triad.

3.1 Selection of Example Narratives

Selecting the narrative examples of the student design projects is the first step. Two narrative examples per program were found feasible. This is based on the ability to address the performance indicators (discussed in the next two sub-sections). The six selected examples of student project submissions are all product of fourth-year undergraduate assignments administered at varied academic terms.

The selected projects are designated as follows: a) for BGSU studio: BU Project 1 and BU Project 2; b) for Effat studio: EU Project 1 and EU Project 2; and, c) for Tuskegee: TU Project 1 and TU Project 2. These projects are used to characterize the narratives and the concomitant architectural forms as discussed in Sections 4, 5, and 6.

3.2 Methods Supporting Objective 1: Analyzing and Characterizing Narrative Declaration and Presentation

This objective considers performance indicators, performance scale, and assessment process. The performance indicators include: a) Verbal leverage: the written content through its substantive aspects of relevance, conciseness, and association and the language facets of clarity and structure in the submission materials; b) Graphic capability: the effect of the graphic content through its substantive aspects of relevance, conciseness, and association; and the presentation facets of composition and organization in the submission materials; c) Coherence of the message: The overall effect of the narrative emanating from the reciprocated reinforcement of the verbal and graphic treatment.

The above indicators for the assessment of the narrative declaration and presentation in design studios are used to arrive at a specific level of performance. Paired with a verbal descriptor and numerical weights, these levels are: A, High, 4 points; B, Good, 3 points; C, Fair, 2 points; D, Low, 1 point. Bringing the performance indicators and performance scale into the performance assessment process, we obtain the assessment scheme that has been applied to each program studio analysis as discussed in Sections 4, 5, and 6.

3.3 Methods Supporting Objective 2: Identifying and Assessing the Use of the Project Narrative Across the Site-Building Exterior-Building Interior Spectrum

This objective involves two tasks. First, identifying the affiliation of the elements used. This is assessed through examining the submission materials to estimate the share of narrative elements attributed to the project site, exterior, and interior. This share is expressed comparatively in percentages; for example, 20%, 45%, 35% for site, exterior, and interior, respectively. Second, assessing the associated narrative performance. This is done through the two performance indicators: a) Narrative legibility and readability, implying the value of a decipherable message; and b) Narrative persistence implying the value of presence throughout the project presentation materials?

The narrative legibility and persistence indicators for the assessment of the use of the project narrative across the site-exterior-interior spectrum in design studios are used to arrive at a specific level of performance. The level scale used here is the same used under Objective 1 above—A, High, 4 points; B, Good, 3 points; C, Fair, 2 points; D, Low, 1 point. Bringing the performance indicators and performance scale into the performance assessment process, we obtain the assessment scheme that has been applied to each studio analysis as discussed in Sections 4, 5, and 6.

4. BGSU Design Studio Narrative Assessment

4.1 The Assignment

The studio under consideration is the Design Studio 5 administered in Spring 2022, the last studio in the four-year Bachelor of Science in Architecture. The assignment's design project was the "Mauritius Center on Ecology & Heritage" in Mauritius. The main parameters of the project include: a) Purpose: Will contribute to the ecological and heritage protection; b) Project site: Located in the Batterie De l'Harmonie, a Heritage Site in Mauritius's southwest part encompassing five historically significant resources such as the Battery Wall and Martello Tower; c) Space program: Addresses four main components: research, training, convening, and public education; d) Submissions: Include basic submission materials conveying the overall design intent, and interpretive submissions conveying the detail resolution of specific

aspects, such as sustainability; d) Design criteria: Form & vision; program & users; historic context; ecological context; technical systems & materials; accessibility & safety; and, communication; and, e) Project phases & reviews: Four design reviews, at 3-4 weeks intervals.

