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Stacked High-Impact Practices (HIPs) and Applied Learning in the Interdisciplinary Classroom

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Abstract: High-impact practices (HIPs) provide active learning experiences for students that can improve learning outcomes, student engagement, and retention rates. Though designed and understood to enhance student engagement and learning, HIPs can place additional demands on faculty time and resources. This article documents the use of multiple HIPs (a writing-intensive course, collaborative assignments, and community-based learning) in an interdisciplinary course on sustainability. It features a case study that includes an overview of the course, explanation of the HIP assignments, documentation of students' work and reflections on HIPs, and my thoughts on the successes and limitations of the featured HIPs. Drawing upon students' assignments and reflections, I examine what aspects of HIPs students respond to with enthusiasm and engagement to better understand what they find valuable and transferable about their learning in the course and the HIP-centered learning environment.

Keywords: high-impact practices, student engagement, interdisciplinary classroom, active learning, applied learning, sustainability

Higher education places a premium on high-impact practices (HIPs) or experiences that help students develop expertise by retaining, integrating, applying, and transferring content and skills. In an Association of American Colleges & Universities (AAC&U) publication, Kuh (2008) identifies the following active learning experiences as high-impact practices: first-year seminars, common intellectual experiences, learning communities, writing-intensive courses, collaborative assignments, undergraduate research, diversity or global learning, ePortfolios, service or community-based learning, internships, and capstone courses. Depending on course design and desired outcomes, students may encounter HIPs individually or in combination as more complex, "stacked" learning experiences (Banks & Gutiérrez, 2017). While integrating one or more active learning experiences into a course can enrich both student and faculty development, HIPs can also require additional time, resources, and organization, thus making them feel prohibitive for faculty and potentially overwhelming for students. This article documents the successes and challenges

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of using multiple or stacked HIPs in an interdisciplinary course taught at a large, public university in the United States. Drawing from students' assignments and reflections, I examine what aspects of HIPs students respond to with enthusiasm and engagement—and where enthusiasm and engagement may wain—to better understand what students find valuable and transferable about the HIP-centered learning environment.

A wealth of scholarship demonstrates the positive outcomes of HIPs for an institution, faculty, and student learners. More specifically, the literature on HIPs in an interdisciplinary learning environment shows how these practices can enhance student learning experiences and outcomes. Assessment of HIPs demonstrates that they can heighten student engagement and motivation, leadership development, retention, and post-university job opportunities. For example, Bonet and Walters (2016) link student participation in first-year learning communities to increased engagement with faculty, peers, and course content. Likewise, Trolian and Jach (2020) conclude that applied learning experiences such as conducting research with faculty can boost student motivation and engagement. Recognizing that learning and development takes place in the classroom and through extracurricular activities, Priest and Clegorne (2015) describe sociocultural conversations with peers, mentoring, and membership in off-campus organizations as HIPs that can contribute to leadership learning and development. In addition to student success and development in the classroom, HIP participation can improve outcomes in terms of student retention (Bonet & Walters, 2016) and post-graduation career plans "through transferable skill development, engaging in learning opportunities, and generating 'stories' for potential employers" (Miller et al., 2017, p. 489). While there are many documented benefits to student participation in HIPs, Johnson and Stage (2018) found HIP offerings may not lead to increased graduation rates at public universities. Additionally, Zilvinskis' (2019) analysis of National Survey of Student Engagement data shows that underserved populations, particularly Black or African American students, are less likely to experience the desired outcomes of HIPs than majority group peers. While acknowledging that HIPs will not necessarily improve outcomes for all learners and institutions, HIPs can enrich the learning environment and various outcomes valued by stakeholders.

Though designed and understood to improve student engagement and learning, HIPs can prove demanding and time-consuming for faculty. In addition to their standard course preparation, faculty using HIPs must design and implement active learning experiences and subsequently assess their value and effectiveness. Some HIP experiences involve additional meetings, collaboration across units, and communication with stakeholders which require extra support and resources seldom provided by administrators (Fuller et al., 2016; Kezar & Holcombe, 2017). Additionally, faculty must appropriately match HIPs to undergraduates' intellectual maturity as they plan and develop

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these experiences (Banks & Gutiérrez, 2017). For these reasons, faculty may avoid or sparingly use HIPs. Identifying ways to combat HIPs-based challenges and burnout, Einbinder (2018) points to the benefits of well-staffed faculty development centers and faculty access to academic journals featuring HIPs-centered scholarship. Additionally, reframing the HIPs conversation to emphasize the benefits to faculty such as teaching growth, advancement of scholarship, and strengthening service contributions (Nolan et al., 2020) may make HIPs more appealing and meaningful for faculty. With appropriate institutional support and resources, both faculty and students can profit from integrating HIPs into the learning environment.

Stacked High-Impact-Practices in a "Sustainable Cities" Course: Introduction

During the past decade, and while teaching at three different institutions, I have integrated each active learning experience the AAC&U designates as a high-impact practice into select courses. While some courses featured one HIP, others included paired HIPs (e.g., learning communities and collaborative assignments, writing-intensive course and undergraduate research). In each case, the HIPs aligned with the course description (e.g., internships in an internship course), learning outcomes (e.g., students will produce written research reflecting strong interdisciplinary academic research practices is a course learning objective in a writing-intensive course), or students' intellectual maturity (e.g., a senior-level writing-intensive or an ePortoflio course). By the time I taught Sustainable Cities at Kennesaw State University, the course featured in this article, I felt confident about my ability to successfully integrate HIPs in a way that contributed to a productive and meaningful educational experience for my students. Yet, I wanted to learn more about the meaning and value my students assign to experiences that higher education characterizes as high impact practices.

