



Teaching Students How to Read and Assess Plan Content

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Abstract

Few studies assess methods for teaching students how to evaluate plans. To fill this gap, we designed and analyzed a plan assessment exercise conducted during a ten-week, online undergraduate course with ninety students. We find that student understanding of plan knowledge and skills increased significantly after the plan assessment exercise with students reporting increased interest to engage in planning. This study can be used to inform planning pedagogy both within planning programs and as planners engage the public in plan reading and evaluation.

Keywords

active learning, pedagogy, plan assessment, student learning

Introduction

Plans are meant to be read, re-read, and used to hold leadership accountable (Patton 2008). This premise is no less true for the public than it is for students. Yet, there is only one research article that reports the outcomes of teaching plan evaluation (Balsas 2012), leaving gaps in understanding both the methods and benefits of this staple in planning education. Such gaps likely translate outside of the classroom when planners consider how to empower community groups to evaluate and craft meaningful plans. In response, we design and evaluate a plan assessment exercise to invigorate the discussion about teaching plan evaluation to the profession and beyond.

To truly move planning toward a collective, deliberative process, the reading of plans must transition from “a practice of insiders” and those with special interests (Mandelbaum 1990), to one that is a shared community undertaking. The growth in participatory planning reflects this broad shift in planning methods and theory from the 1940s model of a top-down narrowly framed plan crafted by a subset of planning experts to a modern planning emphasis on achieving more equitable outcomes through deliberative democracy (Arnstein 1969; Khakee 2000; Padt, Bose, and Luloff 2023). With this shift, greater representation, particularly from traditionally marginalized groups such as youth and historically disadvantaged groups (Lauria and Slotterback 2020), is crucial to realizing plans with a greater focus on social equity. To support this shift, new pedagogies are required to train planners to empower communities to decipher plans and constructively draft better plans. Not only do planners need

plan assessment techniques that engage the public, but these methods must inspire further engagement in planning—as opposed to turning people away from the time-consuming and jargon-laden effort. The democratic creation of better plans necessarily hinges on the evaluation of current planning approaches to understand what has been attempted elsewhere, thereby emboldening further action. With these broad goals in mind for the field, we introduce and evaluate a teaching assignment that is focused on undergraduate students. By virtue of this focus on non-experts, we hope that this teaching approach has the potential for transfer to wider community groups.

Arguably, the daunting task of reading and making plans is spurring a crisis which questions the very value of planning. Multiple studies variously question “Do Plans Matter?” (e.g., Knaap, Hopkins, and Donaghy, 1998; Millard-Ball 2013). In a manuscript cheekily titled “Evaluating planning without plans,” Morgan, Osborne, and Mackey (2022) note that under-resourced communities often prioritize political action over the costly formalized effort of drafting a plan. In this sense, plans are documents that organize and schedule

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policy actions, but may confusedly lag behind the actual implementation actions that plans purport to lead. Amid this debate, there are others who point out that plans do impact development. For example, Burby and Dalton (1994) found that 176 local land-use plans cross five states effectively limited development in high-risk hazard zones. Others have found that where plans are mandated, urban governments deliver greater social welfare benefits, presumably because of the additional accountability and transparency in the local policymaking process (Knaap, Ding, and Hopkins, 2001; Liao, Warner, and Homsy, 2020). Similarly, several studies illustrate that where plan making draws from broader community involvement, the resulting plan includes more equity-focused policies that are more likely to be implemented (Burby 2003; Kinzer 2016; Liao, Warner, and Homsy, 2020). Such studies highlight that informed plan-making is sorely needed. As plans remain the primary legal means for both local government and developer action, cultivating a broader understanding of how to read, revise, and craft them successfully can only help strengthen the process of planning to reach more equitable outcomes.

Yet, even at the master's and doctoral level, planning students seldom formally train in plan evaluation. Nor is plan evaluation a formalized requirement of the Planning Accreditation Board (PAB) curricular standards. Instead, planning studios are often designed to give more emphasis to plan *making* than plan *reading* (Balsas 2012; Mandelbaum 1990). It is worth reflecting how this expectation of drafting plans without having compared plans helps replicate a culture of planning expertise with the planner as a technocrat, as shown in multiple studies (Dalton 2007; Fox-Rogers and Murphy 2016; Lauria and Long 2017; Seltzer and Ozawa 2002). The paucity of plan evaluation pedagogy contrasts with the desired academic ideal of creating planners who are knowledgeable facilitators capable of orchestrating more equitable representation in plan-making (Peel 2000). In part, the dissonance in what it means to be a planner (technocrat or facilitator) is swayed by the current planning curriculum which oversupplies technical skills without building communicative skills needed for engaging the public in plan reading, evaluation, and making (Alexander 2001; Dalton 2007; Das et al. 2020; Seltzer and Ozawa 2002).

To course correct, we argue that developing a plan evaluation pedagogy has the potential to empower future planners as facilitators. Our case study is set up to generate empowerment through the act of learners gathering data, synthesizing findings, and sharing expertise with the instructors. Our approach builds from active learning methods that involve students in the learning process through activities that go beyond listening and reading. The goal is to engage students in thinking, discussing, investigating, and creating. For planning educators seeking to model the role of facilitator as opposed to expert (Arnstein 1969), exercises that are hands-on and student driven can only help (Padt, Bose, and Luloff 2023). Through our approach, students learn to identify

concepts and policies related to particular issues, articulate the implication of the policies and actions on their communities, and validate the plan's internal consistency—do the intended actions match the goals set in the plan? In doing so, students are familiarized with attributes of knowledge co-creation and “good” planning (Padt, Bose, and Luloff 2023). Active learning encourages individuals to be responsible for building their own knowledge (Hattie and Timperley 2007). We hypothesize that an active learning plan assessment exercise will inspire students toward engagement in planning, spurring them toward becoming facilitators and knowledge brokers in their professional careers.

How to Read and Assess Plans

Arguably, the toughest hurdle in teaching plan evaluation is that plans are rarely an easy read. The plan document is meant to be a vehicle for the collective expression of community values, a vision for the future that represents decades of public comment and commits the jurisdiction to a detailed plan of action. As Mandelbaum noted over three decades ago, plans contain “policy arguments, histories, and graphic images” all of which are “superimposed on one another in rapid succession” so that the plan is akin to “a literary text—rather like a novel, a social science monograph, an advertising brochure, or a historical narrative” (Mandelbaum 1990, 350). Teaching the ever-changing planning jargon, local context, and latest scientific approaches requires many sessions of not only reading plans, but also of absorbing background material. As Bunnell and Jepson (2011) note, “the basic, minimum qualities of a good plan” are “that it should clearly and effectively communicate key principles and ideas, and energize, engage, and inspire residents in support of those principles and ideas.” From the vantage point of communicative planning, the plan is a critical artifact of the deliberative process, and plan reading provides interactive discourse necessary for plan-making (Khakee 2000). In short, anyone should be able to pick up the document and see if it addresses a concern of interest and how.