4.2 The Example Projects

Out of the 17 project submissions, two are selected as a domain of data for the study (Figure 1 and Figure 2). The selection is based on the versatility of the submission content to render clarity, and accordingly, validity for setting up the performance indicators slated to support the analysis for fulfilling Objective 1 and Objective 2—as shown below.
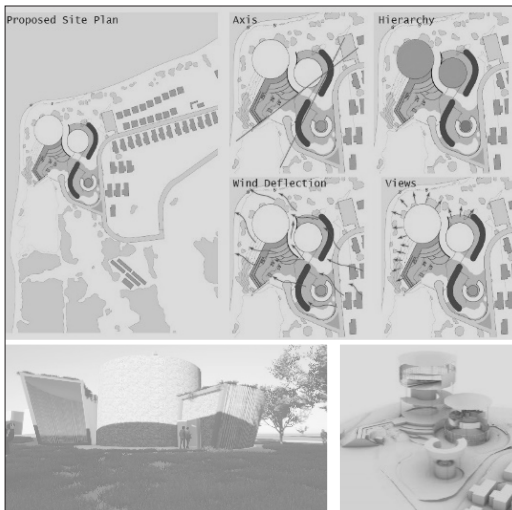

Figure 1. BU Project 1

The submissions of the selected projects, designated BU Project 1 and BU Project 2, are examined and analyzed using the assessment process established in Section 3, Research Design. The resulting characterization of the narratives and the concomitant architectural forms of the selected projects display in Tables 3 and 4.

4.3 Analyzing and Characterizing Narrative Declaration and Presentation (In Support of Objective 1)

Using the performance indicators, performance scale, and assessment process outlined in the Section

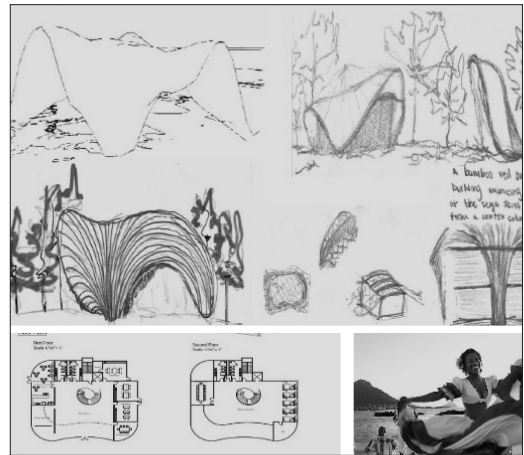3, Research Design, we obtain the results shown in Table 5.

Figure 2. BU Project 2

BU Project 1	
Narrative Aspects	Form
Built heritage based, responding to the geometric characteristics of the historic Martello Tower. Roundness of the Tower echo in curvilinear features of the buildings and in developing immediate site.	The roundness of the Tower echo in curvilinear features of the buildings and in developing immediate site. The roundedness of form further responds to wind movement.

Table 3. Analysis of BU Project 1

BU Project 2	
Narrative Aspects	Form
Intangible heritage based, embracing the national Saga dance.	The sensuous, in motion skirt profile of female dancers echo conspicuously in the modeling of the building elevations and roof surfaces. The form integrates upper windows for wind and helps capitalize on natural light.

Table 4. Analysis of BU Project 2

4.4 Identifying and Assessing the Use of the Project Narrative Across the Site-Exterior-Interior Spectrum (In Support of Objective 2)

The two tasks associated with Objective 2 were carried out in this manner: First, the task of identifying the elements used in expressing the narrative

produced the results shown in Table 6; second, the task of assessing the associated narrative performance produced the results shown in Table 7.

Project	Performance Indicators, Individually			Performance Indicators, Collectively	
	Verbal Leverage	Graphic Capability	Coherence of the Message	Sum	Ratio
BU Project 1	1.5	1	1	3.5	3.5/12
BU Project 2	2	1.5	3.5	7	7/12

Table 5. Analyzing and Characterizing Narrative Declaration and Presentation

Project	Elements Used		
	Site	B Ext.	B Int.
BU Project 1	35%	50%	15%
BU Project 2	20%	50%	30%

Table 6. identifying the elements used in expressing the narrative

Project	Performance Indicators, Individually		Performance Indicators, Collectively	
	Legibility & Readability	Persistence & Perpetuation	Sum	Ratio
BU Project 1	3	3.0	6	6/8
BU Project 2	3	3.5	6.5	6.5/8

Table 7. Assessing the associated narrative performance

5. Effat University Design Studio Narrative Assessment

5.1 The Assignment

The two projects selected for this study are derived from different offerings of the fourth-year design studio in the five-year Bachelor of Science in Architecture Program at Effat University. These advanced studios emphasized the integration of building systems and construction materials; and detailing architectural elements. Four short-term assignments were allocated in 2-3 weeks cycles.