As a writing-intensive course featuring collaborative assignments and community-based learning, Sustainable Cities provided several avenues for students to develop interdisciplinary approaches to problem solving. These featured HIPs—a writing-intensive course, collaborative assignments, and community-based learning—also reinforced the value of applied learning and interdisciplinary study and approaches. Student reflections support that the course was successful in achieving these outcomes, but this case study on Sustainable Cities and stacked HIP learning further investigates why. The case study features an overview of the course, explanation of the HIP assignments, documentation of students' work and reflection on the HIPs, and my reflection on successes and limitations of the featured HIPs for student engagement and enthusiasm about the course and its content.

Sustainable Cities, a 4000-level special topics course offered at Kennesaw State University by the Integrative Studies program, explores international, U.S., and national and local perspectives and actions on sustainability to underscore the magnitude and interconnectedness of sustainability discourses.[1] More specifically, the course description indicates,

> Sustainable Cities will explore the topic of sustainability from an interdisciplinary perspective. We will discuss pressing environmental problems facing our local and global societies, while also grounding our investigation in relevant economic, political, and cultural concerns (and solutions). An integrative approach will help us more fully understand the complexity of the conversation, the need to treat sustainability efforts in a holistic fashion, and to see the relevance of this global issue to our daily lives. Finally, we will consider why scientific, political, and media literacy matter when we encounter global issues surrounding sustainability and the development of sustainable cities.

The course learning outcomes include:

1. Identify environmental concerns and policies informing the discourse on sustainability.
2. Discuss the political landscape surrounding sustainability issues.
3. Explain the relationship between city design and quality of life.
4. Analyze media claims about environmental and sustainability topics.
5. Assess whether city design reflects the needs of a diverse citizenship.
6. Evaluate sustainability initiatives from an integrative standpoint and present ideas both orally and in writing.

Fifteen students enrolled in the pilot section. As an upper-level course without pre-requisites, Sustainable Cities attracted students from majors across campus. Offered as a hybrid course, students attended a weekly 75-minute, in-person class meeting and devoted the remaining course hours to online or out-of-classroom activities. Students were not required to purchase texts for Sustainable Cities. Instead, I provided all course materials via the university's online learning management system. Some examples of course materials include journal articles by Susan M. Opp and by Michael Hodson and Simon Marvin, links to web sites (e.g. United Nation's Sustainable Development Agenda), TedTalks by sustainability experts such as Johan Rockström (policy) and Devita Davison (urban agriculture), documents of U.S. federal and state legislation, and a range of other scholarly and popular content.

1 This course is based upon a class designed and taught by former colleagues at the University of North Dakota (UND). Special thanks to Drs. Rebecca Leber-Gottberg and Mia Park for their work developing the first iteration of this course and for allowing me to co-teach and revise the course at UND.

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The ability to recognize, investigate, and act on public issues is a core tenet of interdisciplinary education (Repko et al., 2017). Sustainable Cities seeks to accomplish this goal by featuring three HIP learning experiences in the same course, or what Banks and Gutiérrez (2017) describe as "stacked" experiences, including a writing-intensive framework, collaborative assignments, and an abbreviated community-based learning experience. The course, particularly in terms of these three HIPs, privileges an external-facing approach in which students apply course content to relevant issues on campus and/or their home communities, thus reinforcing the value of applied learning. HIPs and interdisciplinary studies pair well as they both emphasize the value and necessity of applied learning. More specifically, Sustainable Cities, as an interdisciplinary course, gives students the opportunity to "draw on disciplinary perspectives and integrate their insights . . . to advance their understanding of a complex problem with the goal of applying the understanding" (Repko et al., 2017, p. 65) to this real-world problem using the featured HIPs.

From a faculty perspective, stacking HIPs promotes sustained engagement with the course content in various forms. By stacking the three specific HIPs, students grapple with a complex topic in a more integrative fashion as they work to synthesize insights from different disciplinary perspectives, communication forms, and types of interventions (e.g., individual and group, local and national, economic and environmental). Further, some skills and outcomes for the featured HIPs overlap, thus reinforcing the use, development, and transferability of a particular skill. For example, collaborative assignments necessitate the practice of listening and communications skills as well as the ability to recognize and compare different perspectives on an issue. These listening, communications, and analytical skills are relevant and transferable to the field-based learning experience and the courses writing-intensive framework, especially the collaborative writing assignments. While I designed the class to feature HIPs, reflected on their alignment with course goals and objectives, and believed the HIPs would enhance student engagement with course content and their peers, I needed students' work and reflections to confirm whether they found the HIPs valuable and transferable.

Writing-Intensive Course

AAC&U (n.d.) indicates that a writing-intensive course should encourage students "to produce and revise various forms of writing for different audiences in different disciplines." Noting this standard and departmental expectations for Sustainable Cities to function as a writing-intensive course, students submit written work weekly, write with different disciplinary conventions and audiences in mind, and work collaboratively to develop and revise an end-of-semester project. As discussed below, the writing assignments for Sustainable

Cities vary in length, purpose, and intended audience or discipline. Further, the course writing assignments function as knowledge-transforming assignments by requiring students to "weigh evidence, construct an argument, or critique ideas" (Reynolds et al., 2020, p. 12574), which also helps immerse them in relevant scholarly and popular discourses. Yet, the series of assignments that make the course writing-intensive generates considerably less enthusiasm among students than the other two HIPs in the course (i.e., collaborative assignments and community-based learning). Students routinely inform me they are "not a good writer" and, in the end-of-semester reflection, nearly half suggested assigning fewer writing assignments. While students show little enthusiasm for the writing-intensive nature of the class, they acknowledge the writing assignments force them to read closely and prepare more thoroughly for class than if just expected to read. Further, although students claim to dislike the writing-intensive framework, several individual assignments generated high levels of engagement with the course content and class discussion.