Setting such simplified plan reading concepts aside, how do planning scholars recommend plan evaluations be conducted? With the paucity of published plan evaluation teaching tools, perhaps it is no wonder that two decades after Mandelbaum's call to simply read the “damn plans,” Ryan (2011) noted that “the literature on plan reading is not abundant” (p. 310). Baer (1997) outlined methods for evaluation, but Talen (1996), Laurian et al. (2010), and many others continue to bemoan the lack of empirical research into plan contents. Against this bleak background, the last decade has seen a surge of attention to plan evaluation. In their meta-analysis, Berke and Godschalk (2009) note only sixteen plan evaluation studies over a twenty-year period from 1997 to 2007. Five years later, Lyles and Stevens (2014) found forty-five plan quality evaluations over a twenty-year period, a three-fold increase.

With growing interest, scholars are creating new methods for plan evaluation. For example, Berke and colleagues have created score cards (Berke et al. 2021). Many of these plan evaluation methodologies delve into designing specific indicators to measure the degree to which plans response to specified elements (Mui et al. 2021). Others provide a framework to evaluate the entirety of the planning document (goals, factual basis, implementation, monitoring, and evaluation) (Berke et al. 2006). For example, Berke and French (1994) equate policy strength with plan quality and similar trends in plan evaluation studies have followed since. Others are building from a base of plan evaluation to assess stakeholder preferences that shape plans (Li et al. 2021); or consider the impact of networked institutions with linked plans (Berke et al. 2019; Dong et al. 2020; Yu, Brand, and Berke 2020); and at least in one case scholars deployed a publicly available online evaluation tool to invite engagement in the evaluation of equity planning in comprehensive plans (Loh and Kim 2021). Advanced computing now enables large batch analysis of text to automate and speed plan evaluation (e.g., Author's own work 2021; Fu 2024; Fu, Wang and Li 2024; Kaczmarek et al. 2022). All the same, most recent studies use human coders to compare tens of plans (thirty-three plans in Berke and Conroy 2000; thirty-four plans in Conroy and Berke 2004; forty-seven plans in Mui et al. 2021). For example, in the most ambitious plan evaluation to date, a team of thirty authors translated and qualitatively hand-coded climate action plans from 885 European cities (Reckien et al. 2018). Such large-scale plan comparisons allowed scholars to show that if the planned actions within European cities are nationally representative, the eleven countries investigated would achieve only a 37 percent reduction in greenhouse gas (GHG) emissions by 2050, falling well short of the 80 percent reduction recommended. Such sophisticated plan evaluations across multiple languages, countries, and policy approaches are beyond the scope of a classroom exercise, leaving them firmly in the realm of research.

Even with the newly added approaches to plan evaluation, most of the above researcher-conducted plan evaluations make use of Baer's (1997) classic post hoc evaluation of plan contents as opposed to more in-depth analysis comparing the creation of the planning document with its outcome years later. In their review of plan evaluation, Guyadeen and Seasons (2016) note that even such straightforward "plan evaluation methods are not commonly used in practice" (p. 215). Thus, while plan evaluation is a "well-established part of the planning canon" (Guyadeen and Seasons 2016, 215), there remains little discussion of a shared pedagogy and very little translation to practice of even the simplest post hoc analyses. With this in mind, we focus on skills that can be taught at the undergraduate level and could be easily transferred outside the classroom to community groups wishing to assess and engage in planning efforts. We also label our method an "assessment" as opposed to an evaluation to underscore the

difference between a simplified tool used for teaching and the more rigorous methods used by policy researchers.

Where critics may argue that plan evaluation or assessment should be left to specialists who are better versed in the intricacies of planning culture and language, we note that even to produce and empower more such specialists, scholars could benefit from developing an introductory pedagogical approach. Furthermore, the method of crafting a plan still occurs through human minds, eyes, and hands, necessitating a coherent pedagogy that can be easily translated not only to graduate students in planning but also to undergraduate classes, and the public so that more people are empowered to compare plans and can be better informed as they shape plans. With this in mind, we aim our approach at upper division undergraduate students with little prior knowledge of planning to understand how the teaching intervention influences their sense of empowerment for engaging in future plan making.

Methods: Research Design and Analytical Methods

Planning Context Background

We focus this test case on California General Plans. Each of the 482 cities and fifty-eight counties in California are required to draft a General Plan that addresses eight specific topics: land use, transportation, housing, conservation, open space and parks, noise, and safety. Many jurisdictions go far beyond the required topics, adding additional chapters. Of these elements, housing and transportation are required to be updated most frequently. Ultimately, adoption of a updated element, usually the housing element, triggers the mandatory revision of several other components of the General Plan, including identifying "disadvantaged communities" (Gov. Code § 39711) and a recent state mandate to address Environmental Justice (Gov. Code § 65302(h)) so as not to negatively impact historically disadvantaged communities with new development. Unlike Climate Action Plans or other voluntary planning documents, California's General Plans are required for every jurisdiction, and zoning must be horizontally and vertically consistent such that policies in the housing element agree with those in the open space element, for example (Gov. Code § 65300.5). In states where plans have less structure and are more voluntary in nature, teaching challenges will occur as educators are tasked with explaining a more varied set of motivating rationales for plan creation.

To simulate how to work with assessing non-required elements, our test case focuses on assessing food and agricultural policies. In a state with considerable agricultural production, issues of added housing and housing affordability are often pitted against farmland preservation and concerns about food security. These topics are also of high interest to students at the University of California, Davis.

These topics are also felt viscerally, where up to 42 percent of students throughout the UC system experience high levels of food insecurity (Steinberg 2018) though the university is ranked as the leading agricultural research institute in the United States, second in the world. Although food and agriculture are not required elements in California General Plans, plans are vision statements and vehicles for expressing community values. For these reasons, we expected to find food and agricultural policies in California city plans while also catering the class exercise to a topic that captured student interest. In transferring our pedagogical tool to other classroom experiences, course leaders should consider surveying students about a topic of interest that aligns with robust plan contents.