These assignments stack as follows: a) Assignment 1 deals with research, program analysis, and conceptualization, emphasizing narrative exploration; b) Assignment 2 deals with developing a building outline, emphasizing the play between interior layout and exterior form; c) Assignment 3 deals with the interface of design precedents and design synthesis; and, d) Assignment 4 deals with bringing into line the building exterior and interior elements and integrating building systems.

5.2 The Example Projects

The two selected studio projects include: a) Project one, "Airport of the Future" (Figure 3), administered in Studio 8 of Fall 2014, and emphasized the future of public aviation architecture. The selected site, program needs, and building size of the project were guided by the capacities of the existing Jeddah International Airport; and b) Project two, "Students and Faculty Residence" (Figure 4), on Effatt University campus administered in Studio 7 of Fall 2016, and dealt with a variety of housing issues including daylight, modular construction, and social interaction. The project emphasized the balance between creativity, economic realities, and stakeholder interest.
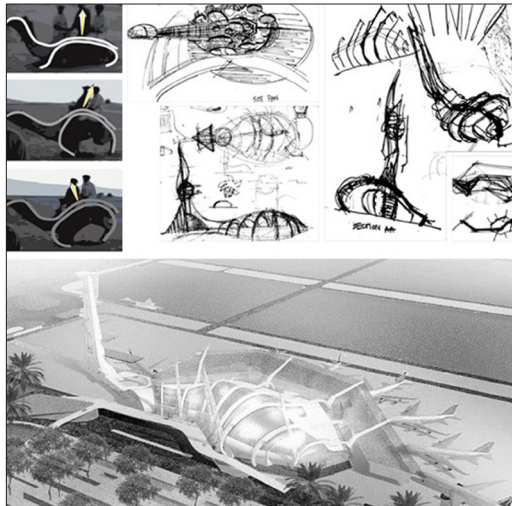

Figure 3. EU Project 1

The submission of the selected project, designated EU Project 1 and EU Project 2, are examined and analyzed using the assessment process established in Section 3, Research Design. The resulting characterization of the narratives and the concomitant architectural forms of the selected projects display in Tables 8 and 9.
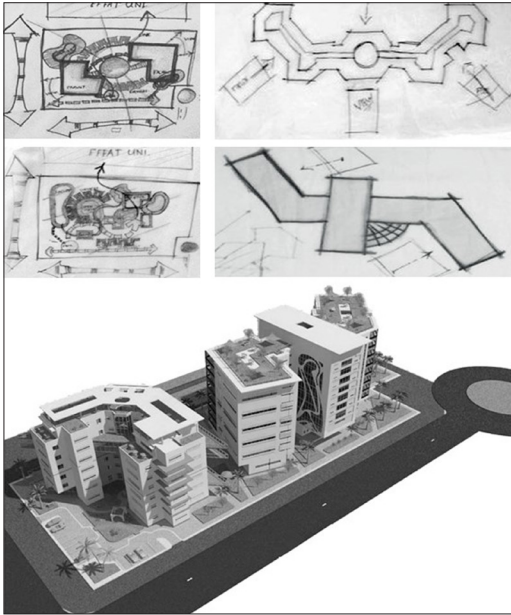

Figure 4. EU Project 1

EU Project 1	
Narrative Aspects	Form
Reflects the identity of Jeddah city. A cultural symbol for futuristic space exploration. Embodies the purity of ancient pilgrimage traditions and travel in the desert.	A dynamic form inspired by an animated Camel movement. Prominent traffic control tower for futuristic vision of travel. Exterior structural elements inspired by Camel features.

