Bringing innovation theory to practice in a program model for collaborative knowledge building: The Curriculum Fellows Program

Laura Barbas-Rhoden
Wofford College

Beate Brunow
Wofford College

Sydnie Mick
Wofford College

We share a transferable program model that applies innovation theory to partnership-centered civic engagement hosted and facilitated by an institution of post-secondary education. To address the issue of college readiness, our model created multiple 3-person, cross-sector teams operating with a shared mission and multiple points of contact over the course of a year to prepare classroom-ready curriculum units for area high schools. Teams were comprised of a high school teacher, a college faculty member, and a college student. The cross-sector team model disrupts traditional hierarchies, promotes creativity, and invites multiple actors to draw upon their resources of knowledge and influence to grow, and help others grow, while achieving common goals. In this essay, we present the theory behind our program model; the context from which our program emerged; and details about our practice, including the structure, implementation, and assessment of the program. We conclude with framing questions that invite readers to explore the transferability of the model to other challenges in which partnerships might advance collaborative engagement in their community or organizational context.

The Curriculum Fellows Program at our liberal arts college was designed to bring together multiple stakeholders to support college readiness through shared curricular development for high schools.[1] The Curriculum Fellows Program offers an example of the application of evidence-based research — on innovation, professional development, and civic engagement — to a specific civic challenge. What is most relevant and transferable, however, is the process of ideation, design, and implementation of a program that was effective in addressing a key challenge in organizational and social change: how to create spaces and processes by which multiple stakeholders "own" a challenge, address it collaboratively, and sustain the collaboration until a mutually satisfying conclusion is attained.

Supported by funding from the Arthur Vining Davis Foundations, the Curriculum Fellows Program underwrote teams comprised of one high school teacher, one college faculty member, and one college student, and supported them with funding and programming as they worked collaboratively over the course of a year to prepare classroom-ready materials in an area the teacher identified as a challenge. Our article describes the work and results of two years of the program, in which 29 teams designed classroom-ready curricular projects, presented work at spring teaching summits, and delivered materials in digital format for dissemination via a web-based archive (with over 15,000 downloads at the time of publication), with an estimated direct impact on more than 1,500 high school students. In describing the Fellows program here, we lay out both the articulated program goals and assessment data, and also share how the program has served as a model for taking innovation theory to practice in the context of addressing a civic challenge through partnership-building.[2]

Literature Review

Our partnership model invited multiple actors to draw upon their resources of knowledge and influence to grow and help others grow while achieving shared goals on multiple levels, from that of the individual team to the collective of all teams. Importantly, the model also asked participants to create something new — a tangible curricular unit — that was the product of shared effort. In short, it invited teams to innovate to meet a challenge, and created the conditions by which they could do so. Program design supported collaborative knowledge creation, action learning, reflection, and the celebration of milestones. We examined existing literature related to the different levels on which the program operates: (a) as a model of design and praxis for fostering innovation (defined as an intentional change in product or practice); (b) as a model of high impact civic engagement practice built on faculty-student-community partnerships; and (c) as a model for professional development that enhances teaching and learning.

The demand for innovation and change in higher education, and in society at large, has

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[2] Institutional Review Board approval was sought and granted for all assessment instruments and procedures associated with the Curriculum Fellows program. IRB protocol numbers provided upon request.

been amply documented. Innovation thought leader and IDEO CEO Tim Brown (2009), for example, argues that "seismic shifts taking place in every industry demand a new design practice" to create innovation (p. 37). Brown (2009) himself became a leading proponent of "design thinking" as a way to foster such innovation. A core concept in design thinking is that collaborative work "amplifies, rather than subdues, the creative powers of individuals" (Brown, 2009, p. 37), a notion that echoes the language of partnership guides, which have specifically called for building "community relationships based on local assets for mutually beneficial problem-solving" and mobilizing "communities' assets fully" (Scheibel, Bowley & Jones, 2005, p. 32). Brown offers a practical toolkit for doing innovation in a collaborative way at multiple levels of scale, from a single design team to a large organizational collaboration. Colleges and universities have adopted the practice, for example, by teaching design thinking classes and applying it to curricular innovation (Berrett, 2015).

