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Dr. Christopher Bond, Missouri Western State University

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An Introduction to the Edition

ANTHONY T. ATKINS, JEANNE PERSUIT, AND JESS BOERSMA
University of North Carolina, Wilmington

Like so many special issues, this one is a step in a journey. In this case, the themes of resilience and effectiveness over efficiency have become especially pertinent. This issue's origins start in a memorable visit from our Missouri Western State colleague, Dr. Christopher Bond, that occurred over three years ago. In his visit to the University of North Carolina Wilmington, he had the opportunity to obtain a deeper dive past the surface of the UNCW website dedicated to Applied Learning and to better understand the university's Applied Learning programs and culture. While the visibility of UNCW's applied learning work had been increasing steadily at national and international levels, much of outward-facing messaging was based on the fact that UNCW had made Applied Learning its official Quality Enhancement Plan (QEP) as part of its accreditation in 2013.

During the visit to UNCW, Dr. Bond observed many of our applied learning components such as the funded pedagogy initiatives, the Applied Learning Teaching Community, and the Applied Learning Summer Institute and understood how these translated into institutional structures and the culture of our faculty, staff, students, and campus stakeholders. And, it was important for us to learn more about Missouri Western's hosting of the Conference and the Journal of Applied Learning in Higher Education. What Dr. Bond and my co-editors Dr. Jeanne

Persuit and Dr. Tony Atkins saw in that visit was the potential for aligning Missouri Western's showcase conference and journal with our institutional commitment to Applied Learning, as well as a tourist-destination, coastal location ideal for hosting the Conference on Applied Learning in Higher Education in spring 2018.

And here's where resiliency and effectiveness over efficiency really come to the forefront. In 2017, UNCW led one of the largest hurricane response exercises ever outside of Washington D.C., coordinating with eleven locations in N.C. Thanks to the Exercise Director, Eric Griffin, and the advocacy of Pat Leonard (the Vice-Chancellor for Student Affairs) and Dr. Paul Townend (Associate Vice Chancellor Dean of Undergraduate Studies), UNCW's Office of Applied Learning was invited to help embed students into the exercise. These students went well beyond volunteer participants, (which included an actual bus evacuation, over-night residence, and registration of displaced UNCW students into University of North Carolina Greensboro), but also involved them with faculty-mentored undergraduate research in Communication Studies, Nursing, Psychology, and other areas to study the effects of a Category-5 evacuation and 1-year-minimum campus closure scenario. The student-team analyses generated important information about overall campus continuity of operations and education including the decision that it would be better to host CALHE in the spring of 2018 and not in hurricane season. This decision allowed UNCW more time to plan and market the conference more effectively. Unknowingly to us, this decision would come in handy in the actual four-week and one-week campus closures due to Hurricanes Florence and Dorian in fall 2018 and fall 2019. The aftermath of Hurricane Florence affected university operations including the start of this edition.

One point of pride of the University of North Carolina Wilmington is our sense of place. While we enjoy our coastal location, the loveliness of Wrightsville Beach, and the history and beauty of Wilmington and the Cape Fear River, we are also bound by our mission as southeastern North Carolina's public university to engage with our community, which includes a diversity of people, geography, and history. We are always learning from our neighbors while we share our knowledge and service to create a better community. Because of that mission, we chose and affirm our choice to co-create with our students and community partners where and whenever possible. This engagement, we all know, may not be as efficient as deploying a fully dedicated professional team

to plan and execute a conference, but we believe it certainly is more effective if we want students and community partners to learn and buy-in to supporting an academic conference. The delaying of CALHE's 12th until March 2018 allowed UNCW the time and space needed for faculty to work with students to work with campus services, community partners, and event platform providers such as Whova.

As a result, Tony Atkins, who served as the 2018 CALHE Organizer, was able to employ his own graduate students as well as faculty-mentored undergraduate students in Communication studies and Film Studies to drive content creation, marketing, and logistical support. In short, the Conference on Applied Learning in Higher Education could not have happened without actual applied learning! UNCW undergraduate students in Communication Studies provided branding, integrated marketing communication (IMC) planning and execution, social media management, video production services, and event management and logistics support over two semesters. The COM Studies students also worked with Dr. Andre Silva's Film Studies undergraduate students to create graphic animations to brand and promote the conference based on creative briefs from the COM Studies IMC class.