Table 8. Analysis of EU Project 1

EU Project 2	
Narrative Aspects	Form
Reflects livability and sustainability; and integrates movement flexibility and capitalizes on views between interior and exterior.	A linear/narrow form achieves a balance distribution of building blocks on site. A sense of a connected community and enhanced natural air ventilation.

Table 9. Analysis of EU Project 2

5.3 Analyzing and Characterizing Narrative Declaration and Presentation (In Support of Objective 1)

Using the performance indicators, performance scale, and assessment process outlined in the Section 3, Research Design, we obtain the results shown in Table 10.

Project	Performance Indicators, Individually			Performance Indicators, Collectively	
	Verbal Leverage	Graphic Capability	Coherence of the Message	Sum	Ratio
EU Project 1	3	3	3	9.5	9.5/12
EU Project 2	2.5	2.5	2.5	7.5	7.5/12

Table 10. Analyzing and Characterizing Narrative Declaration and Presentation

5.4 Identifying and Assessing the Use of the Project Narrative Across the Site-Exterior-Interior Spectrum (In Support of Objective 2)

The two tasks associated with Objective 2 were carried out in this manner. First, the task of identifying the elements used in expressing the narrative produced the results shown in Table 11. Second, the task of assessing the associated narrative performance produced the results shown in Table 12.

Project	Elements Used		
	Site	B Ext.	B Int.
EU Project 1	20%	40%	40%
EU Project 2	15%	50%	35%

Table 11. identifying the elements used in expressing the narrative

Project	Performance Indicators, Individually		Performance Indicators, Collectively	
	Legibility & Readabi.	Persistence & Perpetu	Sum	Ratio
EU Project 1	3.5	3.5	7	7/8
EU Project 2	2.5	3.0	5.5	5.5/8

Table 12. Assessing the associated narrative performance

6. Tuskegee University Design Studio Narrative Assessment

6.1 The Assignment

The studio under consideration is Design Studio Arch 401, a fourth-year course administered in Fall 2019 in the five-year Bachelor of Architecture Program. The assignment's design project was the Tuskegee Exhibition. The main parameters of the project include: a) Purpose: Will serve the outreach to industry through research and mixed use design; b) Project site located on Tuskegee University campus in Tuskegee, Alabama with the stipulation of 50% of area is available to build; c) Space program: Addresses the components of exhibition, museum, and educational zones; d) Submissions: Basic submission explaining design concept, building form, and details, and additional submission focusing on the design development steps; e) Design criteria: Technologies that increase efficiency; ease of the building use; and, passive and active sustainable strategies; f) Project phases & reviews: Three phases with three respective design reviews at 3-4 weeks intervals.

6.2 The Example Projects

Two projects are selected as a domain of empirical data for the study (Figure 5 and Figure 6). The selection is based on the versatility of the submission content to render clarity, and accordingly, validity for setting up the performance indicators slated to support the analysis for fulfilling Objective 1 and Objective 2—as shown below.
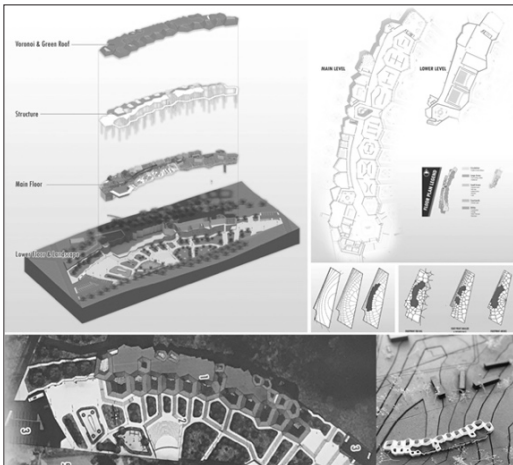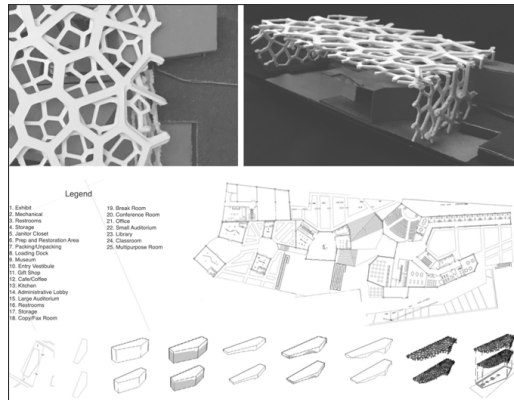