A key challenge in design thinking, or indeed in any effort involving change, is effectively a leadership challenge: creating and managing the space in which collaborative, creative power can tackle a challenge; and participants feel invested in the pursuit of its resolution and produce an outcome that is successfully implemented (Brown, 2009). For example, research about private sector, for-profit organizations underscores that an innovation team that is separate from an operations team is likely to be unsuccessful in implementing change; its work may either be uninformed or impractical, or generate resentment and tensions, which impede implementation of good ideas (Govindarajan & Trimble, 2012). This theoretical literature, about both design for innovation and the management of tensions associated with it, resonated with our coordinating team as we sought input from multiple stakeholders about the opportunity before us: to forge a mutually beneficial partnership with secondary schools to meet a local challenge. Repeatedly, teachers, college faculty, and college students expressed a desire to be co-designers of solutions for challenges they experienced firsthand and wanted to draw on their own expertise to tackle challenges, but they needed a structure that would lower the transaction cost for doing so.

As we planned our program design, our team was also aware that for institutions of higher education in the United States, collaborative leadership in civic engagement is essential to guarantee a future of sustained relevance and excellence in an era of significant challenges for democratic societies, as well as for colleges and universities. Carol Geary Schneider (2012), writing during her term as President of the Association of American College and Universities (AAC&U), noted that "scholars, students, and staff working with community partners, taking a long-term responsibility for the quality of our lives in community" are key in "a 21st-century argument for the future of our colleges, universities, and community colleges as dedicated inquiry communities that are anchored in specific geographical places and responsibilities" (p. 10). Similarly, higher education theorist Vincent Tinto (2000), whose work addresses the challenge of degree attainment, underscores "the importance of keeping our discourse in higher education open to multiple, and sometimes quite foreign, perspectives" (p. 3). Civic engagement by institutions of higher education can be a mechanism for opening the discursive space for which Tinto calls, and it also serves immediate institutional aims, such as the provision of experiential learning as a high-impact practice for enrolled students (Kuh, 2008), as well as more collaborative aims involving "place-building" (Kimball & Thomas, 2012, pp. 20-21).

The Curriculum Fellows Program took shape with the aim of being a model of innovative service-learning anchored in place-building, partnership, and shared reflection. Core elements of good service-learning are generally recognized as advancing academic and civic learning goals, facilitating collaboration among students, faculty, and community members, and reflecting and assessing processes to document learning and service outcomes (Felten & Clayton, 2011). Though positive outcomes from service-learning for students are substantiated by decades of research (Novak, Markey, & Allen 2007; Warren, 2012), faculty involvement in supporting service-learning is highly variable across campuses and even across divisions and schools on a campus. For institutional excellence in service-learning, faculty participation is imperative (Freedland & Lieberman, 2010; Musil, 2003; Zlotkowski & Williams, 2003). Our program thus designed a partnership model in which success would hinge on close collaboration among all three team members, and in which all three team members would receive a benefit. This partnership model, a collective of triads, encouraged all participants to break from traditional roles assigned to teachers and learners; to invest in achieving a shared goal; and to see themselves as part of a like-minded group of cohorts rallied by the same community challenge.

Our coordinating team drew on an institutional culture of engaging students in teaching and learning partnerships (Project

DEEP, n.d.). In student-faculty partnerships, students can play a key role in designing teaching and learning (Cook-Sather, Bovill & Felten, 2014). The foundational structure of triads of teacher, college faculty, and students in the Curriculum Fellows Program is premised on the notion that students' experiences with and knowledge of curriculum are crucial in the development and implementation of effective new curricula. They are critical co-creators in the design of new teaching modules, with faculty serving as consultants and mentors to students. Alison Cook-Sather, Catherine Bovill, and Peter Felten (2014) define this kind of work that is marked by mutual respect, reciprocity and shared responsibility as "partnerships." As they describe, faculty and students have to respect their different experiences, perspectives and goals (p. 3); students and faculty have to collaborate in a non-hierarchical way to allow for an articulation and acknowledgment of different experiences and perspectives and to provide a foundation for collaborative knowledge building (p. 4); and partners have to share their work and be able to trust and rely on each other (p. 5). The outcome of the Curriculum Fellows Program was to be both a product that addressed a need in our community and a process that enhanced engagement of all stakeholders with a lasting and meaningful impact on faculty and student learning. Because previous faculty-student research funding had decreased substantially, the Fellows program aimed to return some support for that work to underwrite student-faculty collaboration on products oriented toward a civic aim. In addition, the program brought teams together in a common dialogue about learning and teaching, even while each team worked deeply in their discipline as scholars. In effect, organizers heeded Engstrom and Tinto's (1997) admonition to "pay attention to the organization of faculty work, which, in its current form, isolates faculty in stand-alone disciplinary fiefdoms that direct their energies inward rather than outward toward the building of broader intellectual communities on campus" (p. 4). The broader intellectual community in fact expanded beyond the campus to include our peers in secondary education in local high schools.