As a writing-intensive course, Sustainable Cities requires students to produce written work consistently throughout the semester. A series of 10 informal, short response papers lays the foundation for this requirement by ensuring students write about and analyze course content and ideas on a near weekly basis. These assignments prompt student engagement with the assigned material before class meetings, which also supports class preparation and encourages thoughtful and intentional participation. The preparatory work varies in terms of focus, but the expected length is one or two, double-spaced pages. Because prep work assignments are short and informal, the grading time is not significant (even in a class of 30–40 students). The following is a sample prompt:

> Our readings this week focus on food waste and food (in)security, which are apt for interdisciplinary analysis. Using at least one reading from the week, identify two or three disciplinary perspectives useful for addressing food waste and insecurity, explain what insights or perspectives these disciplines might offer, and discuss what is gained from an interdisciplinary approach.

As an upper-level course with no pre-requisites, Sustainable Cities attracted students from various majors and with different disciplinary groundings. Therefore, preparatory assignments like these helped learners to situate their response within a disciplinary framework of their choosing. Thus, they write from a disciplinary perspective rather than writing for different disciplines as called for by AAC&U (in this course, the shift to "writing for" takes place with larger assignments and as the semester progresses). The preparatory assignments allow students to use a familiar frame to become more comfortable with course content before engaging more deeply in interdisciplinary thinking and analysis. Further, the weekly prep work helps students identify

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and articulate their own disciplinary leanings—underscoring the transferability of disciplinary knowledge—and then later communicate and compare those disciplinary perspectives with their peers during class sessions. Because some students can have prior exposure to interdisciplinary coursework, there can be occasional nods toward the value of an interdisciplinary approach. The following excerpts show sample responses to the above prompt; I italicized claims that demonstrate the student's personal engagement with the prompt, based upon academic and/or professional interests.

- I advocate for large-scale composting efforts. Give/sell the food waste to companies that could break down the food into usable fertilizer . . . *this could create a massive industry that would create jobs and would ultimately create a cheaper fertilizer* that is also more natural and less harmful to the environment, especially our waterways.
- Food insecurity leads to over 160 billion dollars in health costs a year, and that is just an economic consequence. It is also important to consider whose health and well-being is most likely to be compromised. People of color, particularly children, deal with food insecurity at higher rates than white people in the U.S. *Food insecurity is not just an economic or environmental issue but also a racial equity issue.*

These two responses show students engaging with the prompt through both a disciplinary and personal lens. The first response tackles issues of food insecurity using insights from biology and economics. Pointing to the complexity of food waste, the student argues that large-scale composting of uneaten foods could lead to better environmental practices and support for the organic fertilizer industry, including job creation. This student identifies as an innovator and entrepreneur; he is not specifically interested in composting, but he applies his belief that creative problem solving is crucial for establishing a new business venture to the issue. In the second response, the student takes a different approach by using a framework that underscores the interconnectedness of economics, health sciences, and ethnic studies. A former nursing major, this student identifies food insecurity as a public health issue while also grounding her response in racial justice, which aligns with her plans to pursue intersectional advocacy work. In each response, the student applies already existing values and interests to their assessment of food insecurity, thus making the topic more meaningful and relatable. The featured samples demonstrate how even low stakes writing assignments can offer a forum for students to see the transferability of course concepts to their academic, personal, and professional interests, which supports engagement with course content and sustainability issues in our communities.

In addition to the preparatory assignments, students also completed five mid-length, end-of-module writing assignments. Like the preparatory work,

these assignments vary in focus, but the overarching goal is to write about sustainability issues with different audiences and disciplinary perspectives in mind. Further, while the preparatory assignments allow students to write *from* a particular disciplinary perspective (often reflective of their training), the end-of-module assignments require students to write *for* different disciplines (or with different disciplinary perspectives in mind). Writing for different audiences, disciplines, and genres helps "encourage creative, innovative, and research-based thinking, questioning, and reflection" (Bielecki et al., 2018, para. 13), thus allowing students to further develop these skills in preparation for their final project (discussed below). Writing for different audiences also boosted student enthusiasm for the end-of-module assignments, which I did not anticipate. Most students indicated that writing for a different audience (namely outside of their disciplinary training) allowed them to be more creative or take more risks because they did not feel constrained by familiar writing conventions. End-of-module assignments included:

- Sketch a "sustainable city." We define sustainable city here broadly; it could mean anything from an old city improving sustainability to a new city designed from its inception to be sustainable. In addition to your sketch, write a one to two page artist statement explaining the hallmarks of your city and the consequences of your vision for residents.
- Write a one to two page fact sheet on an energy source of your choice (e.g., hydro, nuclear, geothermal, solar, wind). The fact sheet should briefly outline the benefits and drawbacks of your energy source, current usage, prospects, and any other relevant info. It should also include a list of references.

The first assignment prompts students to create a visual depiction of a sustainable city and to explain their choices in an artist statement. By sketching (whether hand-drawn or computer-rendered) and then translating their vision through an artist statement, students work to communicate their ideas to arts-based disciplines and audiences. Although the medium and intended audience for the assignment is the arts broadly, students pulled ideas from multiple disciplines—often offering an interdisciplinary framework—when developing their ideal sustainable city. One student drew a city riverfront and allocated all land running along the river for public parks; beyond the parks, they zoned for business and residential properties. The student explains in his artist statement that "the park space serves two functions: recreational space for all people to access and enjoy, which will support community connection and health, and as a buffer area to protect against property loss if the river surges." The statement also indicated the student envisioned zoning for both residential and commercial properties to ensure residents can live close to retail business and restaurants (reducing the economic and environmental costs of fuel for transportation) and within a mixed-income community (ensuring the

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wealthy did not have unrestricted access to desirable city views and enabling the possibility of cross-class community formation). While none of the students identifies as an artist, all but one responded positively to sketching and crafting an artist statement. Students generally agree sketching forces them to slow down, think about the relevance of course ideas, and visually assess who/what is missing and deserves a place in their city. Through the artist statement, they return to writing and explain their choices, which boosts their confidence in written communication since they are more familiar with and practiced in the form. The assignment generates enthusiasm, as students are happy to share their work in class, explain the reasoning behind their choices, and classmates both praise and gently poke fun at the quality of the sketches.

