Nontraditional Grading for Equitable Learning: Alternative Assessment in Architecture

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Professional architectural education in the United States has changed very little since its inception, outside of the technological evolution of structures and computing. History/theory courses, in particular, often represent a specific pattern of information processing: memorize, regurgitate, repeat. This instruction method can alienate students for whom memorization of historical dates or images and/or efficient essay writing are a challenge. With more students arriving in higher education with a broader spectrum of learning needs, evolving teaching strategies to meet these needs is paramount to the continued success of students in architecture.

This paper explores the benefits and constraints of using nontraditional grading practices, detailed rubrics, and integrated design projects in two architectural history/theory courses, focusing on student learning objectives and summative understanding of course material. Disrupting the stereotype of the "sage-on-the-stage" history/theory course, alternative teaching and grading that requires self-reflection and discourages adversarial discussion may help students better understand not only the content of history by its application as critical in the design process.

INTRODUCTION

Non-traditional grading practices have been a topic of discussion in secondary education for over a decade, focusing on institutionalizing equity within a hierarchical system.¹ These conversations have also emerged more recently in higher education, as institutions strive to provide for a diversity of students, including first-generation attendees, students with diagnosed learning disabilities, students from socio-economic disadvantaged backgrounds, undocumented students, and those who are ethnically, culturally, or religiously underrepresented.^{2,3} These diversities have translated to an increased spectrum of students enrolled in architecture programs around the country. Many are high-achieving in their secondary education and well-versed in historical contexts, beginning design practices, and/or advanced mathematics. Others may be artistically inclined and/or hardworking, with acceptance into an architectural education as the penultimate alley by which they will become a professional. Students may be first- or fourth-generation college attendants, or traveling to the United States for the first time. These scales of preparedness, natural talent, and learning styles illustrate the infinite ways in which design students engage with new information. Traditional point- or percentage-based grading may motivate a specific subset of these students, but can actively work against others.

Where the pedagogical objective is advancing student learning, how to assess this learning with consistent, measurable artifacts is challenging, particularly with regard to lecture or seminarbased support courses.

HISTORY STANDARDS IN ARCHITECTURAL EDUCATION

Architectural education in the United States has changed very little since its emergence in the 19th century. Modeled on European examples, American architectural schools have long emphasized a practical education in history, materials, building practices, structural stability, and design. While the profession has advanced substantially with the innovation/technology curve, history/theory courses have remained relatively static. These courses often require students to critically assess sources, images, and rhetoric to come to a full contextual understanding of the built environment. Traditional grading methods for architectural history have included quizzes and exams, slide identification, and research papers or essays, that ask students to regurgitate information given in lectures and/or textbooks. These strategies have proven to be unsustainable for long term memory of fact,⁴ and instead measure how much a student can memorize and repeat in the moment. These practices come from a tradition of the "sage-on-the-stage" lecturing from an elite perspective, even as instructors have transitioned to more personable and engaging methods. Programs that rely on humanities instructors for history/theory courses may have found student/professor ratios rising as a result of cost-cutting of the early 2000s in favor of more STEM education.⁵ High students numbers translate to economy grading as instructors become more overwhelmed.

More contemporary practices of reflective essays or other assessments of content have proved to help students remember information in the longer term, but can be seen as more subjective than objective, as well as require a lengthier grading process for the instructor. Often, in order to seek objectivity in writing, the instructor may rely on writing structure (grammar, typos, fluidity, etc.) over content, as this is easier to assess and quantify. As with memory-based assessments, written evaluations have proven to be inequitable to students who begin the course with little to no historical context or those who learn is ways that are not being actively assessed. Students for whom English is a second language also may struggle to write at a level that meet average essay requirements in a departmental course, as assessment of written responses varies by professor, TA/GA, and program. The problem of objective essay grading in history courses has been studied in academic as early as 1913, in a study conducted by Daniel Starch and Edward C. Elliot (University of Wisconsin). Seeking an understanding of assessment trends in history, the same essay was graded by 122 different Midwest history teachers at a range of 43-92 percent out of 100.6 Grading controversial or charged content has become additionally more challenging as students may feel graded for their opinions, rather than their comprehensive understanding of material.