The Fellows Program was a new initiative on campus that would demand widespread faculty participation and sustained high school teacher participation in order to be successful. Thus, in the ideation and development phase, program organizers sought to design the initiative both to align with strengths and also provide professional development support. Practically, as part of teachers' professional development and annual performance evaluations, they must demonstrate continued learning about new standards, methodologies, and technologies with less autonomy, and often with less adequate support, than postsecondary faculty members have. Area teachers with whom program organizers consulted during early program ideation, observed they desired meaningful professional development, particularly in their disciplines. The team of planners also relied on input from principals and curriculum directors in determining how to direct college assets to opportunities for the improvement of secondary school instruction with the expressed aim of improving college readiness. As the program took shape, program organizers turned to literature on best practices in teacher development to integrate this research into practice.

According to a survey of school administrators, professional development funding is one of the first items cut from a shrinking budget (Gulamhussein, 2013). In addition to limited funding for professional development, many opportunities, especially those organized as one or two-day workshops, have limited effectiveness since teachers frequently leave without clear ideas for implementation of new knowledge or tools in their classrooms (Wei, Darling-Hammond, Andree, Richardson, & Orphanos, 2009). Instead of attending short meetings or workshops that are limited in scope and application, Linda Darling-Hammond (1998) argues that teachers best develop new practices and knowledge by "studying, doing and reflecting; by collaborating with other teachers; by looking closely at students and their work; and by sharing what they see" (p. 2). The most productive settings for professional development, Hammond (1998) says:

> ...provide lots of opportunities for research and inquiry, for trying and testing, for talking about and evaluating the results of learning and teaching. The "rub between theory and practice" occurs most productively when questions arise in the context of real students and work in progress, and where research and disciplined inquiry are also at hand. (p. 2)

In short, the most effective professional development for teachers takes a long-term approach. It provides ongoing support oriented toward creation, implementation, and assessment of lessons; and it engages teachers in inquiry, provides time for reflection, and encourages collaboration with other educators as well as students, and a deeper knowledge of the discipline. The Curriculum Fellows Program incorporated these principles through a team-

based approach to developing innovative materials that support student learning in a setting that cultivates and supports collaborative knowledge building, networking, and reflection about teaching and learning. This sort of professional development support was in scarce supply during our recession-era rollout of the Curriculum Fellows Program and remains so to date in our local context.

Program Goals and Project Implementation: Bringing Innovation Theory to Practice through Partnership

Within a specific community context and informed by a commitment to professional development for teachers through a partnership approach, the Curriculum Fellows program took shape as a unique expression of our liberal arts college mission and a mindful response to challenges identified by our public school partners. Founded in 1854, Wofford College is a small, nationally-ranked liberal arts college with an institutional mission that emphasizes liberal education[3] and the importance of civic leadership on the part of graduates: "Wofford College's mission is to provide superior liberal arts education that prepares its students for extraordinary and positive contributions to society. The focus of Wofford College's mission is upon "fostering commitment to excellence in character, performance, leadership, service to others and life-long learning" (Wofford College, 1998). Though in many ways our liberal arts institution epitomizes an idyllic and iconic college experience, the educational realities of our surrounding environs are stark, and few in our community have access to the kind of education a college like ours offers to students. Upstate South Carolina, in which our urban Spartanburg County campus is located, was the home of a textile industry that thrived in the antebellum period of the American South and was lost to late 20th-century globalization, when mills shuttered in the face of international competition. Roots for low attainment run deep in local history, and now prove a significant

obstacle for a county striving to cultivate economic well-being in an era of globalization. Specifically, according to the Spartanburg Community Indicators Project (n.d.), Spartanburg County has a lower educational status in comparison to national, state, and peer data[4]; and Spartanburg County needs to raise "the value we place on educational achievement from levels sufficient for a textile economy to levels required by the knowledge economy" (Spartanburg Community Indicators Project, p.1).

When program founders initiated project work in 2012, there were few common spaces for sustained dialogue and discussion among teachers, professors, successful college entrants, and current high school students, despite increased attention to college attainment issues in our community. To date, there are no common spaces at the "practitioner" level as comprehensive and interdisciplinary as the Fellows program.[5] The Curriculum Fellows Program aimed to make it easy for stakeholders to engage with one another around a long-term challenge, while generating immediately tangible products and measurable impacts of learning by multiple stakeholders. Given the strategic challenges faced by liberal arts colleges and higher education in general, program organizers also looked for ways the Fellows program might model re-imagination of the nature of faculty work and of student learning experiences, in particular by aligning individual aims around a common purpose identified by members of the local community.