The second assignment requires students to write a fact sheet on an energy source. Students read and view materials about the pros and cons of their selected energy source before distilling the information into a concise and informative overview of major points and takeaways. Several disciplines use fact sheets, so students write with a specific discipline and audience in mind (ranging from business or healthcare professionals to government officials and educators). For example, one student wrote a fact sheet on solar energy powering the college campus; she wrote the fact sheet with both state legislators and higher education administrators in mind and presented the case largely through an economic frame. Another student wrote to healthcare professionals since she plans to work in the healthcare field; she saw the value in practicing writing for this audience and the benefits of developing interdisciplinary writing and analytical skills (transferable skills). In both cases, students found the assignment meaningful and engaging because they selected a topic they cared about beyond the frame of the course. The disciplines and audiences students wrote for in their fact sheets varied, but they produced a form of writing and argument development quite different from the artist statement or other end-of-module writing forms (e.g., argumentative essay or op-ed).

Lastly, the final course project, discussed in detail in the next section, requires a proposal, draft, peer and instructor feedback to support revisions, and a final product. Students work on the various stages of this project during the latter half of the semester, so the development and revision process unfolds over multiple weeks. The final project is the only course writing assignment requiring significant revision (as called for in the AAC&U description of writing-intensive courses) and collaboration with peers, which White (2018) describes as an effective way to make writing assignments more rigorous and better support research excellence. The final project's rigor applies to faculty as well, as this project requires significantly more feedback—at multiple stages—than other writing assignments in the course. At KSU, writing-intensive courses are capped at a lower number (typically 20), which makes this process of revision, collaboration, and multiple grading stages more manageable.

As noted previously, students routinely report they are not good writers. About half the students also indicated in course evaluations that Sustainable Cities should include fewer writing assignments. The request for fewer writing assignments conflicts with my assessment of how these assignments added value to the course by enhancing student preparation for and engagement in discussions. Thus, while the writing-intensive framework supports engagement, students do not feel enthusiastic about the amount of writing in the class. Noting this disparity, I wish I had been more intentional about challenging "not a good writer" claims, talking about different forms of writing, and the difficulties and rewards of effectively communicating ideas in written form (even using my own experiences as an example). For students who are not accustomed to a writing-intensive course, generating enthusiasm in a 15-week semester may not be a realistic goal, but focusing on building a writing habit, sharing challenges and successes, and discussing the relevance of different forms of writing to future goals may increase enthusiasm and further enhance the perceived value and necessity of a writing-intensive course.

Collaborative Assignments and Projects

Naming collaborative assignments and projects as HIPs, AAC&U (n.d.) describes the purpose and benefits of collaborative learning as "combin[ing] two key goals: learning to work and solve problems in the company of others, and sharpening one's own understanding by listening seriously to the insights of others, especially those with different backgrounds and life experiences." In Sustainable Cities, students work collaboratively on in-class activities throughout the semester. The size and composition of the groups changes throughout the semester (depending on the activity and attendance), but students are expected to privilege relevant disciplinary insights and personal experiences during collaborative worktime. The in-class activities serve as building blocks for out-of-class team projects including a research-based presentation and the final project. While I frequently ask students to work in small groups for informal, in-class activities, I rarely require a formal team-based project/presentation because students complain about the unfair distribution of work among group members even when they decide on group composition. However, because of the small enrollment (15) in Sustainable Cities, and my plans for students to work in small groups for a portion of most class meetings (and for group composition to change each time), I included a group-based research project and presentation in the course. I am glad I made this choice, as both student engagement and enthusiasm for the group-based research project was higher than other course assignments.

Collaborative learning plays a role in most class meetings. Students work in pairs or small groups to grapple with problems addressed in the weekly

materials and learn from one another. Scholarship on teaching and learning research has found collaborative learning enhances critical thinking and intercultural effectiveness (Kilgo et al., 2015) and improves students' attitude toward learning as a result of helping their peers (Barkley et al., 2014). Further, by incorporating in-class collaborative learning activities on a weekly basis, the course aims to build community and combat student complaints and stress about collaborative or group projects (ideally making higher-stakes assignments more palatable and truly collaborative thanks to previously forged relationships). Sample in-class activities include a marketing campaign and a climate legislation bracket.

- *Marketing Campaign*. Your charge is to create a grassroots campaign on food waste (you may want to feature one of the programs we encountered in this week's texts such as Atlanta Food Forest). As you build your campaign, consider how to make food waste "a priority and a universally acknowledged 'American' concern" (Eubanks, 2019, p. 676). You will share your campaign toward the end of class. Be sure to feature facts, figures, or ideas from this week's texts that are compelling, informative, and illustrative. The campaign should be geared toward a specific audience (e.g., Kennesaw State University students, state politicians, K–12 children, etc.).
- *Climate Legislation Bracket*. For this group activity, you will break into four groups. Each group will advocate for one of the bills/laws we read for today. Within your small group, spend 10 minutes preparing for a debate. You will need to outline the purpose of your bill, explain its merits, and make a case for why your bill should be advanced. The legislative "winner" of the first round of each debate will advance to the final round. During the final round, your group will have new perspectives to consider (new group members whose legislation did not advance from the first round); be sure to update, clarify, and reconsider your presentation. We will conclude with a class discussion and vote about which bill you will support/advance out of committee today and why. Legislation includes: Climate solutions act of 2019; Preserve our Lakes and Keep our environment Safe; Women and Climate change act of 2019; Greener Air Standards Act.