In more recent pedagogy, Bourdieu & Passeron⁷ present this subjective knowledge debate from a standpoint social hierarchy, where upper- and middle-class knowledge is ranked as "more valuable," making it difficult for those without exposure to "higher class" education and expected knowledge to ever advance classes. Yosso's⁸ response examines Critical Race Theory (CRT) in the context of expected knowledges. When an explanation of systemic racism is added to these subjective histories, the understanding may be greater, as it provides context to individual experiences. CRT also questions historical quantifiable standards in curricula, which were traditionally developed solely to accommodate the white, particularly with regard to the European canon of architecture. As CRT itself has been highly politicized outside of academia in recent years, implementing pedagogical strategies to disrupt the canon and address potential learning inequities has become even more challenging, necessitating the development of a consistent, equitable strategy for evaluating student learning objectives across populations and learning backgrounds.

COGNITIVE LOAD THEORY AND BEGINNING DESIGN

"Tell me and I forget, teach me and I may remember, involve me and I learn."⁹

While standardized testing in primary and secondary education has attempted to even the playing field in achievement among U.S. state-funded schools, the testing methods for history education remain flawed, translating to students who are overprepared in memorization or short-term learning, and underprepared in humanistic critical thinking and analysis. Additionally, displayed maturity of early college students has been receding,¹⁰ and in recent years spotlighted through the COVID-19 pandemic, which took many current college students out of in-person learning in high school, impacting social development and maturity.¹¹ Changing demographics over the last fifty years with inclusion in mind also mean that a higher percentage of students in introductory courses may self-identify as needing learning accommodation, or come to the university from less-resourced backgrounds.¹² This combination of factors suggests that early college students are less-prepared than ever before to fully participate in the rigorous curriculum of a professional architectural degree. Architecture programs are poised meet these challenges as a discipline driven by iterative processes, design/creative thinking, and interdisciplinary understanding. Innovating architectural curriculum to accommodate more diverse and unprepared student bodies may set an example for other programs with life safety expectations, professional licensure, or other rigorous demands.

At Ball State University, history/theory is taught in the first year of architecture-specific curricula, along with a number of other challenging courses. The year provides an introduction to the comprehensive field of architecture, with individual courses in Social and Environmental Justice, Building Technology, Structures and Statics, Environmental Systems, Digital Software, and design studio. Students are presented with substantial information, making it not only difficult to discern the importance of each of these courses to their future careers, but also to connect the importance of these courses together and how they influence the design studio.

In this constant overwhelm, students may mentally shut down or push certain courses to the side in an effort to concentrate on the design studio. Using Cognitive Load Theory (CLT)¹³ strategies may provide some relief to students through the redistribution of activities and information, giving students the mental space to process and use so much information at once. CLT describes how new knowledge is processed through working memory (WM) before being transferred to long-term memory (LTM) through "schemas." When the working memory is overloaded, these schemas are interrupted and may not reach long-term memory. CLT suggests a series of six strategies [Figure 1] to optimize intrinsic mental load and reduce extraneous mental load in education. Implementing these strategies into information delivery and assessments may ease the overwhelm in early architectural education and reduce overall grade stress and student attrition rates.

While CLT and modernizing assessments may accommodate more students, traditional grading still assesses what a student currently *knows*. So, how can we effectively track how much a student *learns*?

Strategy 1 - Explicit teaching: Using **clear and explicit instruction** and guidance.

Strategy 2 - Increase independent problem solving: Slowly move **from guided exercises to independent learning** helps students with this transition.

Strategy 3 - Cut out any inessential information: Presenting extra material may overwhelm students' WM. Focusing on **essential information** at the beginning of the class and then expanding may help beginning architecture students transition into rigorous coursework.