The Curriculum Fellows Program set goals that were responsive to concerns articulated by each stakeholder group, and gave priority to those made explicit by secondary school educators. Four out of nine Spartanburg County high schools have lower rates of high school continuance into college than the state average, and the countywide high school dropout rate is also higher than the state average. As teachers pointed out, the increased emphasis upon post-

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[3] The AAC&U (1998) statement on liberal education offers a clear definition of what we mean by "liberal education" in this essay: "Liberal education requires that we understand the foundations of knowledge and inquiry about nature, culture and society; that we master core skills of perception, analysis, and expression; that we cultivate a respect for truth; that we recognize the importance of historical and cultural context; and that we explore connections among formal learning, citizenship, and service to our communities."

[4] The indicators project is a collaborative initiative that reports on key issues that are

considered indicators for quality of life; besides economy, health, natural environment, social environment and civic health, education is a key indicator (Spartanburg Community Indicators Project, n.d.)

[5] Spartanburg Academic Movement brings together executive level officers from educational institutions and private sector, and describes itself as "an all-in partnership of education, business, government, foundation, community, and faith leaders across Spartanburg County in pursuit of high levels of educational achievement" (Stockwell & Brady, 2014, p. 32).

secondary school attainment demands revised curricula, innovative teaching, and student support at the high school level, as well as greater awareness on college campuses of how educators might most effectively support and challenge students once they enroll in college. Therefore, a primary goal was the creation of a tangible, share-able product of importance to secondary school teachers: a new high school curriculum unit, aligned with state standards for grade level achievement for college readiness, and reflecting current research in both the discipline and scholarship of teaching and learning.

For the other two partner groups, college faculty and college students, complimentary goals were outlined. For college faculty, the program articulated explicit goals which included increased knowledge of high school standards for the discipline and an awareness of their work as contextualized within broader debates, either in the discipline or in education. For college students, the program articulated explicit goals that included a greater understanding of issues relevant to local high school educators; a high level of expectation for outcomes in a project or experience; and an opportunity for positive and productive collaboration with a faculty mentor. Affective impacts for all participants were important as well, and the indirect assessment instrument includes a category of questions asking participants to evaluate their sense of positive affective outcomes, such as whether or not the project "helped me find or maintain enthusiasm and interest in my discipline." We aimed for our program goals, communications, meetings, and assessment materials to be consistent in signaling a desire for building trust, reciprocity and respect, key elements for effective collaborative work and relationship building.

The Curriculum Fellows Program was designed as a partnership model in which each team member contributes knowledge and perspectives unique to their position, and all team members build their knowledge of the discipline, the curriculum, and the community through the collaborative process. The program emphasizes both the process and product of doing work together, and in so doing, aims to seamlessly integrate deep disciplinary work, mindful service-learning, and metacognitive reflection about the transmission of knowledge

and facilitation of learning across disciplinary lines. The program structure invited all team members to take on the role of discipline-oriented, or pedagogical content coaches, at various times throughout the year. Student team members deeply immersed in the discipline provided important input about instructional approaches that supported their own intellectual growth, and faculty members and teachers would often take on the role of pedagogical content coaches in that both learn from each other's settings, challenges, and experiences. One of the most valuable elements of the peer coaching that occurs and the partnerships that develop in the program, is that both faculty members and teachers get to reflect on their teaching practices as they are working towards creating solutions to curricular needs.

Cross-sector teams create a space for collaborative knowledge building; however, they are not necessarily easy to inhabit and demand high-touch coordination because they involve individuals who come from different organizational cultures and seek a variety of personal outcomes, in addition to a common outcome. For this reason, program coordinators developed a year-long schedule to facilitate product development (curriculum units), emphasize the process of collaborative knowledge-building, and provide opportunities for professional development to all team members. Teams participate in themed work group sessions, held during the late afternoon and early evening over a light, "grab-and-work" meal. To support students' role in the program, coordinators realized that students needed opportunities to think about their own educational experience in more abstract terms. Therefore, student fellows also participate in lunch conversations around a common text, *Teaching to Change the World* (Oakes, Lipton, Anderson, & Stillman, 2012), on education and positive, social change, with conversation facilitated by coordinators, interested faculty from the college at large, and visitors from the community. A timeline that included the periodic production of deliverables, such as project proposals and unit drafts, facilitated and supported the process of innovation and creation. Additionally, it encouraged groups to manage their progress, and also provided more information for discussion and feedback among the group and with coordinators.