The marketing campaign activity requires students to work collaboratively to identify, assess, and begin to address a problem. One group was comprised of three students whose respective disciplinary training included nursing, finance, and education. After talking through the food waste issues that intrigued them individually, they determined their primary goal and shared values focused on educating the public regardless of the topic. The group settled on the issue of expiration dates—including how flawed or inconsistent messaging about food expiration contributes to poor nutritional

outcomes, lost money and wasted resources, and lack of clarity about food safety standards. In addition to these key concerns, the group explained the biggest takeaway from their collaboration was that listening to others' insights and recognizing the common ground (values or priorities rather than disciplinary perspectives) that already existed made decisions about the details of the campaign easier. The process of listening and identifying common ground helped shape a cohesive presentation as each group member engaged with the material and peers in preparing the campaign. Early collaborative successes built enthusiasm for group work, which one could see in how quickly they formed groups, by the animated nature of their conversations, and by their desire to present their work to the class. The enthusiasm for group work made successive in-class activities and formal assignments more enjoyable and effective.

The climate legislation group activity followed the basic rules of a tournament bracket, though with time constraints and class size, there were only two rounds for the climate legislation "tournament." For the first round, students worked in groups of 3–4 to build a case for their selected climate legislation and why it should be given greater consideration by the governing body (members of the class). The activity required the small groups to listen and work collaboratively to form a cogent proposal, and the entire class assumed the responsibility of listening to various arguments and perspectives in order to advance the legislation they believed would have the greatest impact. (The students recognized the tournament bracket was intended to be fun and generate a lively debate rather than reflect how state and federal officials act on legislation.). Although the class saw value in all the featured legislation, they ultimately chose to support the Women and Climate Change Act. In a debriefing conversation, students who had not discussed the legislation in either round indicated their support for the Women and Climate Change Act resulted from its proponents framing their presentation through personal concerns about gender disparities and demonstrating how these seemingly personal concerns were embedded in political and economic problems. Essentially, they took "seriously to the insights of others, especially those with different backgrounds and life experiences" (AAC&U). Listening to classmates discuss the legislation, rather than just reading the text individually, allowed several students to connect with the topic in more meaningful ways and see the value of assessing a text through an interdisciplinary frame. The legislative activity demands engagement with peers and assigned materials. However, the enthusiasm for the discussion and votes—as exemplified by the attention they paid to their peers, interest in personal connections to the legislation, and desire to ask follow-up questions—seems to result from students using personal insights to make a case about the significance and possible consequences of legislation. The class found their peers' insights and passion valuable, and it heightened their enthusiasm for discussing federal legislation.

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Like the in-class group activities, the midterm project requires students to work collaboratively. However, the midterm project requires more planning and out-of-class work than informal classroom activities (e.g., the marketing campaign discussed above). For this formal group project, students work collaboratively to research a consumer item and present their findings to the class. As noted previously, this assignment generates more enthusiasm and engagement than any other. The assignment instructions read:

> Working in a small group, and with our readings in mind, select an item you own or buy regularly—e.g., shoes, headphones, perfume, food products, etc. As you track your item's history, try to document and reflect upon the following:
>
> - Where is the item made and what are the economic conditions of that place? Who are the workers? How are they compensated? What are the working conditions? Is the company/factory/farm, etc. owned by a U.S. or foreign entity?
> - What materials is your item made from? Are there substances in the product that are harmful to you, the person who made it, or to the environment?
> - Consider what you paid for the item and your perception of its value. Has your purchase of this item improved your life? To what degree? Does your purchase of items like this improve the lives of others? What are your responsibilities as a consumer?
>
> Prepare your findings for the class presentation. Your presentation should run about 15 minutes (with each group member speaking). Be prepared to field questions from your classmates.

The collaborative research and presentation build upon the work and goals of in-class group activities. Situated near the midpoint of the semester, students start this project already familiar with their peers and their different communication styles and disciplinary approaches. From my vantage point as an observer, and in conversation with groups, this familiarity contributes to a level of trust, respect, and commitment to collaborative work that is not as evident in the first few weeks of in-class activities. Further, the group members report feeling "two steps ahead" and able to dive into the assignment more confidently because they already know their group members and have had positive previous interactions. They are prepared to engage with the project requirements quickly since they already feel connected personally.

One group researched a locally owned and operated pasta company. They gathered preliminary data about the pasta and company from product packaging. However, to answer the questions prompted by the assignment and additional questions they had formed, they conducted an in-person interview with the company's owner (who they met while visiting the company's stand at a local farmers market). The group began the interview by turning

to questions from the assignment. As a result, they learned some basic facts about the company and its practices (e.g., ingredients are organic and sourced by local farms and businesses, the pasta is packaged in non-recyclable plastic shipped from Pennsylvania, and the company employs 10 part-time, non-benefitted employees). However, they also reported generating questions on the spot—and building upon one another's questions—to gather additional information. In doing so, they learned the owner is committed to employing formerly incarcerated individuals. Although this small business does not have the capital nor demand to support full-time employment or offer benefits, they are committed to investing in their workers and the community in other ways, including offering free cooking classes and partnering with local organizations to address food insecurity in the Atlanta area. The group worked as a *team*—rather than dividing up tasks and compiling disparate information for the presentation—to learn about and engage with a local business owner, which enhanced their understanding of course material and its application beyond the classroom (Armstrong-Mensah et al., 2019). This team approach resulted in a more thorough understanding of the opportunities and challenges of running a small business committed to sustainable environmental, economic, and social practices. In my observations, as students decided what to research, how to collect data, and ultimately do the work (e.g., interviewing the owner and collecting the needed information), teamwork was a key factor in their engagement with the project.