Course Background

Data for this exploratory study on plan assessment as a pedagogical tool come from ninety undergraduate students enrolled in University of California, Davis's Community Regional Development (CRD) undergraduate class (CRD 152) in 2022. The undergraduate students varied in their understanding of the planning processes, and as is with all student cohorts, students had differing skill sets and capacities. While the core teaching team identified as planners, the CRD undergraduate program has many orientations, and students self-selecting into the class may or may not have taken prior planning classes, creating a classroom experience that could be a proxy for interested, motivated community groups with little prior knowledge of planning. Overall, the course was designed to equip students with the knowledge and skills required to effectively contribute to the public participation process. Through course readings, lectures, guest lectures with local public officials, and community asset mapping site visits, students are familiarized with the locale, advocacy, and processes that lead up to a plan and are critical for its successful implementation. The class met virtually as campuses remained closed due to university policy during the pandemic.

Prior Studies on Plan Evaluation Pedagogy

Our research builds from the only published prior study on teaching plan evaluation. That study is based on an educator reflection from a planning studio course at Arizona State University where students evaluated a plan of their choosing in pairs (Balsas 2012). Students expressed difficulties in accessing assigned plans, especially older plans (Balsas 2012). Balsas also noted that students complained about the workload and noted in the course evaluation that the course had too many deliverables. To overcome these challenges and more adequately prepare students to read, compare, and engage with plans, the teaching team gathered 325 publicly available California city General Plans for the students. The teaching team also converted files to a PDF standard format

to allow rapid text searches of key terms. In supplying the full General Plans for the exercise in one place and a uniform format, the teaching team also reduced the amount of time that would have otherwise been spent by students searching through the myriad of public websites for documents. Upfront efforts likely contributed to reduced frustration for students, but also required extensive preparatory time, as we will discuss further in the findings and discussion sections.

Balsas also recommended that plan assessment exercises afford students flexibility to form their own groups and evaluate plans of their choice (Balsas 2012). Other recommendations include guiding students through various stages of the data collection and evaluation process as well as emphasizing the importance of plan assessment in the planning process.

We also drew inspiration from Susskind, Cunningham, and Cruxen's (2018) call to re-orient urban planning and the social sciences more broadly toward the co-production of context specific knowledge. Previous studies have demonstrated that the co-production of knowledge enhances student capacity and agency (Hudson, Means, and Tish 2020) as well as their sensibility toward problem solving (Quick and Feldman 2011). Used as such, plan assessment becomes a means for discourse, and a form of collective inquiry through which students develop critical awareness of plan contents and the implication of its implementation on respective communities. With the aim of empowering students toward engagement in planning outside the classroom experience, we developed a focused plan assessment exercise (described in detail below) that the students could work on individually but also discuss among their peers. Results were aggregated to report back to students the findings from their purposive inquiries.

Plan Assessment Exercise

Through course content and author-led demonstration of the exercise, we familiarized students with the assignment (Figure 1). Each student then self-selected and assessed four California city General Plans using the supplied framework (Figure 2). The self-selection offered choice in the assignment so that students could orient to geographic regions and communities of interest. Students signed up for their pre-selected cities using a Google spreadsheet to ensure little overlap from student to student while offering choice. Two teaching days were spent demonstrating the plan assessment exercise, and additional office hours and check-ins through the quarter were set up for further troubleshooting with students.

We focused on assessing the plan as a policy document, not on outcomes or processes leading up to the plan. Practically, this approach helped students hone critical reading while fitting the plan assessment into the standard ten-week course time frame.

Plan Evaluation Assignment

Plan Evaluation Introduction: the goal of this assignment is to familiarize yourself with plans and to answer: how do land-use plans address food and agriculture?

1. Pick a city plan from the drop-down menu using the link on Canvas
2. Find the plan in the General Plan Portal
3. Please be sure to go through the plan before coding to have a good sense of where there is/is not discussion related to food and agriculture (eg. adequacy of food, affordability of food for all people, cultural preferences of food for all people, social equity in the food system, spatial equity in the food system, and people's agency in the food system). Be mindful of relevant appendices (e.g., maps, strategies, etc.).
4. Note the year of the plan.
5. Search for the list of terms in the code list.
6. Pull the relevant policies related to each term. Enter NA if the term is not found in the plan.
7. Where the term is mentioned, copy the policy that contains the term.
8. Note the strength of the policy, the mention of a timeline and committed funding.
 Vague – 1. Vague and implicit policy statements include “intend,” “should,” “promote,” “encourage,” and “consider.” For instance, “when considering enlargements or extensions, conditions may be imposed requiring performance standards and techniques that will serve to reduce overall risk to farmland”

 Strong – 2. Explicit statements should receive a score of 2 and be accompanied with keywords such as “require,” “shall,” “will,” “must,” “adopt,” and “develop.” For example, “the development of public and private uses will not significantly alter agricultural land use.”
9. For each policy with an associated implementation action, copy and paste the implementation action into the spreadsheet, in the same row as the respective policy.

 Implementation actions proposed in the plan include actionable policies, regulations, fiscal incentives, programs, and other implementation tools; proposed actions are sometimes called recommendations. If there are no implementation actions, enter 0.
10. Similarly, for each implementation action, copy and paste associated implementation timeline and funding commitment. Be sure to paste the information in the relevant rows. If there are no timelines or funding commitment, enter 0.
11. Ensure that you have completed all steps for each term. When you are done with your evaluation, double check and be sure that all indicators are scored.
12. Complete evaluations for 4 cities.

Figure 1. Focused plan assessment assignment.

Name of City	Name of Plan	Year Plan was adopted	Search terms	Does this term appear in the plan? (If Yes = # of time; No = 0)	Please copy and paste all Policies in the plan that reference the search term	Policy strength score (No policy = 0; 1 = weak (may, will explore) implicit or vague; 2 = explicit (shall, will))	Are there implementation actions associated with the policy? If yes, please copy and paste implementation actions for respective policy (actional policies, regulations, fiscal incentives, programs, and other implementation tools; proposed actions are sometimes called recommendations.)	Do the implementation actions have a timeline associated with them? Please copy and paste timelines for respective actions where they are available.	Does the implementation actions have funding associated with it? Please copy and paste funding commitment for respective implementation action.
			Agriculture						
			Food						
			Nutrition						
			Water						

Figure 2. Focused plan assessment framework.

We describe the pedagogical tool for plan assessment as “focused” because we used a narrow parameter to identify policies of interest. Specifically, we created a flexible list of search terms defined collectively by the class. These terms were of interest to students and also well represented in plans as evidenced by the teaching team’s initial scan via a frequency test of a much larger (approximately forty search terms) subset of terms that related to the food system.

Our methodology is an extension of Berke and French (1994) aimed at reading policy for specified elements. A central design feature of our framework is that the assessment is a tool in service to planning pedagogy, helping train students and potentially community members (in future work) to understand policy language, and where to find relevant policies in a plan. The exercise is not meant to fully evaluate a plan or corpus of plans. Rather, the purposive discovery of relevant policies by the students over a relatively short amount of time is the central thrust of our plan assessment framework. This condensed approach is developed from a collective ten years of teaching experience, where plan assessments of the full plan or multiple plans had been piloted. Learning from and fine-tuning these previous approaches led the teaching team to frame this exercise and its evaluation.