Table A

Timeline

Timeline	Event	Participants
August	Welcome letter to all team members. Invitation to communicate among team members.	All
Early September	Kick-off dinner. Invited speaker presents on effective communication and project management.	All
Mid-September	Work group meeting (Topic: Project Proposals).	All
Late September	Lunch meeting (Program Overview: Student-Faculty Partnerships).	Student Fellows
Early October	Work group meeting (Topic: Common Core).	All
October	Recommended visit to high school.	Individual groups
Mid October	Project Proposals are due to directors. Feedback provided within one week.	
Late October	Lunch meeting (Educational Experience).	Student Fellows
Early November	Work group meeting (Topic: Assessment).	All
November	Recommended visit to high school or to college campus.	Individual groups and/or high school classes
Late November	Lunch meeting (Classrooms as Communities; Presentation on County's Community Indicators Project).	Student Fellows
Early February	Work group meeting (Topic: Summit Presentations).	All
January/February	Recommended visit to high school or to college campus.	Individual groups and/or high school classes
Late February	Lunch meeting (Assessment of Student Learning).	Student Fellows
Early March	Curriculum Unit due to project directors. Coordinating team prepares units for distribution on USBs and in digital archive.	
April	Summit. All teams present & disseminate product (curriculum units, modules). + Recruitment of new participants.	All + teachers from all districts + school administrators + college constituents

Program materials, from recruitment documents to summit invitations, emphasized that college students, high school teachers, and faculty are partners in a service-learning community, and that the expertise of each stakeholder group is essential for the success of the program. High school teachers contributed nuanced knowledge of state standards, classroom routines, and the cognitive development of youth. College faculty engaged in service-learning by delving deeply in their disciplines with a student researcher, in search of both content and modes of delivery of up-to-date knowledge in their fields. Students, for their part, participated in a highly desirable student-faculty research project in their disciplines, and served as near-peer role models when they enter high school classrooms. With the help of invited speakers from the local community, the program coordinating team worked throughout the year to frame both process and product within the context of the local, state, and national research on educational access and attainment, and to contextualize this information within the broader conversation about the imperative of an educated citizenry in an era of global interactions.

Results

Assessment work at the conclusion of Year 1 and Year 2, aggregated and analyzed by an external reviewer from a nationally renowned Center for Teaching, led not only to direct improvements in the Curriculum Fellows Program but also to more collaborative work in the planning stages of other initiatives on campus. Because of the widespread participation of faculty as Fellows, the program was cited in the college's strategic plan as a model of high-impact community engagement practices of the sort that the college has committed to nurture. More immediately, by highlighting the benefit of shared professional development opportunities for teachers and college faculty, the program resulted in various new forms of collaborative work. Secondary school teachers have participated in summer reading discussion groups on campus, underwritten by the Wofford Center for Innovation and Learning. K-16 language teachers in our region have strengthened their

collaborations and organized shared professional development activities in specific disciplines. Besides the regional impact, the 29 curriculum units that have been developed and are accessible through the college's digital commons,[6] have been downloaded more than 15,000 times across the globe.

The first two years of the program demonstrate that it is a robust program with wide appeal across disciplines. Year 2 included three teams (faculty/student) from another local liberal arts college as well as one Wofford College library faculty member.

Table B
Teams and Distribution

| Year | Total Teams | Divisions | | | High Schools | Counties |
		Hum.	Soc. Sc.	Nat. Sc./Math		
Year 1	15	7	4	4	11	4
Year 2	14	7	3	4	9	3

In both years, the program underwent an external evaluation that assessed the program's structure, participant experiences, and potential to meet its goals.[7] The external evaluator met with college administrators, conducted focus groups with teacher fellows and student fellows, held individual meetings with faculty fellows, and reviewed survey instruments as well as program documents. Summit participants completed surveys on their summit experience, including questions about their satisfaction with the quality of curriculum materials and summit organization; about their enthusiasm with regard to the summit as a professional development opportunity; and an open-ended opportunity for general feedback (see Appendix A). Team members also completed surveys about their experience as a team member; questions for each group (faculty, student, and teacher fellows) were adjusted to reflect the goals of the program for each group of participants (see Appendix B). The same formal survey instruments developed for Year 1 were disseminated again to all participants and summit attendees in Year 2.