A final collaborative project is the culmination of the early-term collaborative work such as the in-class activities and research presentation I had planned for both individual and group options for the final project, but all students wanted to work in a group because of the positive mid-semester group project experience (and resulting grades). The final project, as outlined below, is both collaborative and writing intensive. Once again, students work in small groups to address a sustainability-based issue of their choice. Reflecting the priorities of writing-intensive work, they write and revise with a particular audience in mind. Further, because the project is collaborative, group members work together to integrate their personal and academic insights on the topic. Final collaborative group project instructions are:

> Looking back at the semester, take stock of what you learned about sustainability efforts at Kennesaw State University, in Kennesaw, and around the globe. You are now tasked with taking these ideas back to your community. Here are a few options you might consider for the "creative" component of your final project:
>
> - Craft a proposal calling for a sustainability plan—or new initiatives—on campus or in a community of your choice.
> - Create an age-appropriate lesson on food waste for elementary school children.

- Write a treatise on the need for checked economic growth to build a truly sustainable future.
- Develop a marketing/political campaign for a sustainability concept such as food expiration dates (going beyond the work we did in class).
- Write your representative a letter supporting a piece of legislation relevant to our course purpose/objectives.

In addition to the creative, community-targeted part of the final project, you will submit a 15–20 page research paper demonstrating your understanding of the selected issue. Your paper should include at least 10 sources, including at least 4 different course texts and 6 external texts (in-text citations and reference page required).

Final collaborative group projects focused on topics such as the greenhouse effect, office green spaces, and the health of the Etowah River. The greenhouse effect group developed a classroom lesson and activity geared toward middle school students. Two of the three group members worked in local schools as classroom aides. Previous coursework in education—along with (inter)disciplinary interests in leadership, political science, and environmental studies—helped inform their interdisciplinary approach to the lesson they developed. The group members indicated they may have chosen the topic individually, but the approach and final product only accounted for the various disciplinary insights and interdisciplinary analysis because they worked collaboratively. The students' experience aligns with findings from Armstrong-Mensah et al. (2019) that senior-level students and recent graduates believed working collaboratively facilitated integration of group members' ideas and ultimately produced a stronger product/project. Like with the lesson plan, the group embraced a collaborative approach to the required research paper. They first worked as a team to outline the paper. While they researched and wrote most sections independently, they revised one another's contributions. All group members felt reading and editing helped them gain a more holistic understanding of the issue, strengthened their own arguments, and created a more seamless paper (including transitions and tone).

Each group submitted an acceptable final project, but the work was not as strong as the mid-semester projects. Enthusiasm for the course assignments and group work dwindled during the final weeks of the semester. This response aligns with my experience teaching fall semester courses as students return from a week-long Thanksgiving break to one week of classes followed by finals week. Many students struggle to remain engaged with their coursework post-break. Noting the decreased engagement and enthusiasm post-Thanksgiving break, one solution is to assign greater weight to the earlier "stuff" project. I might also reduce the points assigned to the final assignment and talk with students about the benefits and drawbacks of group work at this stage in the semester. I believe it is both valuable and necessary to help students develop self-assessment skills about their own work habits, strengths, and needs in different contexts.

Community-Based Learning

A third HIP stacked alongside the writing-intensive framework and collaborative assignments was community-based learning, although not the central component of the course. AAC&U (n.d.) describes it as "field-based 'experiential learning' with community partners." The primary goals of "field-based learning" include "giv[ing] students direct experience with issues they are studying in the curriculum" so they may "both apply what they are learning in real-world settings and reflect in a classroom setting on their service experiences" (AAC&U, n.d.). In support of field-based learning, the course partnered with the campus Office of Sustainability. Unfortunately, because the opportunity for field-based learning popped up unexpectedly mid-semester, the time devoted to the experience and resulting reflection and assessment was limited. Nonetheless, students seemed to respond well to field-based learning and how it enhanced their ability to make connections between course materials and issues on campus.

The community-based learning component of the course unfolded across three interconnected phases. First, the campus sustainability coordinator gave an interactive presentation to the Sustainable Cities class on the Kennesaw State University energy and water dashboards. The dashboards give students, faculty, and staff access to real-time and historical data on resource usage for campus buildings. The data and conversation with the coordinator helped students connect resource usage on campus to course issues such as resource consumption, energy sources, and campus/community planning efforts. Culhane et al. (2018) identify reflection as an "essential part of the experiential learning cycle" (p. 419), and the presentation and resulting discussion allowed for reflection on the dashboard data and individual consumption habits. Advancing our collective understanding of resource usage and shifting from reflection to action, a few weeks after the in-class presentation, students volunteered at the campus food waste audit. Organized by the Office of Sustainability and led by their project coordinator, this data-collection event measured food waste over the course of one day at the primary campus dining facility. Before beginning their two hour volunteer shift, students received a brief training about how to measure and dispose of waste (including food, beverages, napkins, and plastics such as single-use syrup containers). The project coordinator shared final totals for the day, which included 435 pounds of inedible solid food waste (e.g., chicken bones or orange peels), 1220.8 pounds of edible solid food waste, and 85.3 gallons of wasted liquids. Based upon these numbers, and to give students some helpful illustrations or reference points, the coordinator also noted the following about food waste at the Commons (the campus dining location used for the audit):