Strategy 4 - Present all **essential information together**: Requiring students to split attention between two or more sources or types of information that are related may overchallenge WM.

Strategy 5 - Present information both orally and visually: Students may learn in a variety of ways. Reinforcing **oral instructions with visual instructions** and examples meets the needs of a greater collection of students.

Strategy 6 - Draw on students' prior knowledge: Minimizing new information cognitive load maximizes student learning outcomes. **Connecting material** to something with which **students are familiar** means that they can move information more easily from WM to LTM.

Figure 1. Strategies for combating cognitive overwhelm. Image by author, 2023, referencing Sweller et. al., 2017.

GRADING DISRUPT: A METHODOLOGY FOR ARCHITECTURAL SUPPORT COURSES

Self-assessments and program assessments to demonstrate program challenges and successes are the latest trend in institutional and NAAB accreditation. Having reliable methods of measuring student learning, as opposed to production, could help programs develop continuous improvement strategies. Reevaluating assessment methods on a regular basis ensures that architectural curriculum remains modern and relevant, in keeping up with the expectations of the profession. Employing alternative grading methods presents a way to analytically engage students in humanistic course content, allowing them to reflect and explore, while still challenging them with professional coursework. Nontraditional practices, including pass/fail grading are common in design studio in international architectural curricula^{14,15,16,17} but rarely applied in American undergraduate education. The four-point grade point average and A-F grading scale used by most universities discourages alternative grading. For undergraduate seminar/lecture courses, the practice is even more rare, since the material is seen as more objective than subjective design. History/theory is exceptional in this way as it involves interpretation, analysis, and opinion. Applying point values to subjective responses implies objectivity in grading that can only be present with objective requirements, a feat more challenging when not using slide identification and memorization for assessment.

To better understand if non-traditional grading might prove to engage students in historical content and better assess learning, several types of non-traditional assessment and learning strategies were employed in the history/theory sequence in Ball State University's 5-year B.Arch program. The curriculum continued to address the course descriptions dictating coverage of world architectural history and theory, but disrupted the canon of assessment to utilize non-traditional grading for several multi-step projects. Assignments were designed to engaged students in research-based design, with the intention of encouraging them to "inquire, learn, analyze, and improve," instead of "complete and forget." Each semester of the two-course sequence used a combination of Ungrading, Specifications Grading, and Summative Evaluation, as well as a partial flipped classroom to accommodate for cognitive overload and allow students a deeper connection with learning beyond a point/percentage-based system.

Ungrading eliminates a final grade for individual submitted work, and instead gives significant feedback for the student to reflect on and resubmit.¹⁸ For most American universities, this must be paired with other assessment systems in order to define a student grade for non-pass/fail courses.

Specifications grading gives students a list of achievements that they may complete to earn a certain grade, aimed at transparency of grade communication.¹⁹ Specifications grading often relies on a complete/incomplete rubric for individual assignments, and suggests that producing more artifacts results in a higher traditional grade.

Summative evaluation or summative assessment allows students to demonstrate a totality of what has been learned over the semester, outside of contract requirements.²⁰ Summative evaluation has been researched in higher education since the 1970s,²¹ but has evolved over time to suggest more personalized or individualized learning plans. Summative evaluation, however, still relies on an assessor to determine the worth or equivalencies of learning.