Participant surveys from both years indicate that all college faculty either agreed or strongly agreed that the program helped them to become familiar with state and federal education standards. One faculty member stated, "I would highly recommend participation in this project. It is a wonderful opportunity for faculty to rethink their own teaching and to understand challenges of secondary school teachers." All but one college faculty member agreed or strongly agreed that the program helped them understand instructional issues and problems

relevant to local high school educators. Collaborations with high school teachers have sparked many conversations among faculty members about the use and limitations of technology in classrooms. For example, while the use of technology is highly encouraged in high school initiatives that provide laptops or iPads for every student, many websites are blocked and cannot be used for instructional purposes. At the same time, these initiatives will shape expectations of future college students, and faculty will have to think more deeply about the role of technology for teaching and learning in their classrooms. Similarly, college faculty from the sciences found that the equipment and facilities that are available to science teachers can be limiting, and a visit to a college campus with a fully equipped lab affects students' expectations and interest in sciences. In turn, these collaborations have helped high school faculty to clarify college faculty members' expectations for incoming students and have thus provided more texture to their own definition and understanding of college readiness. With this new insight, teachers are able to better prepare their students for the challenges of attaining college access. In the focus group, participants also agreed that college students served as role models for high school students. High school teachers believed that the Curriculum Fellows Program allowed their students to see a connection between high school and college, which in turn helped their students have higher aspirations for college.

Throughout the focus group conversations, high school teachers discussed how working with college faculty allowed them to become

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[6] http://digitalcommons.wofford.edu
[7] Our funder requested external evaluation by an evaluator of our choosing. Dr. Joe Bandy,

Assistant Director of the Vanderbilt Center for Teaching, served as evaluator the two consecutive years of foundation funding.

more familiar with current scholarship and disciplinary debates: 88% of high school faculty that participated in the surveys agreed that they gained new knowledge in their subject areas, and 100% of respondents agreed that the program helped them find or maintain enthusiasm and interest in their disciplines. During a facilitated closing session at the Year 2 Summit, attendees gathered to share what they had learned and to reflect on their experiences. Both visitors and current fellows expressed their appreciation for the professionalism of the work and their sense of renewed enthusiasm for teaching and learning. One high school teacher explained that she finds teaching challenging due to issues with student engagement and state standards, but added that her involvement in the Curriculum Program allowed her to become more optimistic about facing the challenges that accompany teaching, which, in turn, has helped her find more enjoyment and meaning in her work. The high level of enthusiasm among all participants in this session emphasized the uniqueness of the program and its meaningful and transformational structure.

The Curriculum Fellows Program gives students the opportunity to work in close partnership with a faculty mentor, allows them to conduct undergraduate research in curriculum development, and promotes engagement in service-learning in their discipline. All student fellows rated their collaboration with faculty as excellent or very good. In focus groups with the external evaluator, students discussed how their community engagement in this program strengthened their interest to continue involvement within the Spartanburg community. Student fellows also believed that their participation in this program enabled them to complete rigorous, high quality work in their discipline involving undergraduate research that would be relevant to their future career. One college student stated, "It is very rewarding to see the finished portfolio of class materials that I spent so much time creating. I am proud of how they turned out, and I hope they will help a teacher and students at some time in the future." Many of the other college students agreed that the program gave them a greater sense of personal efficacy through helping high school students become more prepared for college.

Both indirect assessment measures, such as participant surveys, and direct assessment measures, such as those completed by the external evaluator, indicated that the partnership approach offered a unique opportunity for each person to learn from the others in the group, demonstrating true reciprocity and action learning in a civic engagement project important to the county, state, and nation. The Fellows Program allowed local high school faculty, college faculty and students to form relationships through collaboration and to network inside their own sectors, as well as with like-minded individuals in other sectors. Specifically, the collaboration provided professional development for area teachers by capitalizing on high-impact activities for student learning under way in college, such as international study, research experiences, and capstone projects. High school faculty participants have had the opportunity to contribute to developing research projects that meet their classroom needs. College faculty members, for their part, have gained a deeper understanding of pedagogy, curricula, and standards in secondary schools to better serve incoming students. As they interact with high school students and faculty, college students expand the relevance of their work and develop effective strategies for communicating content in their disciplines. They also serve as role models for aspiration and attainment of post-secondary education among area high school students. More than 80% of participants in the program that responded to the survey rated their collaboration experience with all members of their group as either excellent or very good.

Finally, though organizers did not set out to measure program impact in terms of campus culture, comments shared by faculty participants with the external evaluator and in references to strategic planning documents, suggest that the program serves as a practical campus example of high-impact community engagement. Assessment data to date indicate that participants are interested in maintaining feedback loops between secondary and postsecondary educators when it comes to expectations regarding college readiness.