The exercise was designed to measure the coverage and depth of agriculture, food, water, and nutrition policy and implementation actions across city General Plans (see Figure 2). In comparing the coverage and depth of key terms across plans, we aimed for students to develop a general sensibility of policy and plan quality. The teaching team instructed students to download their respective General Plans from the pre-assembled database. Students searched for keywords (“agriculture,” “food,” “nutrition,” and “water”). To conduct the search, students were encouraged to use the keyword search function on Adobe PDFs of the plans. They then identified related policies, implementation actions, funding mechanisms, and timelines for respective actions.

Students copied and pasted the full policy into the plan assessment spreadsheet and scored for strength: 0 for no policy; 1 for weak policy; and 2 for strong policy language. Students then uploaded the completed spreadsheet for grading. We structured grading to reflect the accuracy with which students applied the assessment framework. Criteria included adherence to instructions, precision in policy scoring, and completeness of the assessment across all required plans and elements. Discrepancies or inconsistencies in student submissions triggered a validation process, leading to a comprehensive reassessment by the teaching team. Detailed, actionable feedback was provided to highlight deviations and guide improvements, aiming to enhance students’ practical skills in plan assessment and their ability to tackle real-world urban planning challenges effectively. Through the grading process, the submitted policy scores were validated by the teaching team.

The teaching team then compiled the results of student plan assessments and presented findings back in class for discussion. To compile findings, policy scores were tallied per city plan and visualized in ARC GIS Pro to communicate the results spatially. This allowed the class to hypothesize why cities in particular regions might have strong policies in one area, but not another. The discussion also allowed the class to discuss urban theories, such as policy diffusion—where adoption of a policy in one jurisdiction influences decision-making in neighboring jurisdictions. To understand comprehensive policy coverage, the teaching team prepared histograms to share the depth and coverage of food, water, agriculture, nutrition policies, and actions across Californian cities. Students could easily see how their individual work contributed to the collective understanding of how California cities were planning (or not). Students were also made aware at the beginning of the assignment that their individual assessments would be contributing to a larger plan assessment and the policies they extracted from the plans would be collated and thematically coded by the teaching team. This helped reinforce collective purposiveness.

Measuring Student Learning

Student knowledge was measured through the general course pre-/post-quiz, and a targeted survey that contained two sets of questions to measure knowledge and skills before and after the plan assessment exercise. The instructor-led plan assessment demonstration was conducted in early February, with assignments graded and returned in early March. The plan assessment survey was launched prior to the end of quarter and after assignment grades were released. A total of two weeks lapsed between completing the assignment and receiving the plan assessment survey. The general course pre/post quiz was launched at the end of quarter per university guidelines.

The plan assessment survey consisted of five open-ended questions, eleven Likert-type scale questions, and one binary question (see Supplementary Appendix A). We used the open-ended questions to help verify the Likert-type scale responses in the event that students imperfectly understood that responding with a “4” indicates being twice as likely as someone who responded with a “2” to recommend the assignment, for example. The survey also elicited feedback on knowledge, perceptions, and levels of civic engagement pre and post assignment,¹ as well as general questions about assignment organization.

The plan assessment survey was voluntary, and a total of sixty-five completed responses were received. Twenty-five students did not supply their feedback, and results could not be analyzed for this group of students. Open-ended responses were coded into coding units and sorted into thematic categories. Likert-type scale questions were explored through descriptive statistics (frequency graphs and contingency tables) and Wilcoxon signed-rank test in Stata/SE 18. The findings presented in this study draw primarily from the plan assessment survey and use the general course quiz to validate and strengthen our findings.

Limitations

Given that the data is representative of a single time point and a single cohort, it may not offer more generalizable outcomes. While we conducted some tests of significance to offer generalizable takeaways, our sample size restricted more rigorous tests of association especially with the contingency tables. A longer time frame could augment findings with additional interviews or statistical analyses of selected indicators. We further caution that the results obtained from this case study may differ based on the topic evaluated, institution, and student cohort, particularly where students bring different lived experiences to the classroom. UC Davis is a Hispanic Serving Institute with a diverse student body and high number of Pell grant recipients. Many students are working while in school. Further studies could also include intercoder reliability assessments to boost the confidence of student-derived plan evaluation findings.

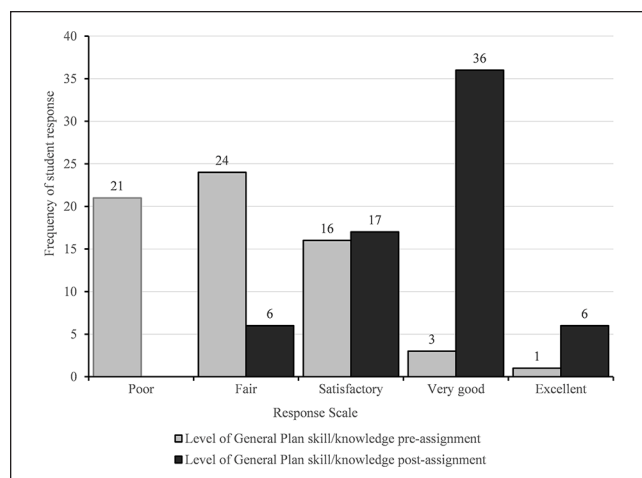


Figure 3. Student’s general plan knowledge and skill levels pre- and post-assignment.

Findings

The self-reported evaluation data showed a discernible improvement in students’ knowledge and skill level after completing the plan assessment exercise. Also, students’ “increased interest in engagement in planning” suggests that the assignment may have contributed to their sense of empowerment as well.

Knowledge and Skill Building

The descriptive statistics point to a significant shift in student’s self-reported knowledge and skills uptake after completing the assignment (see Figure 3). The number of students reporting “very good” and “excellent” General Plan knowledge and skills increased from four (6%) to forty-two (65%) after the exercise (Figure 3). The strong effect of the plan assessment assignment as a tool for improving overall course content knowledge is further validated by the Wilcoxon signed-rank test that shows that the median post-test ranks for General Plan knowledge and skill level were statistically significantly higher than the pre-test ranks ($Z = -6.979, p < .001$).