Our moving of the 12th-annual CALHE from the center of the U.S. to the East Coast is, then, also a metaphor for pushing the boundaries and exploring new areas in applied learning. The logo, designed by students, reflected the water that surrounds Wilmington and the movement of new ideas about applied learning that our conference presenters and keynote speaker, Patti Clayton, shared with attendees and that would have a ripple effect as our participants went back to their campuses. The UNCW CALHE also expanded the conference beyond classroom pedagogy to programmatic and curricular areas. This expansion goes beyond specific and idiosyncratic practices to a systematic embedding of applied learning across campus, supported by assessment practices to ensure a high quality of implementation.

Additionally, this orientation toward applied learning helped our students understand the why and how of applied learning: why applied learning is a high-impact practice, and how applied learning efforts connect faculty and students across campus and across higher education. In their reflection statements, the students professed a new

appreciation for the hard work and rewards of applied learning. They demonstrated an understanding of the importance of applied learning, not just to achieve results, but as a transformative pedagogy that changed the way they engaged in their own education.

The invited co-editors who are proud to present you with the articles that follow also have done a good amount of critical reflection as this issue goes to press. As we mentioned earlier, resilience has been an ongoing theme. So much so that we'd multiply it out to say resilience, persistence, and grit. UNCW was mere days away from losing the entire fall 2018 semester because of Hurricane Florence: https://www.chronicle.com/article/Nearly-One-Month-After/244741. Many faculty, students, and staff lost their research, their belongings, their homes. Non-essential work was put on hold well into spring 2019. The power of applied learning and the flexible, non-business-optimized funding we had at our disposal also enabled us to empower over 40 additional faculty-led applied learning projects, most of which working in and with the cape fear community, to still provide high-impact educational experiences and help our fellow neighbors and citizens: https://www.chronicle.com/article/How-Professors-Used/245374. Other challenges (Hurricane Dorian-fall 2019), are here (COVID-19, systemic racism, including the local-for-us legacy of the Wilmington Race Riot of 1898) and many others will doubtlessly emerge. The co-editors believe applied learning and the critical exploration and engagement which are part and parcel of doing applied learning well, can and will play key roles in addressing these challenges. The articles included represent a range of the ways that applied learning are taking place not only here but across the country. We highlight a few of the pieces below.

Carmen L. Huffman, April C. Tallant, Shawna C. Young, and Kong Chen from Western Carolina University in "Use of marketing and gamification to promote participation in extracurricular experiences focused on transferable skill development" emphasize the use of the "DegreePlus" program at WCU. They say that it is a "newly developed initiative to help students develop transferable skills, including professionalism, cultural responsiveness, leadership and teamwork, by attendance at specific extracurricular events. The program was first implemented in the 2017-2018 academic year as a pilot with Honors College students, conditionally admitted students and students in specific living-learning communities." This program, we believe, is like many programs across the country seeking to engage students in teamwork, leadership, profes-

sionalism, and cultural conversations while applying what they learn both in and out of the classroom.

In "Looking Back to Move Forward: Understanding Progressive Education in the 21st Century," Jacquelyn Lee and Phillip Tippit, a graduate student, both from UNC Wilmington in the field of social work argue that the discourse in higher education seems to isolate pedagogic approaches, and subsequently, the concept of progressive education remains unclear. The authors offer a "thematic organizing framework for synthesizing pedagogies that characterize progressive education in the 21st century. The identification of five major themes of contemporary pedagogies bounds the many pedagogical approaches that exist in today's educational landscape." They offer implications and definitions to ground their research. This piece includes work from a graduate student. Several pieces included here are in collaboration with both undergraduate and graduate students. For example, in "Using service-learning to promote transdisciplinary collaborations among undergraduate and graduate Students," Pamela Schuetze, Kathy Doody, and Katrina Fulcher-Rood from the State University of New York Buffalo State in the field of psychology discuss that "professionals are expected to have prior knowledge regarding the expertise of their transdisciplinary peers. However, they may have never been presented with this opportunity during their preparation in higher education. Therefore, a project was designed to address this deficiency at two very different locations: a university campus-based childcare center, and a residential facility supporting homeless women and young children experiencing poverty." They worked with classes of undergraduates to conduct their research and share their results from the experiences.