Project	Interim Submission	Course Objectives	NACE Workplace Competancies	CLT Strategies	LearningType	Assessment Type
Visual Notes		Research, recognize, describe, and discuss parallel and divergent world architectural movements with an appreciation of influence	Oral / Written Communications Critical Thinking / Problem Solving	Strategy 4 Present all essential information together	Read/Write, Visual	EMRN Rubric, Contract Grading
Parti Palimpsest	Annotated Bibliography	Critically respond to new environments visually, orally, and through writing with a knowledge of broad world architectural context	Teamwork, Written Communication	Strategy 2 Increase independent problem solving	Read/Write	EMRN Rubric, Contract Grading
	Parti Drafts	Research, recognize, describe, and discuss parallel and divergent world architectural movements with an appreciation of influence	Critical Thinking / Problem Solving	Strategy 5 Present information both orally and visually	Visual, Kinesthetic	Ungrading
	Research Statement	Use a historical method to understand and engage with architectural values, behaviors, responsibilities, and communities of the past	Written Communications	Strategy 5 Present information both orally and visually	Read/Write	EMRN Rubric, Contract Grading
	Parti Box	Affirm the role of intellectual, technological vernacular, cultural, political, environmental, and economic factors in the development of design	Teamwork, Oral Communication, Technology	Strategy 5 Present information both orally and visually	Visual, Kinesthetic	EMRN Rubric, Contract Grading
Applied Learning in Modern Culture		Discern the impact of political, economic, social, ecological, and technological factors in the development of architectural styles and theory	Equity & Inclusion, Technology	Strategy 6 Draw on students' prior knowledge	All	Ungrading
Monument to a Movement	Annotated Bibliography	Discern the impact of political, economic, social, ecological, and technological factors in the development of architectural styles and theory	Teamwork, Technology	Strategy 2 Increase independent problem solving	Read/Write	EMRN Rubric
	Analytique	Utilize multiple theoretical and applied research methodologies and practices to produce historically- based designs	Visual Communication	Strategy 5 Present information both orally and visually	Visual	EMRN Rubric
	Monument Scale Model	Utilize multiple theoretical and applied research methodologies and practices to produce historically- based designs	Oral Communication	Strategy 5 Present information both orally and visually	Visual, Kinesthetic	EMRN Rubric
Semester in Thoughts and Images		Theorize the diverse needs, values, behaviors, and patterns of architectural patrons and their historical impact on design	Technology, Visual Communication	Strategy 6 Draw on students' prior knowledge	Read/Write, Visual	EMRN Rubric
Assigned Lectures		Develop and Demonstrate a comprehensive understanding of architectural history post-Industrial Revolution from a multitude of perspectives, traditions, and cultures	Global / Intercultural Fluency	Strategy 1 Explicit teaching	Auditory	Self-Assessment, Summative Evaluation
Assigned Readings		Use a historical method to understand and engage with architectural values, behaviors, responsibilities, and communities of the past; Develop and Demonstrate a comprehensive understanding of architectural history post-Industrial Revolution from a multitude of perspectives, traditions, and cultures	Global / Intercultural Fluency	Strategy 2 Increase independent problem solving	Read/Write	Self-Assessment, Summative Evaluation
Final Assessment	<i>Midterm Assessment</i>	Use a historical method to understand and engage with architectural values, behaviors, responsibilities, and communities of the past; Develop and Demonstrate a comprehensive understanding of architectural history post-Industrial Revolution from a multitude of perspectives, traditions, and cultures	Career and Self Development	N/A	Kinesthetic	Ungrading, Self- Assessment

Figure 2. Internal course rubric identifying projects, objectives, assessments, learning types, and Cognitive Load Theory accommodations. Image by author, 2023.

A flipped classroom²² gives students the opportunity to practice passive learning as homework, and active learning while the professor is present. Some passive learning strategies, such as listening to lectures and taking notes on readings, are moved to outside of class time to allow for inclass activities and active learning. Giving students time in class to research in the library (with instructor or librarian) or work on projects ensures that the instructor is available to answer questions as they arise and clarify as needed.

Each type of assessment has been used extensively in primary, secondary, and graduate education, and puts the obligation for learning into the individual's hands, essentially providing information from which to learn, but requiring the student to demonstrate mastery over the material. Each type of nontraditional grading removes point values from individual projects, so less emphasis is placed on the minor differences in student submissions (for example, justifying the difference between 85% and 87%) and instead utilizes rubric feedback to determine if a student has demonstrated enough mastery to consider the project complete. Assigning point values have proven discouraging to some students, ^{23,24} so how can professors encourage learning for passion, not grades, and consequently assess this learning in a way that meets American university grade standards? In a nontraditional grading system, the institution, department, or individual instructor will need to determine how to strike a balance between curricular rigor and learning accommodation.