These findings of improved knowledge, skill sets, and motivation are validated through the overall course quiz that was taken before and after the course. At the start of the course, less than 10 percent of the students could correctly identify all eight required elements of a California comprehensive plan compared to 45 percent of the class at the end of the course with over 90 percent of the students able to identify at least seven of the eight required elements. The shift in student’s capacities is telling in reference to the start of the course where 80 percent of the class could only identify two elements. It is unlikely that the other course elements (e.g., guest lectures with local public officials or walking tours for community asset mapping) directly impacted this specific

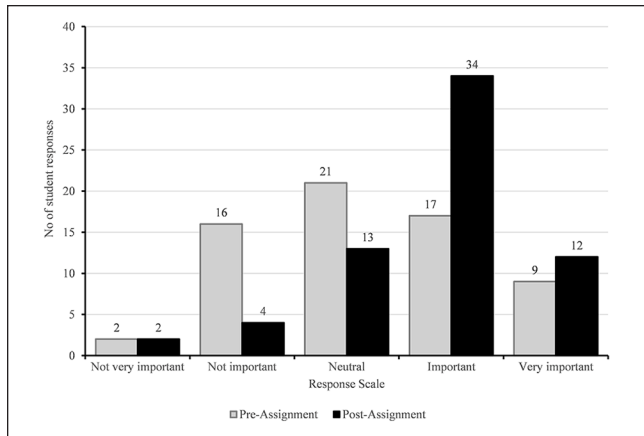


Figure 4. Differences in pre and post assignment student perceptions of participation in planning engagement activities.

learning outcome, though the additional lectures and readings likely reinforced the lessons.

Preparedness to Participate in Planning Processes

As Khakee (2000), Brody, Godschalk, and Burby (2003), Balsas (2012), Mandelbaum (1990), and many others have suggested, reading plans is a form of interactive discourse that contributes to collective learning and agency. To understand how the plan assessment influenced student agency, we included questions about engagement in planning before and after that assignment to test our hypothesis—that reading plans contributes to empowerment and willingness to engage in planning processes. Notably, prior to engaging with the plan assessment exercise, most students were either indifferent (32%) or neutral about engaging in planning activities (28%) compared with a minority (14%) of students who found engagement in planning “very important.”

After participating in the class demonstration, conducting the plan assessment, and engaging in class discourse to share findings, student opinions about engagement in planning shifted with 70 percent of the students reporting they viewed engagement in planning as important or very important (see Figure 4)—up by 31 percentage points post exercise. A Wilcoxon signed-rank test further showed that the median post-exercise ranks for perceived importance of participation in planning processes were statistically significantly higher than the pre-exercise ranks ($Z = -3.992, p < .001$). This finding fits our hypothesis that as students become better equipped to engage with planning through plan assessment, the perceived value in such engagement also increases.

Using open-ended questions, we also asked students to describe if the plan assessment content and exercise prepared them to be more engaged with planning processes. We divided student sentiments into four coding units: Yes, not prepared, somewhat prepared, and unsure. Majority of the

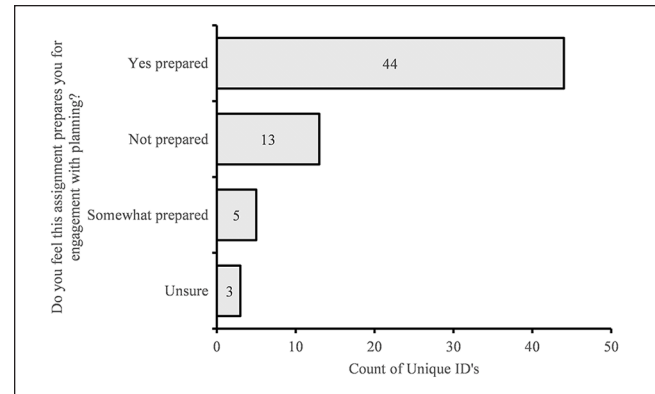


Figure 5. Student preparedness for engagement in planning as a result of the plan assessment assignment.

students felt prepared (68%) to undertake civic engagement after conducting the exercise (see Figure 5).

We distilled five additional categories from the student preparedness question. Three of the five explain how and why students felt more prepared and two categories explain why some students still felt unprepared or unsure. For example, eleven (17%) students reported that the assignment helped them gain new knowledge and understanding of reading plan content. This, in turn, enabled them to be more confident about participating in local government meetings. The following quotes highlight a sentiment reflected across multiple student comments: “. . . It brought me to observe the General Plans and learn a lot from them. With the information I acquired from this assignment it allows me to engage with more confidence” and “I feel like the assignment helped me to understand what to look for in strong policy and what I could ask of city leaders at meetings. . . .” Another thirty-one students (48%) noted that knowing where to find the General Plans, the ability to read and understand plan content, and the foresight of identifying potential impact empowered them to advocate for change. One student reflected on the importance of being able to identify policy language within plans,

I do feel more prepared for civic engagement with the knowledge on what makes a policy useful. For future reference, if I have questions regarding an aspect of my community, I have the skill set to find a General Plan and see what the city council is doing or not doing regarding the issue.

while another noted, “. . . The information found through this assignment can serve as the foundation of one’s statement when providing public comment, for example.” Students also reiterated these sentiments during class reflections and discussions. Serendipitously, two students noted that the new knowledge and skills gained through the plan assessment landed them job opportunities with their respective local governments. One in particular noted,

Table 1. Relationship Between Level of Effort and Skills and Knowledge Required (A) and Gained (B) in the Course of Completing the Plan Assessment Assignment.**A. Level of effort versus Level of skill/knowledge required****Level of skill/knowledge required to complete the assignment**

Level of effort you put into the assignment	1	2	3	4	5	Total
3	25.00	13.30	24.00	6.67	16.67	11 (16.92)
4	50.00	60.00	52.00	46.67	66.67	35 (53.85)
5	25.00	26.67	24.00	46.67	16.67	19 (29.23)
Total	4 (100)	15 (100)	25 (100)	15 (100)	6 (100)	65 (100)

B. Level of effort versus Contribution of assignment to skill/knowledge**Contribution of assignment to your skill/knowledge about general plans and public participation processes**

Level of effort you put into the assignment	1	2	3	4	5	Total
3	0.00	22.22	23.53	16.00	7.69	11 (16.92)
4	100.00	77.78	52.94	56.00	30.77	35 (53.85)
5	0.00	0.00	23.53	28.00	61.54	19 (29.23)
Total	1 (100.0)	9 (100.0)	17 (100.0)	25 (100.0)	13 (100.0)	65 (100)

... One of the positions I applied to is related to updating the housing element of the General Plan so this assignment was very timely and helped prepare me for this internship opportunity. It also emphasized the importance of providing feedback on General Plans. While doing this assignment, even though it wasn't one of my four cities, I consulted my hometown (San Francisco) General Plan and provided feedback on the transportation element that is under revision right now. Had it not been for this assignment, I never would have known the transportation element is being updated or how to be involved in this decision-making process.