Implications and Future Directions

Other colleges and universities interested in working collaboratively with high schools and in fostering innovative student-faculty research might adopt the Curriculum Fellows model with minimal modification. For example, because the Fellows program involved wide participation across academic disciplines, it has appeal for undergraduate institutions seeking to increase STEM participation in meaningful, discipline-appropriate civic engagement work. The program can be used as well to expand and sustain existing work in a specialty field, such as modern language acquisition. The program also provides a model for collaborative undergraduate research in the humanities and social sciences, areas in which traditional research projects and

expectations provide many more obstacles to collaboration (Schantz, 2008). The program is readily adaptable to a variety of contexts, from specialized programs in research universities, such as those with federally-mandated educational outreach programs under the conditions of a grant; as well as small, liberal arts colleges seeking to involve themselves in the community. We offer a set of initial questions to consider for assessing the feasibility of the model's transferability to other opportunities for collaborative innovation and partnerships.

Ideation (innovation theory and civic engagement research)

1. What is a challenge faced by a community of which I am a part?
2. How is that challenge expressed in the community, and to whom does it appear as a challenge? College readiness and attainment? Study-faculty research? Faculty involvement in campus-community partnerships?
3. Who are the key stakeholders that can collaborate to chip away at the challenge? How can faculty, college students and community partners work collaboratively?
4. How does each stakeholder articulate the frustrations or limitations associated with past or current efforts to address the challenge, or parts thereof?

Program design (innovation and design theory)

1. What would an ideal world, in which that challenge was addressed, look and feel like to each stakeholder? How will the program's communication adequately address those needs?
2. What does each stakeholder know that might contribute to a solution? What does each stakeholder enjoy most about what she currently does in the community? What frustrates them the most? How can concerns about inadequate time and past program structures be mitigated?
3. How might the partnership program be designed so that it directs the unique knowledge and strengths of each stakeholder toward the challenge(s) in the spaces within their reach? How can distributive innovation be used in design, implementation and assessment phases?
4. Is the program design one in which each stakeholder's frustration is diminished or erased by collaborative action?

Implementation (partnership, civic engagement practices, professional development)

1. How does the partnership operate at multiple levels of scale, and what are the mechanisms for alignment and communication that reinforce the contributions at each level?
2. How might the program leadership best design the operational implementation of the program to acknowledge different organizational cultures, remove obstacles to collaboration, and energize participants over the arc of involvement, from imagination through design, implementation, and assessment?
3. How can you celebrate small victories as well as bigger ones? What incremental goals can be identified? In what ways can materials be archived for ongoing reference?

We see these questions as readily transferable to a number of challenges facing higher education in which partnerships are required to produce desired outcomes. For example, a sustainability initiative on campus might build triads of multiple stakeholders. A student, resident life staff member, and energy coordinator might design a project to reduce energy use in residence halls. A ground crew member, business office member, and faculty specialist could work together to reduce chemical inputs and fossil fuel consumption in grounds maintenance. A catering staff member, administrative assistant, and an environmental studies major triad could organize to reduce waste associated with special events.

Similarly, the model could be of use for college recruitment and retention challenges and diversity and inclusion efforts that might bring together triads of stakeholders. Here, high school guidance counselors, advising faculty, and staff members from a college could form an effective triad, as well as successful first-generation students or alumni.

For each of these imagined initiatives, however, it is essential to think carefully about immediate and long-term benefits and outcomes. It is vital, as well, to understand that the signaling and communications by program designers, and the satisfaction of participants with the work and program itself, are essential for generating the confidence, trust, and sense of shared responsibility and fulfillment that will actually produce lasting change, on multiple levels of scale, from the individual to the collective.

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Appendix A

Curriculum Fellows Summit Evaluation

1.   I am a
_AVD Team high school teacher _AVD Team Wofford Student   VD Team Faculty
_Other: _____

2.   How satisfied were you with the quality of the presentations?
_Very satisfied   _Satisfied   _Dissatisfied   _Very Dissatisfied

3.   How likely are you to use any of the materials or ideas presented in your classroom or to share them with your colleagues?
_Very Likely   _Likely   _Not Likely   _N/A

4.   If you are not currently part of an AVD High Impact Team, what were the three most important reasons for attending the summit?
_ Opportunity to network
_ Opportunity to learn
_ Opportunity to get new ideas
_ Opportunity to connect with colleagues, socialize
_ Interest in the overall AVD grant project
_ Interest in being part of a team next year
_ Professional Development/Continuing Education Credit
_ N/A