- In a normal week at the Commons, the equivalent of 204 pizzas get left on plates to be thrown away.
- The amount of food left on plates at the Commons in 1 day could feed a family of four for almost 3 months.
- In a normal week at the Commons, $8,932.47 worth of edible food gets left on plates.
- The amount of drinks left in cups at the Commons in one day is the equivalent of a 40 minute shower. (S. Moore, personal communication, November 18, 2019)

Following the field-based learning experiences, we used in-class meeting time to examine the data, reflect upon the service experience, and make connections to issues encountered in the course and students' personal lives. Students connected their experience and the audit data to a unit on food waste (helping make the theories and data encountered in readings applicable to their immediate choices and the campus community). The reflective conversation started with a critique of community members' decision-making at the dining facility. Responses included, "who needs 15 napkins?" "start with one piece of pizza instead of three in case you don't like it," and "is my tuition paying for all that food we throw out?" Yet, their criticism of others eventually turned to self-reflection, particularly connections to an earlier course project where they monitored their own resource consumption (in categories such as fuel usage, shower length, food waste, etc.). Through this project, students not only monitored but were also expected to adjust their resource consumption for three weeks. Several students recognized that using more than their "fair share" of resources was unfair or unsustainable. Each member of the group still struggled with their ability to effect real change by making different choices at the individual level. One student noted, "I know I'm part of the problem, but I can't be the solution on my own." Based upon the debriefing conversation, it appeared the resource action project did not make a sufficient case for personal, long-term change. However, students acknowledged that seeing the food waste numbers across a full day (moving from one tray to all the trays) impressed upon them how seemingly individual choices add up, with ramifications for communities and society more broadly. Because they were responsible for discarding the food and assessing the amount of waste, they saw and felt the effects of food waste. The food waste audit allowed students to engage with the issue physically (touching the food), intellectually (connecting to issues and data from class), and emotionally (feeling frustrated with others' perceived carelessness). The multiple access points helped showcase both the magnitude and relevance of food waste for students and enhanced their engagement with the issue.

As noted, the community-based learning sequence arose as an opportunity mid-semester and was not part of the original course plan. Yet, based upon

student discussion and feedback, community-based learning proved incredibly beneficial in terms of applying what they learned in class to "real-world settings." Thus, for future iterations of the course, community-based learning opportunities will be an intentional and more significant part of the course design. In preparation for a more substantial community-based learning experience, students will articulate their goals and expectations for working with community partners, reflect on how their interdisciplinary education prepares them to learn from community partners, and consider what it means to be an active and engaged stakeholder. Ideally these changes will help support a deeper commitment to community involvement and civic engagement (Coker et al., 2017), encourage thinking that "leads to action" (Duncan & Kopperund, 2008, p. 44), and allow for connections to and support of other featured HIPs.

Conclusion

Students demonstrated through assignments and feedback (both in-person and through formal course evaluations) that featuring high-impact practice (HIP) learning opportunities in an interdisciplinary classroom can help energize and engage students both in the classroom and beyond. Students commented in course evaluations on how Sustainable Cities inspired them to be more informed and engaged in socio-political issues.

- I truly believe reading about the issue through multiple disciplinary perspectives made me understand the complexity of sustainability issues and the importance of tackling these issues from an interdisciplinary perspective. Also, the food audit helped me see the stakes of food waste and consider what we can do as individuals and members of a community to address the issue.
- This class made me want to be more informed on the world we live in and what goes on around us. I have a better appreciation of how political decisions, which aren't just political but effect [sic] so many parts of life, influence my future. The [climate legislation] bracket really showed me that political decisions affect me and my community and why it's so important to pay attention and even call my representatives.

Though a small cohort, the students in Sustainable Cities routinely confirmed the value of the active learning experiences in helping them integrate and apply course content to "real world" problems. The stacking of HIP learning experiences—a writing-intensive course, collaborative assignments, and community-based learning—enriched the interdisciplinary learning environment by offering repeated and diverse opportunities to engage deeply with the course material.

I hope the student work and commentary on the value of HIPs helps other faculty strengthen the case for integrating these experiences into interdisciplinary courses. Yet, for students and faculty to truly reap the benefits of HIPs, we require additional research and institutional support. As previously indicated, not all students experience the desired and expected outcomes for HIPs equally (Zilvinskis, 2019). Thus, additional research on the gaps in HIPs outcomes and the resources and tools to provide equitable access is needed (e.g., scholarships or stipends for internship programs might allow working students to pursue often unpaid experiences). Additionally, faculty access to resources including time, colleagues' expertise, and financial support would aid in the development of HIP-centered courses.[2]

Biographical Note

Katharine Schaab, PhD, is an Associate Professor of Interdisciplinary Studies and Coordinator of the Interdisciplinary Studies degree program at Kennesaw State University in Georgia. In addition to her research on the Scholarship of Teaching and Learning, Dr. Schaab's work also traverses the fields of American Studies, Critical Race Studies, and Women's and Gender Studies. Her recent work has appeared in *The Journal of Popular Cultural*, *Women's Studies*, *Critical Studies in Television*, *Feminist Formations*, *The Journal of American Culture*, and *Issues in Interdisciplinary Studies*. She can be contacted at kschaab@kennesaw.edu.

References

AAC&U. (n.d.). *High-impact educational practices*. https://www.aacu.org/sites/default/files/files/LEAP/HIP_tables.pdf

Armstrong-Mensah, E., Ramsey-White, K., & Alema-Mensah, E. (2019). Integrative learning in US undergraduate public health education: A review of student perceptions of effective high-impact educational practices at Georgia State University. *Frontiers in Public Health*, *7*, 1–7. https://doi.org/10.3389/fpubh.2019.00101

Banks, J. E., & Gutierrez, J. J. (2017). Undergraduate research in international settings: Synergies in stacked high-impact practices. *Council on Undergraduate Research Quarterly, 37*(3), 18–26.