Across the pre-/post course quiz, assignment survey, and in-class discussions, we consistently find that students report increased awareness and likelihood of engagement in planning processes. Students also reflected that prior to the exercise, they did not know that they could participate in plan updates. Others reported that they did not know *how* to engage and articulate their points prior to this assignment.

Conversely, seventeen of the sixty-five (26%) students who evaluated the exercise noted that the new knowledge and skills were insufficient to translate into action. These students made the case for more training and experiential engagement with city officials as a means of translating the newly gained knowledge into more actionable praxis. Another two students suggested that students were on different levels in terms of knowledge uptake, and some would benefit from additional class days dedicated to the topic.

It is worth noting that prior to the plan assessment exercise, the majority of students (63%) reported having had some experience engaging in planning processes. Yet, attitudes toward the importance of such engagement were low prior to completing the plan assessment exercise—as self-reported on the plan assessment survey. Only after the exercise, did students report a greater likelihood of participating in planning activities (see Wilcoxon signed-rank results above). These data points combined with student

preparedness sentiments signal that the plan assessment exercise contributes to increased student knowledge and sense of agency.

Assignment Design and Delivery

We also queried students regarding assignment design elements, both instructional (learning environment) and organizational (curriculum and planning). Both elements were ranked highly by the students. For example, in terms of the learning environment, a majority of the students agreed that the level of effort, and knowledge and skill required for the assignment was appropriate (see Table 1). However, taking a closer look, the relationship between effort and level of skills and knowledge required is not linear, even though most students committed a “very good” level of effort (53%) (Table 1A). The contingency table further highlights deviations in student’s perceptions of effort and skills, illustrating that some who put in less effort, perceived the assignment to not take much skill; and those who put in higher levels of effort appear divided, with some saying the assignment only took a “fair” amount of skill and others saying it took a lot skill (level 5). The relationship between level of effort and contribution of the assignment to student’s skills and knowledge related to general plans and public participation is much clearer. As the contingency table (Table 1B) illustrates the more effort students put into the assignment, the higher the perceived contribution of the assignment to their knowledge and skills, and vice versa. These results will need to be balanced with the above finding that highlights that nearly a quarter of the students report they could benefit from additional course content, practice, and discussion around plan assessment. Educators will need to toggle assignment deliverables to require an appropriate effort to meet learning objectives while preparing students to use newly honed skills outside of the classroom.

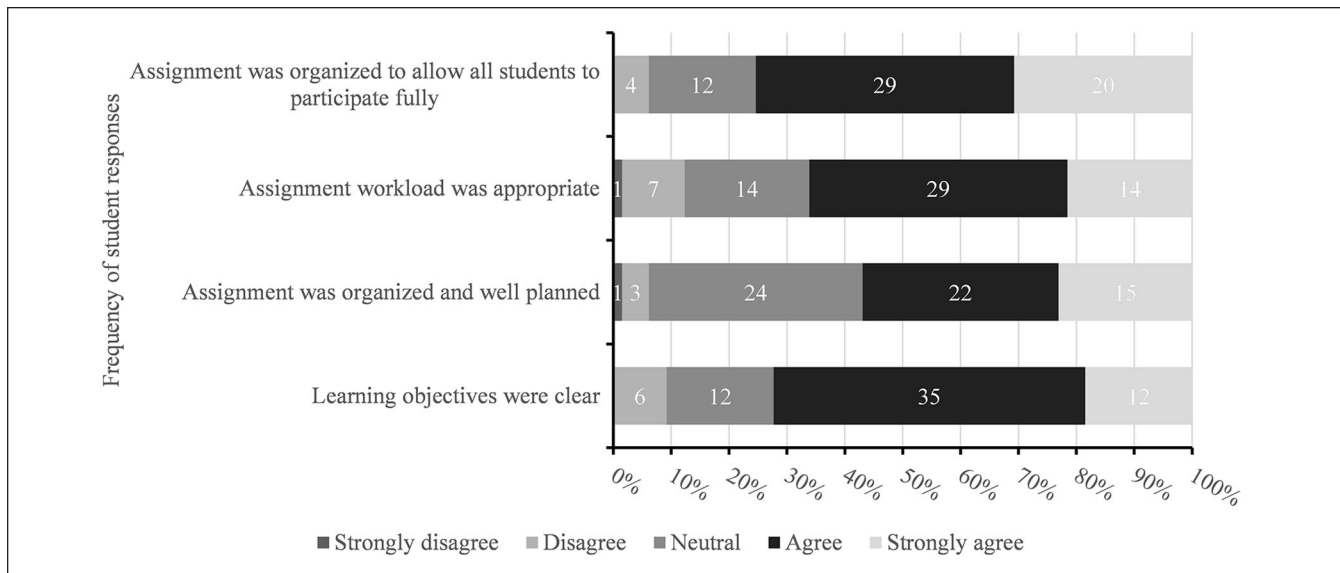


Figure 6. Student perceptions of course design—assignment content.