The redesigned history/theory sequence used a rubric to organize projects, course objectives, NACE competencies, CLT strategies, learning types, and nontraditional grading strategies [Figure 2]. This illustrated all information together to ensure that learning strategies and projects addressed course objectives, and connected learning strategies to nontraditional assessment. Projects were designed to force students to evaluate why history/theory is significant to their understanding of the world, relating it to their other courses, and particularly, validating the use of historical or theoretical knowledge in their design education. Assessments featured a consistent feedback loop of interim submissions with revisions, similar to the iterative design studio process.

While the organization rubric was not distributed to students, each assignment had an associated rubric for feedback and encouragement. Students are given a full course grading rubric [Figure 3, TOP] to follow as a way of determining whether they have demonstrated mastery in the traditional grading categories. At the end of the semester, if students had not met all requirements for a grade category, they could submit their final assessment with evidence of summative learning outside the rubric. Individual rubrics [Figure 3, BOTTOM] were given for each project, based on the ERMF rubric by Rodney Stutzman and Kimberly Race,²⁵ and ERMN rubric by Robert Talbert,²⁶ which promote resubmission if revisions are needed to demonstrate mastery of the material. Permitting resubmission gives students

additional time to process the information in a way that illustrates the value of what they learned, as well as providing custom comments for how they can improve their submission. For encouragement, the rubric includes an assessment for Excellent or Exemplary work. Students are not required to achieve Excellent or Exemplary achievement for the assignment to be complete and count toward their grading contract, but regularly producing exemplary work could demonstrate their mastery of material toward a summative evaluation. Additionally, for students who are not naturally inclined to producing exemplary mastery on the first try can still work hard to achieve the rating through resubmission, "leveling the playing field" toward a more equitable evaluation, and encouraging students to resubmit for their best work even if they have had their submission marked complete. Not achieving exemplary has no negative impact their final grade—it is only provided for encouragement to engage students in the learning process, practice self-assessment, and present their best work.

EVALUATING OF THE METHODOLOGY

The reorganization of history/theory courses is a continuous process, with instructor regularly refining the rubrics and projects to meet the evolving departmental and pedagogical needs of the courses. While long-term evaluation of the strategies is in process, the instructor currently uses the following measures of evaluation for the methodology:

- Interim and summative meetings with instructor Students are encouraged to have regular meetings with the instructor and/or teaching assistant throughout the semester. As part of their final self-assessment, students meet individually with the instructor for a debrief session discussing their mastery of the material and what strategies worked or did not for their learning. While this feedback is not anonymous, it illustrates to students that teaching, like learning, is also an iterative process and that their feedback is valuable to faculty in revising coursework. The meetings promote honest, non-judgmental dialogue regarding education.
- University-implemented course evaluations Ball State University assigns course evaluations at the end of every course, allowing individual instructors to add questions for student response as needed. These provide an opportunity for students to address what encouraged their learning directly and anonymously through a five-point scale and comments. Students who are uncomfortable giving feedback directly to faculty may feel more comfortable expressing their honest opinions about the projects and alternate assessment anonymously.
- Traditional instructor evaluation The history/theory sequence has been taught as a whole or in part by the same faculty for approximately nine years, allowing for holistic assessment of student work quality over this time. Projects

Assignment	Α	В	С	D		F
Visual Notes	Complete 14 of 14	Complete 12 of 14	Complete 10 of 14	Complete 8 o	f 14	Complete fewer than 8 of 14
Parti Palimpsest	Submit all requirements in full and on time	Submit all requirements in full and on time	Submit one requirement late	Submit two c more require late	o r ements	No submission or submission not assessable
Midterm Assessment	Complete midterm assessment in full	Complete midterm assessment in full	Complete midterm assessment in full	Complete mi assessment not assess	idterm late or able	Not required
Applied Learning	Complete two of the following: •! Meet with Amy Trendler about your Parti project •! Submit Applied Learning in Modern Culture •! Attend ICAA Workshop	Complete one of the following: •! Meet with Amy Trendler about your Parti project •! Submit Applied Learning in Modern Culture •! Attend ICAA Workshop	Not required	Not required		Not required
Final Assessment	Complete final assessment in full	Complete final assessment in full	Complete final assessment in full	Complete assessment not assess	final late or able	Not required
Excellent/Exemplary Meet		ts Expectations	pectations Revisions Needed		Not Assessable	