Morgan Studer from IUPUI in "Community Work-Study as a High Impact Practice: Designing a work-based, community-engaged experiential learning opportunity to increase access for under-resourced college students" explains a program that "considers what might be involved in reframing Community Work-Study (CWS) as a potential [HIP] -- not only a form of financial aid or student employment but also an educational opportunity that can, if designed accordingly, advance civic and career development and the transformative learning of HIPs. A subset of Federal Work Study, CWS provides the opportunity for eligible students to work in meaningful jobs that not only give them applied learning experiences but also contribute to meeting community-identified goals." Studer reminds us of how engrained applied learning is in

Using Service-learning to Promote Transdisciplinary Collaborations among Undergraduate and Graduate Students

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Abstract

Services to children are often provided through a transdisciplinary model, particularly when students are receiving special education services and supports. Given the individual and diverse needs of these children, professionals often work collaboratively in evaluating students, interpreting results, and making recommendations for appropriate services. Professionals are expected to have prior knowledge regarding the expertise of their trans-disciplinary peers. However, they may have never been presented with this opportunity during their preparation in higher education. Therefore, a project was designed to address this deficiency at two very different locations: a university campus-based child care center, and a residential facility supporting homeless women and young children experiencing poverty. Participants were 109 undergraduate psychology students in an advanced developmental psychology class, 93 exceptional education graduate students, and 24 undergraduate speech/language pathology students. In groups consisting of students from each discipline, students completed developmental screenings on 2-3 children ranging from 1 month to 5 years of age. Results of a pre-posttest evaluation indicated that students were significantly more comfortable working in transdisciplinary collaborative groups and more interested in working in transdisciplinary groups in a future professional capacity after completing this service-learning project.

Introduction

Service-learning courses have been steadily increasing in number on college campuses over the past several decades. This concept has been described as an educational approach in which students complete and reflect on a structured service activity to enhance their understanding of course content (Jacoby, 1996). Proponents of academic service-learning believe that the real-world application of classroom knowledge in a community setting allows students to synthesize course material in more meaningful ways and can be transformational for students (Eyler & Giles, 1999). In fact, research has found that students who participate in service-learning show numerous positive outcomes including more positive attitudes toward self, school, learning and civic engagement, and increased social skills and academic achievement (e.g., Billig, 2009; Celio, Durlak, & Dymnicki, 2011; Conway, Amel & Gerwien, 2009). Finally, service-learning projects offer valuable opportunities for *career exploration* and enable students to acquire career-specific

experiences. Thus, service-learning is an ideal platform for exposing students to the specific expectations, roles, and responsibilities that they are likely to encounter in their chosen profession.

In order to effectively prepare students in higher education for careers, it is critical to identify the knowledge and skills necessary to be successful professionals. Service-learning projects can then be designed with these goals and objectives in mind. In fact, establishing clear objectives for students and helping them make explicit connections between the service-learning project and content acquisition is associated with stronger student academic engagement and performance (Billig, Root & Jesse, 2005), increased problem-solving skills (Conrad & Hedin, 1982) and improved satisfaction with both academic and service-learning (Hamilton & Zeldin, 1987). With this in mind, one of our goals was to explore the efficacy of using service-learning for promoting discipline-specific professional responsibilities and methods.

Students with majors in disciplines such as education, social work, speech and language pathology, and psychology often express an interest in working with children and families. Although the primary focus of this work may differ across disciplines, a shared objective is to identify and provide effective interventions to optimize development for the child. Successful interventions require the collaboration of professionals from a variety of disciplinary perspectives. In fact, the importance of gaining insights from many disciplines with respect to a child's development is well recognized. Guralnik (2000) suggests, "the interdisciplinary team assessment of young children with possible developmental delays or of those with established developmental disabilities constitutes a critical component of the larger system of services and supports for children and their families during the early childhood years (p.3)."

Thus, a primary challenge for educators preparing students to work with children and families in early intervention settings is to ensure they have an appropriate depth of knowledge not only in their own expertise area but also across professional domains. For example, a student preparing to work as a speech-language pathologist (SLP) must gain expertise in the components of language, language development, and assessment of language performance. In addition, this student will need to recognize the impact of a child's physical, emotional, cognitive,

and social development to fully understand the child's developmental trajectory. Similarly, students in other disciplines such as psychology and special education will benefit from fully understanding all aspects of language development from their peers in speech-language pathology. With this in mind, it may be beneficial for this student to work with peers in special education, psychology, physical therapy, and occupational therapy to gain a holistic view of children and their development. A transdisciplinary teaching model is a potential solution to provide this type of learning for students during their college career. However, little transdisciplinary exposure is provided to students. We tested the efficacy of using a transdisciplinary teaching model to address this challenge as well as to increase the comfort level of students in working with young children and conducting developmental assessments. In transdisciplinary models, teams of individuals from different disciplines collaborate with one another to complete professional work such as assessment and intervention planning (Kaczmarek, Pennington, & Goldstein, 2000; McClam & Flores-Scott, 2012; Nash, 2008). The hallmark of an interdisciplinary team is its ability to integrate and synthesize information from numerous disciplines through an interactive group decision-making process (Garner, 1994; Rokusek, 1995). The aim of having students from diverse educational backgrounds work together is to help them learn a variety of theoretical approaches and apply them in naturalistic settings (Nash, 2008). According to McClam and Flores-Scott (2012) "describing, understanding, and finding solutions for the critical sustainability problems we face today require the development of cross-disciplinary approaches to teaching, learning, and research" (p. 231). It is important to recognize that one professional from one discipline will not be able to solve and meet all of the unique needs of a child and their family (Lamorey & Ryan, 1998). Also, family structures are complex and have numerous strengths, needs, resources, desires, hopes, and dreams (Lamorey & Ryan, 1998). Senge (1973) stated that teams that work together to support families do not struggle because of an individual's skill but "because they are unable to pull their diverse functions and talents into a productive whole" (p. 69). There is a clear need to have students think broader than their own discipline of study. This breadth of knowledge will potentially help improve the services they provide children and families upon entering the field. Transdisciplinary team approaches allow educators to pair students from different educational backgrounds and have them work with one another to conceptualize and critically think through problems facing them.