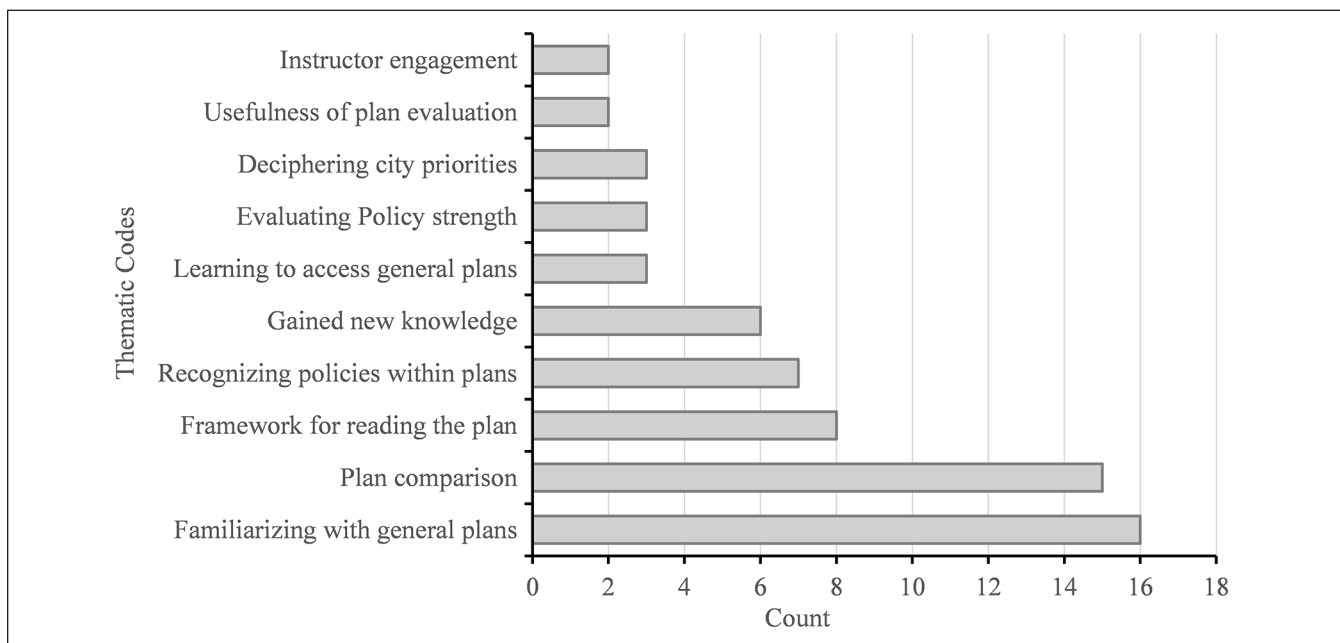


Figure 7. Most valuable aspects of the assignment.

A. Contingency table illustrating the relationship between student's perception of level of effort required to complete the assignment and their perception of skills/knowledge they needed to complete the assignment. B. Contingency table illustrating the relationship between student's perception of level of effort required to complete the assignment and their perception of how the assignment contributed to their knowledge about General Plans and public participation processes. The Likert-type scale used in the contingency tables above corresponds to: 1—Poor, 2—Fair, 3—Satisfactory, 4—Very good, 5—Excellent.

Course content elements of the assignment also fared well. Students reported that the assignment was accessible, enabling full participation (75%), and had clear objectives (72%). A majority of students (57%) also reported favorably on assignment organization (see Figure 6).

From the open-ended question that asks students to reflect on the value of the plan assessment assignment, we found that students appreciated learning the ability to read a plan and understand policy language (see Figure 7). Students reported that having a framework that allowed them to easily access policies and actions and understand the layout of a

General Plan document was valuable. The comparative learning approach—looking at four different city General Plans per student—was also reported as being a highly useful element of the assignment structure. One student reflected, “Learning about how each city addressed certain problems differently was most useful because it taught me different techniques cities used in unique situations.” Another stated,

It was useful not just reading the policies, but specifically being able to compare the set-ups of the plans of different communities. Some were detailed and it was easy to see the priorities of the city, while others lacked detail and did not seem to meet the requirements of a city plan.

In looking across the thematic codes for student feedback in Figure 7, the top 5 most frequently coded categories all relate to being able to read and access a plan.

Students also reflected positively on the learning environment, including instruction, the simulation, and sharing of results back with the class. As one student noted, taking a more participative approach increased their overall understanding and engagement level in the assignment,

... I also liked how we slowly started to understand what we were doing because the goal was explained to us. Rather than just completing an assignment we were able to feel more involved and looked forward to completing the policy searches.

This quote speaks to the student-led data gathering and importance of assembling the assignment material to report back to the class.

Lessons for the Future

When asked what worked and what could be improved for future cohorts, a majority of responses were directed toward improvements (39%) and identifying what aided learning (37%), with nearly a quarter of respondents detailing elements of the assignment that worked well (23%). In particular, students highlighted that the following greatly contributed to the effectiveness of the exercise: running the plan assessment simulation prior to assigning the assignment; providing simple, clear instructions (plan framework); and having faculty and teaching staff available to navigate the assignment. In short, having the teaching team conduct a plan assessment with the class prior to assigning the task to students is appreciated—and an approach that is easy to overlook. Sharing individual student results back with the class was also identified as an effective teaching tool.

Key constraints and improvements centered around the tedious nature of the assignment as the majority of students mentioned that the number of plans to be evaluated was too many. This feedback may simply echo the difficulty in getting readers to read even a single plan (Mandelbaum 1990).

Students also expressed difficulty with using the online database of pre-collected plans in terms of accessing the PDF, downloading the plan, or using the search functionality. This database has since been overhauled and updated, in part thanks to such student feedback. Students also added multiple suggestions for including a reflection paper and reducing the number of assessed plans so that the students could be more reflective about their experiences. With such feedback, a two-plan comparison may be more realistic at the undergraduate level, though this approach should be balanced against reducing the comparative power of the exercise.

More specifically, we also challenged the students to ponder what skills they are currently missing and would require to be more civically engaged with planning processes. Most students wanted to deepen their understanding of the planning process and General Plan development. The second most frequently occurring category of feedback related to students noting that they would benefit from obtaining a stronger planning background. Given that the class consisted of upper division undergraduates, this finding is not surprising. Undergraduates enter the exercise with very little planning background. Efforts to replicate the exercise in graduate-level studies would likely overcome these concerns as most graduate planning programs provide extensive background in the theory, history, and practice of planning.

Discussion

This study explores gaps in plan evaluation teaching, research, and practice with attention to the potential spillover benefits of training students in plan assessment. As this is only the second case study (to our knowledge) on teaching plan assessment, we look forward to adding to the growing literature. Just as Balsas (2012) reflected, we also found that students are generally unaware of the planning process. Nor do students feel that they know how to read a plan at the start of the course. Unlike Balsas (2012), the students in our cohort did not harbor expectations of drafting a plan, perhaps because of being undergraduates in comparison to Balsas’s graduate planning studio made up of soon-to-be professional planners. Yet, we do find that the plan assessment exercise prepared and empowered students to become more engaged with planning. Our findings echo hypotheses from other scholars (Brody, Godschalk, and Burby 2003; King, Feltey, and Susel 1998; Mandelbaum 1990), that exposure to reading and assessing plans will empower and inspire people toward engaging in the process—even if they are not drafting the plan per se. Given the global attention of youth advocating for climate policy at city halls (Noth and Tonzer 2022), our teaching tool is poised to meet rising demands from non-specialists. Our finding also indicates that the plan assessment teaching tool could help such groups engage effectively in policy-making.

In furthering the pedagogical approach, graduating planning students could adapt the exercise for a train-the-trainer model. For example, future work could explore how graduate planning students could teach undergraduates plan assessment techniques, thereby instilling a participatory, facilitation approach that can be carried over into planning practice by teaching community groups to read and assess plans. Indeed, all these audiences will need to be empowered to feel that they *can* provide input for drafting a plan because they have been trained to read, compare, and understand plans.

Before embarking on this outreach, planning schools should review whether and how they currently teach plan assessment or evaluation. General elective classes, akin to the course used in this study, are taught at many accredited planning schools as a gateway to recruit students into the graduate planning program. Our results indicate that including plan assessment exercises in such undergraduate classes could promote recruitment and could easily be embedded into introductory courses with large class sizes. Additional longitudinal studies could further measure recruitment impacts. From this premise, we next reflect on assignment design and areas for improvement.