Figure 5. TU Project 1

Figure 6. TU Project 2

The submission of the selected projects, designated TU Project 1 and TU Project 2, are examined and analyzed using the assessment process established in Section 3, Research Design. The resulting characterization of the narratives and the concomitant architectural forms of the selected projects display in Tables 13 and 14.

TU Project 1	
Narrative Aspects	Form
Indoor-outdoor connectivity.	Efficiently establish packed cells that act as courtyards arranged linearly to create efficient plan layout and circulations.

Table 13. Analysis of TU Project 1

TU Project 2	
Narrative Aspects	Form
Conducive environment for learning and exhibiting students' work.	Develop shading devices in the form of a shell that covers multiple indoor and outdoor spaces.

Table 14. Analysis of TU Project 2

6.3 Analyzing and Characterizing Narrative Declaration and Presentation (In Support of Objective 1)

Using the performance indicators, performance scale, and assessment process outlined in the Section 3, Research Design, we obtain the results shown in Table 15.

6.4 Identifying and Assessing the Use of the Project Narrative Across the Site-Exterior-Interior Spectrum (In Support of Objective 2)

Table 16 assesses the use of the project narrative

across the site, building, and interior spaces. Table 17 assesses the associated narrative performance.

Project	Performance Indicators, Individually			Performance Indicators, Collectively	
	Verbal Leverage	Graphic Capability	Coherence of the Message	Sum	Ratio
TU Project 1	2.5	3.5	3	9	9/12
TU Project 2	2	2.5	2.5	7	7/12

Table 15. Analyzing and Characterizing Narrative Declaration and Presentation

Project	Elements Used		
	Site	B Ext.	B Int.
TU Project 1	40%	20%	40%
TU Project 2	25%	35%	40%

Table 16. Identifying the elements used in expressing the narrative

Project	Performance Indicators, Individually		Performance Indicators, Collectively	
	Legibility & Readability	Persistence & Perpetuation	Sum	Ratio
TU Project 1	2.5	3.5	6	6/8
TU Project 2	2.5	2.5	5	5/8

Table 17. Assessing the associated narrative performance

7. Conclusions and Discussion

This study has examined the practices for developing design studio through assessing a) how students articulate and present their narratives and, b) how students use the spatial and architectural elements of the project to build up their design narratives. Exploring the two issues points out to the validity of the research proposition, namely, the issues are of significance and have implications on alleviating ambiguities in narrative development. However, the implied fitness of the selected issues as research questions does not indicate the absence of other issues to consider.

In structure, the research design summons appropriate research components, including the main data source (design submission materials), the performance indicators, and the performance criteria. The assessment process triggered for each of the three architectural programs has assimilated these components; however, putting the research design into action reveals limitations. While two projects provided data to trigger the assessment process and helped control the scope of the research, the number seems short of representing the program studio collective narrative experience. As the paper claimed no intent to evaluate the success of the narrative development enterprise in studio offerings, the set-up, that is, the number of projects chosen has no bearing on the objectives of the paper. further, the exploratory objectives of the paper required no statistical sampling techniques, hence, settling with a few simple quantitative operations in an otherwise dominantly qualitative paper. Data collection efforts were rather discrete, depending largely on the respective studio instructor in interpreting the student work—with a degree of subjectivity creeping into the results. Again, this subjectivity does not depreciate the exploratory nature of the paper.

The narrative construct in design studio teaching is much less facilitated than in many fields as the literature review has revealed, rendering this paper efforts in clear relevance. In addition to the insight that this paper adds to the architectural pedagogy, there is a potential for adapting the results in studio teaching. The authors are contemplating such move to future studio offerings.

Notes

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[14]Ibid