Excellent/Exemplary	Meets Expectations	Revisions Needed	Not Assessable
Submission demonstrates distinct	Submission demonstrates knowledge of the	Submission is minimal in content and does	Submission is unreadable, blank,
understanding of the lecture content and	lecture content and reading subject matter	not address either the lecture or the	incoherent, or missing.
reading subject matter and design is	and shows intention in design. Visuals and	reading(s). Design is limited and	
involved, related, and masterful. Visuals are	written content are accurate and relevant.	demonstrates deficiency of intent. Project is	
integrated into the written content and		lacking appropriate visual or written content.	
illustrate discussed concepts.			

Figure 3. [TOP] Contract grading rubric given to students. Completing a category of the contract is a direct way for a student to achieve their desired grade. [BOTTOM] Example of an individual modified EMRN rubric given to students for assignments. Images by author, 2023.

and assessment have been modified over this time with the intention of consistent improvement in student learning through traditional instructor evaluation of student output.

• *Peer review* – In line with traditional scholarship of teaching and learning, presenting this work, participating in discussion, and receiving feedback from peers is integral to the improvement of the nontraditional grading method and better understanding how it might be utilized in architectural education.

The history/theory nontraditional grading strategies have only been employed for three semesters, and consequently continue to evolve with both peer and student feedback. Initial student responses have been primarily positive, based on anonymous course evaluations and student/faculty interactions. Evaluations asked students to provide additional comments on strengths and weaknesses of the course, with some addressing the nontraditional grading system specifically [Figure 4].

Course Evaluation Statement	Student Rating of Nontraditional Assessment (out of 5.0)	Student Rating of Traditional Assessment (out of 5.0)	University Average
My instructor explains the course objectives clearly	4.94	4.44	4.31
My instructor explains course content clearly	4.88	4.50	4.29
The course is effective at meeting its objectives	4.81	4.50	4.35
This course has clear objectives	4.81	4.50	4.38
This course has a clear grading system	4.38	4.00	4.23
Overall evaluation	4.73	4.48	N/A

"I loved the grading system for this class. It definitely pushed engagement in the course content and viewed the class as more than points."

"The weekly assignments engage the students in historical sources in a way that **helps develop architectural skills and historical knowledge**."

"I like her grading system, as she takes our opinions into an account, and it puts the emphasis on effort rather than correctness in assignments for example...Keeping time outside of class in mind could definitely help with stress levels in class."

"This class was overall a great class. My only complaint was **that the grading system was sometimes confusing and seemed very opinionated**. However, I was grateful for the ability to meet with the professor about the grading system to help clear up some of the issues."

Figure 4. Average course evaluation scores showing feedback on nontraditional assessment vs. traditional assessment with selected student comments. Image by author, 2023.

For peer review, the instructor participated in a learning community through the university focused on equitable grading techniques, which helped in the development of the teaching strategies in these courses. Traditional evaluation shows student project quality remained consistent despite the disrupt in canonical grading practices [Figures 4 & 5]. Some students excelled following resubmission of projects—many of these students would have likely earned an average nominal score on the first submission using a traditional grading system, and accepted this as final. Resubmission in particular allowed those students additional opportunity to be successful.