Elements of the pedagogical success are likely owed to two main factors: pre-collecting plans to reduce the tedious and complicated workload for students helped the assignment focus more on assessment (as opposed to locating public documents or navigating local government websites, each requiring their own sets of skills in rapid reading and knowledge about what one is looking for to begin with). Although the research team pre-collected plans, our effort was not without fault. Some students had difficulties navigating the plan database to find their plan or they struggled to use the keyword search function available for Adobe PDF files. No doubt, the public and specialty interest groups also face similar challenges, necessitating facilitator patience and expertise in aspects of data management. In response, the teaching team will continue to update and improve the database—with the added benefit that such a database of plans can be used for research beyond the extent of the course (e.g., Banginwar et al. 2023; Poirier et al. 2024). Perhaps most tellingly, no state has such a public-facing database to enable large-scale plan evaluations, much less the teaching of plan assessment methods. Such data infrastructure would undoubtedly facilitate teaching and engagement.

Similarly, our approach did not require the students to read the full plan, but only to hone key search terms and their related policies. A benefit of this approach is that a narrowly defined plan assessment can be verified by the teaching team during the course, helping feed collective findings back into class discussion. A drawback of this approach is that students did not engage with the full plan to critically assess how the many parts of the plan articulate with one another. We do mitigate some of these concerns by instructing students to review and skim the plans from start to finish so they have an

idea of plan organization and the sections wherein search terms may appear. In addition, by providing three interconnected aspects of the food system—agriculture, food, and nutrition—as key terms to explore, students could evaluate and reflect on internal consistencies between overall food system goals and actual policy and implementation actions. To further address this concern, students can be asked to conduct a plan reflection on a singular plan or to write a reflection on their attempt to a local jurisdiction's General Plan in its entirety. Where plans can be hundreds of pages in length and deadly dull, this reflective assignment may be more appropriate for graduate students or could be bounded by focusing on a particular element within the plan, for example, housing.

Even with an assignment that did not require students to find the plan in situ nor read the full plan, students reported that being able to see the collective result of the evaluation post submission was empowering and engaging. Results demonstrate a statistically significant difference in student's self-reported knowledge and skills uptake pre and post assignment. Post assignment, we note a 31-percentage point increase in students' likelihood to engage in planning processes in the future. At the same time, several students suggested a reduced workload would be more appropriate. To some extent, such suggestions are a constant in teaching evaluations, and the teaching team did not feel that the suggestions to curtail the assignment were particularly strong or overwhelming in comparison to other courses or cohorts.

Given these results, planning programs should consider integrating plan assessment more intentionally into planning curricula. By far the biggest takeaway for students was gaining familiarity with plans and understanding strong policy language. Students felt empowered and well-informed, ready to engage with their local governments. The degree to which the plan assessment impacted students who were already predisposed to engaging with planning to likely enroll in the course to prepare themselves is one question for future study. Similarly, a future study could tease out whether students with little interest in engagement with planning left feeling more empowered and prepared because of the plan assessment exercise. Follow-up studies could also better understand how such feelings decay over time or lead to incremental steps toward involvement. In support, a literature review suggests that civic engagement is a reinforcing cycle where people who participate in one area of civic engagement, like volunteering, are more likely to get involved in groups, contact public officials, or work with neighbors (Chittum, Enke, and Finley 2022). The causal pathway would suggest that exercises which prepare and inspire early planning engagement can lead to lifelong individual impacts with community-level spillover effects.

Already, civic groups, like the California Environmental Justice Alliance (CEJA, 2021), issue "report cards" to elected officials based on policy positions. A targeted class-based plan assessment could feed into such efforts to score plans or

jurisdictions on whether and how they address particular topics (e.g., Berke et al. 2021; Brinkley and Wagner 2024). Students could assist in creating scorecards for jurisdictions based on a variety of topics, from electrical vehicle readiness to food security—further strengthening the real-world applications and broadening the investment in their collective findings to groups outside the classroom learning environment. Such community partnerships may also help build pipelines to the work world or for internship opportunities, particularly where plan evaluation could aid state efforts to create and update comprehensive plan guidelines. Of note, such educational exercises are inherently political in taking a stance on subject matter, and educators would need to be mindful in balancing student learning objectives with community deliverables.

Beyond students and community groups, local governments could integrate the plan assessment exercise into their participatory processes. For example, Loh and Kim (2021) demonstrated one way in which the public could be engaged in reviewing comprehensive plans. Their work could easily be expanded upon with the use of a less time-intensive tool. Given how new technology has changed teaching and learning, the exercise could also be supplemented by instructional videos, akin to the demonstration delivered in class. In addition, the cost of deploying a plan search engine database such as ours does not have to be as resource prohibitive as it once was. With this study, we hope to reinvigorate innovation around how we teach students and community members alike to read and engage with plans.

Conclusion

The overall goal of this pedagogical research is to revive Mandelbaum's plea to simply read plans. In doing so with students and future community development leaders, we test comprehension and empowerment, with the overarching goal of fostering greater involvement in creating more readable, effective plans. The focused plan assessment exercise we have designed provides a course-scale assignment that introduces students to planning and engagement more broadly while providing feedback and aggregate findings to be discussed during the course. A targeted effort of identifying strong and weak policy language for a discrete topic will help empower students to engage beyond the course.

Among the participating students, we find that there is a discernible improvement in knowledge and skill levels after completing the plan assessment exercise. The number of students reporting "very good" and "excellent" plan knowledge and skills increased from four (6%) to forty-two (65%) after the exercise. An increased interest in engagement in planning was also detected with potential to influence civics well beyond the exercise and into their professional careers.

Even with initial encouraging findings, it is difficult to comment on causality with a single test case. We hope that

readers will expand on this test case in their home institutions and programs while collecting longitudinal data to investigate long-term effects. In rejuvenating Balsas's (2012) early inquiry, we look forward to robust debates on whether and how to teach plan evaluation as such conversations are premised on the bedrock of planning theory. As planning continues to reorient itself toward representative participatory processes, plan assessment could very well be deployed by local governments and community groups alike. It also stands to reason that engaging students and community members in plan assessment could spur the creation of more informed and representative plans.

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Supplemental Material

Supplemental material for this article is available online.

Note

1. In the survey, we defined civic engagement narrowly as "participating in any activity, individually or as a collective, that addresses an issue or public concern, and includes interacting with local government plans and policies." For this article and broader discussion going forward, we have replaced the term civic engagement with the more concise expression "engagement in planning."

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