5.   To what extent did today's summit heighten your level of enthusiasm for curriculum development opportunities?
_To a large extent   _To a moderate extent _To little extent _Not at all

6.   How satisfied are you with your overall summit experience?
_ Very satisfied   __ Satisfied   _ Dissatisfied   _ Very Dissatisfied

7. What specific feedback would you give us about highlights and areas for improvement?

Appendix B
Curriculum Fellows Experience - Team Survey

1) What was your role in the project?
       _ High School Teacher
       _ Wofford Student
       _ Wofford Faculty

2) High School Teacher Fellow: Please let us know how you feel about each of the following. For ratings lower than "very good" we would appreciate your insights about what could have improved your experience.

	Excellent	Very Good	Good	Fair	Poor
Quality of project					
Relevance of project for your class					
Creativity of the new lesson plans					
High school student engagement					
High school student gains in learning					
Your collaboration with Wofford faculty					
Your collaboration with Wofford student					
Your communication with program administrators					
Your overall experience					

3) High School Teacher Fellow: Please indicate your level of agreement with each statement.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The program introduced me to new resources.					
I learned about resources that are relevant to the material I teach.					
The program helped me to better meet state or federal standards for learning results.					
I gained new knowledge about my subject area.					
The program helped me find or maintain enthusiasm and interest in my discipline.					
The program helped me teach students in accordance with state standards.					
The program helped me to prepare for the Common Core.					
The program helped me to teach students about interdisciplinary relationships.					

4) High School Teacher Fellow: Please indicate your level of agreement with each statement related to student learning gains.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The project introduced my students to informative disciplinary content.					
The project improved my students' quantitative, language, cultural, or scientific literacy.					
The project improved my students' critical thinking skills.					
The project improved my students' writing skills.					
The project improved my students' speaking skills.					
The project met other learning goals that I had set (please comment below).					

5) High School Teacher Fellow: How well do you think the new materials would work in a similar course (same topic and grade level) at a different school?

	Very well	Moderately well	Poorly
Ease of use			
Adaptability			
Assessment			
Cost			

6) High School Teacher Fellow: Please comment on any instructional issues and concerns you experienced.

7) High School Teacher Fellow: Would you recommend participation in this program to a colleague?

8) Faculty Fellow: Please let us know how you feel about each of the following. For ratings lower

than "very good" we would appreciate your insights about what could have improved your experience.

	Excellent	Very Good	Good	Fair	Poor
Quality of project					
High school student learning experience					
High school student gains in learning					
Your own gain in learning					
Creativity of the new lesson plans					
Your collaboration with your Wofford student partner					
Your collaboration with your High School teacher partner					
Your communication with program administrators					
Your overall experience					

9) Faculty Fellow: Please indicate your level of agreement with each statement.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Not applicable
The program helped me to become familiar with state and federal standards for high school education in disciplines related to the one I teach.						
The program helped me understand instructional issues and problems relevant to local high school educators.						
The program helped me encourage my student partner to maintain high pedagogical standards in creating project materials.						
The program helped me encourage my students engaged in high impact projects to contextualize their work in broader debates, either in the discipline or in education.						
The program fostered a productive collaborative relationship between my Wofford student partner and our teacher partner.						

10) Faculty Fellow: Would you recommend participation in this program to a colleague?

11) Student Fellow: Please let us know how you feel about each of the following. For ratings lower than "very good" we would appreciate your insights about what could have improved your experience.

	Excellent	Very Good	Good	Fair	Poor
Quality of project					
High school student learning experience					
High school student gains in learning					
Creativity of the new lesson plans					
Your collaboration with your High School teacher partner					
Your collaboration with your Wofford faculty partner					
Your communication with program administrators					

Your overall experience					
Relevance of project for your career plans					

12) Student Fellow: Please indicate your level of agreement with each statement.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The program helped me become familiar with state or federal standards for high school education in disciplines related to my project.					
The program helped me understand instructional issues and problems relevant to local high school educators.					
The program encouraged me to have a high level of expectation for outcomes in my project.					
The initiative helped me contextualize my work in terms of broader debates, either in the discipline or in education.					

13) Student Fellow: Would you recommend participation in this program to a fellow student?

14) All Fellows: What recommendations do you have for the program managers?

15) All Fellows: What were the best aspects of your experience?

16) All Fellows: What advice would you offer to future participants?

Thank you! Please let others know about the program, especially if you think of someone who may want to participate.