ENCOURAGING EQUITY THROUGH NONTRADITIONAL ASSESSMENT AND ASSIGNMENTS

Disrupting traditional grading in early architectural education and refocusing on equitable, nontraditional practices is one method to accommodate different types of learners, while encouraging diversity and inclusion. The architectural profession in the United States has long struggled with moving beyond its canonical elite, white male origins, with women, people of color, indigenous groups, and LGBTQIA+ people significantly underrepresented when comparing population statistics of licensed architects.²⁷ First-generation college students and those from under-resourced populations may have added difficulty transitioning into higher education, putting them at a disadvantage in courses taught with an expectation of prior, specialized knowledge. Employing equitable strategies, such as contract grading and summative evaluation, stresses the importance of attendance goals vs. performance goals.²⁸ Attendance goals more closely replicate iteration to encourage learning as a process and not a finish line. As beginning design students will learn and achieve at different rates, nontraditional grading presents a spectrum of ways and timelines in which students may master course content, creating a more equitable learning environment for all types of students. Nontraditional grading does not prioritize natural inclination over hard work, and instead presents an equal footing.

Accommodating different learning and communication styles, may help to diversify the future population of architects. Under a strictly traditional culture of architectural education, attrition rates through the career process are higher for students who identify as non-white and female, and those who identify as part of multiple underrepresented groups.^{29,30} International students who choose to study and work in the United States may arrive from countries that participate overwhelmingly in a different language or communication style. Meeting the needs of these students through explicit instruction, ample time to ask questions, and consistent feedback will ensure they are given the opportunity to succeed, despite any differences in their secondary education.

While the concept of categorical learning styles has been addressed recently as more of a "neuromyth,"³¹ students will



Figure 5. Student work (Monument to a Movement and Semester and Thoughts and Images) produced under the nontraditional grading system showed consistent quality with projects previously produced under the former traditional system. Images left to right by Andrew Lee, Broderick Budzinski, and Naomi Charlesworth, 2023.

often still categorize their learning through historical types, including visual, auditory, kinesthetic, etc. Beyond these neurotypes, students also have perceived roadblocks associated with certain assignment types, i.e. "I'm not a good essay writer," "I can't draw," "I don't do well on tests", which may be backed in neurodivergences, but also in comfortability or preference. To supplement nontraditional assessment strategies, the redesigned course sequences expanded the assignment types to accommodate different learning preferences. While a traditional research paper was still required, it was supplemented with visual notes, and an interactive design project so that the research was being used in an active learning way. Each project was broken into smaller steps to lead students through the learning process, and accommodate different learning strategies. As beginning designers often have not established an individual iterative process, providing them with an example process was intended to help move them through the requirements in a logical way and present an example of iteration for their future use.

Accommodating the spectrum of learning strategies presented another avenue through which equity in the classroom might be addressed. Traditional research writing may fall under Bourdieu & Passerson's higher- and middle-class knowledge, alienating those students who received a different education. By reframing more "traditional" assignments through more experimental and subjective ones, each student had the opportunity to feel more comfortable learning, by way of an assignment geared toward the visual, auditory, kinesthetic, etc. style. Each of these assignment types and strategies was geared toward different learning outcomes and skillsets associated with beginning design.

CHALLENGES AND FUTURE OPPORTUNITIES

Thus far, the study in nontraditional grading for equity has only been applied in three semesters of the history/theory courses. These strategies can be employed in any part of the architectural curriculum, dependent on the population of students, as well as the number of faculty teaching, Currently, other support courses and design studios are graded by their respective instructors, who may choose to employ different systems. With student numbers rising in the Ball State University Department of Architecture, it is unclear if providing lengthy and consistent feedback for students will remain sustainable. Similarly, the history/theory courses are limited in number and time and cannot be all things to all people-history, design, writing intensive, etc. Instead, students need to find their passion within the field, and seek encouragement in this from the curriculum and course structure. CLT and nontraditional grading are just two methods to understand the stressors that modern students are facing, and may help to identify early problems before a student shows mental overwhelm. Disrupting outdated assessments strategies to welcome in a diversity of individuals to architectural education may be the future to encouraging equity in the profession and engaging with architecture in the future.

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