2 I profited from a HIPs summer institute hosted by my institution's Center for Excellence in Teaching and Learning. Supported by CETL staff, participants worked to (re)design a course and earned a stipend after completing program requirements. I devoted my time in that institute to an introductory course, not Sustainable Cities.

Barkley, E. F., Major, C. H., & Cross, K. P. (2014). *Collaborative learning techniques: A handbook for college faculty*. Jossey-Bass.

Bielecki, C., Wingenbach, G., & Koswatta, T. (2018). Undergraduates' perceived interest and factors affecting participation in selected high-impact experiences. *Research in Higher Education Journal*, *34*.

Bonet, G., & Walters, B. R. (2016). High impact practices: Student engagement and retention. *College Student Journal, 50*(2), 224–235.

Coker, J. S., Heiser, E., Taylor, L., & Book, C. (2017). Impacts of experiential learning depth and breadth on student outcomes. *Journal of Experiential Education*, *40*(1), 5–23. https://doi.org/10.1177/1053825916678265

Culhane, J., Niewolny, K., Clark, S., & Misyak, S. (2018). Exploring the intersections of interdisciplinary teaching, experiential learning, and community engagement: A case study of service learning in practice. *International Journal of Teaching and Learning in Higher Education*, *30*(3), 412–422

Davison, D. (2017, April). *How urban agriculture is transforming Detroit* [Video]. TED. https://www.ted.com/talks/devita_davison_how_urban_agriculture_is_transforming_detroit

Duncan, D., & Kopperud, J. (2008). *Service-learning companion*. Houghton Mifflin Company.

Einbinder, S. D. (2018). A process and outcome evaluation of a one-semester faculty learning community: How universities can help faculty implement high impact practices." *Insight: A Journal of Scholarly Teaching, 13*, 40–58.

Eubanks, L. B. (2019). From a culture of food waste to a culture of food security: A comparison of food waste law and policy in France and in the United States. *William & Mary Environmental Law and Policy Review, 43*(2), 667–687.

Fuller, K. S., King, C., Moore, R., Saint-Louis, N., & Tyner-Mullings, A. R. (2016). Implementation of an evidence-based, high-impact practice: An integrated learning community model in action. *Schools: Studies in Education, 13*(1), 101–126.

Hodson, M. & Marvin, S. (2017). Intensifying or transforming sustainable cities? Fragmented logics of urban environmentalism. *Local Environment 22*(1), 8–22. https://doi.org/10.1080/13549839.2017.1306498

Johnson, S. R., & Stage, F. K. (2018) Academic engagement and student success: Do high-impact practices mean higher graduation rates? *The Journal of Higher Education, 89*(5), 753–781. https://doi.org/10.1080/00221546.2018.1441107

Kezar, A., & Holcombe, E. (2017). Support for high-impact practices: A new tool for administrators. *Liberal Education*. 34–39.

Kilgo, C. A., Sheets, J. K. E., & Pascarella, E. T. (2015). The link between high-impact practices and student learning: Some longitudinal evidence. *Higher Education, 69*, 509–525.

IIS_41-1_3P.indd 98 8/13/23 11:03 AM

Kuh, D. G. (2008). High-impact educational practices: What they are, who has access to them, and why they matter. Washington, DC: Association of American Colleges & Universities.

Miller, A. L., Rocconi, L. M., & Dumford, A. D. (2018). Focus on the finish line: Does high-impact practice participation influence career plans and early job attainment? *Higher Education: The International Journal of Higher Education Research, 75*(3), 489–506. https://doi.org/10.1007/s10734-017-0151-z

Nolan, J. R., McConville, K. S., Addona, V., Tintle, N. L., & Pearl, D. K. (2020). Mentoring undergraduate research in statistics: Reaping the benefits and overcoming the barriers. *Journal of Statistics Education, 28*(2), 140–153. https://doi.org/10.1080/10691898.2020.1756542

Opp, S. M. (2017). The forgotten pillar: A definition for the measurement of social sustainability in American cities. *Local Environment 22*(3), 286–305. https://doi.org/10.1080/13549839.2016.1195800

Priest, K. L., & Clegorne, N. A. (2015). Connecting to experience: High-impact practices for leadership development. *New Directions for Student Leadership, 145*, 71–83. https://doi.org/10.1002/yd.20125

Repko, A. F., Szostak, R., & Buchberger, M. P. (2017). *Introduction to interdisciplinary studies* (2nd ed.). Sage.

Reynolds, J. A., Cai, V., Choi, J., Faller S., Hu, M., Kozhumam, A., Schwartzman, J., & Vohra, A. (2020). Teaching during a pandemic: Using high-impact writing assignments to balance rigor, engagement, flexibility, and workload. *Ecology and Evolution, 10*(22), 12573–12580. https://doi.org/10.1002/ece3.6776

Rockström, J. (2018, September). *5 transformational policies for a prosperous and sustainable world* [Video]. TED. https://www.ted.com/talks/johan_rockstrom_5_transformational_policies_for_a_prosperous_and_sustainable_world?language=en

Trolian, T. L., & Jach, E. A. (2020). Engagement in college and university applied learning experiences and students' academic motivation. *Journal of Experiential Education, 43*(3), 317–335. https://doi.org/10.1177/1053825920925100

United Nations. (n.d.). *Sustainable Development Goals*. https://www.un.org/sustainabledevelopment/

White, A. (2018). Understanding the university and faculty investment in implementing high-impact educational practices. *Journal of the Scholarship of Teaching and Learning, 18*(2), 118–135. https://doi:10.14434/josotl.v18i2.23143

Zilvinskis, J. (2019). Measuring quality in high-impact practices. *Higher Education, 78*, 687–709. https://doi.org/10.1007/s10734-019-00365