Transdisciplinary models are one of the most prevalent models used in early intervention (King, Strachan, Tucker, Duwyn, Desserud, & Shillington, 2009; Vanderhoff & Act, 2004). This type of approach has been reinforced by early intervention legislation dating back to 1986, which called for cross-disciplinary teams and the inclusion of parents as part of the decision-making process (Senge, 1973). This approach can reduce discontinuity of services, decrease conflicting and confusing reports to families, and increase service coordination (King et al., 2009). Also, using a transdisciplinary team model for early intervention services has been linked to more efficient service delivery, reduction in cost, more coherent intervention plans, and facilitation of professional development (King et. al, 2009). King et. al (2009) provided three essential components for successful implementation of transdisciplinary teams. First, professionals from multiple disciplines assess the child simultaneously. This assessment should include both standardized and informal tools. During this assessment, one person on the team should serve as the primary facilitator, one or two other professionals interact with the child, and the rest of the team observes the child interactions. Second, successful transdisciplinary teams work best when team members work together and schedule working meetings on a regular basis. This will allow team members to regularly exchange knowledge and collaborate on intervention planning. Finally, a primary feature of transdisciplinary work is the idea of role release. Role release enables the team to become truly transdisciplinary, as specific members will "release" and teach intervention strategies from their own discipline and allow other team members to carry out this intervention with the child and their family.

Given the widespread usage of transdisciplinary models in early intervention programs, it is critical that institutions of higher education prepare students to be effective practitioners on teams consisting of individuals from disciplines that differ from their own. Historically, there have been few programs of study in higher education that have provided opportunities for students to develop these skills in applied settings (Kilgo & Bruder,1997; Silverman, Hong, Trepanier-Street, 2010). Barriers to providing interdisciplinary experiences for students are numerous particularly in settings that provide services (see Kilgo & Bruder, 1997 for review) Thus, faculty members in higher education need to be creative in creating such opportunities for students. The

primary purpose of this study was to explore the effectiveness of using a service-learning project to enhance student interest in participating in transdisciplinary collaborations that mirror those found in professional settings.

Method

Description of the Service-learning Project

This study was conducted across four semesters at a mid-sized, public university located in an urban area in the northeastern United States. During the first three semesters, 93 graduate students in a special education course (EXE 650) and 109 undergraduate students in and advanced developmental psychology course (PSY 417) were placed into teams of 2-3 students consisting of at least one student from EXE 650 and one student from PSY 417. During the fourth semester, 27 undergraduate students enrolled in a speech and language pathology course (SLP 424) joined the project. Each course consisted entirely of students majoring in that specific discipline so each student group consisted of at least one student majoring in psychology, one student majoring in speech-language pathology, and one certified teacher (graduate student in exceptional education).

At the beginning of each semester, students were asked to complete a survey designed to assess their attitudes regarding transdisciplinary collaboration, conducting developmental assessments and working with very young children (birth to age 5) in their careers (see Table 1). Students were then extensively trained by their instructors (the authors) to administer and score the Ages and Stages Questionnaire, 3rd Edition (ASQ-3; Bricker, Squires, Mounts, Potter, Nickel, Twombly & Farrell, 1999). Each team was then assigned children that were located either at a child care center located on the college campus that primarily serves the children of faculty, staff, and students at the college, or at a transitional residential facility that provides housing and support programs for homeless, single-parent families experiencing poverty. These screenings were sponsored through a partnership with Help Me Grow Western New York, which is part of the national Help Me Grow organization that aims to "build effective early childhood systems that mitigate the impact of adversity and support protective factors among families, so that all children can grow, develop, and thrive to their full potential (HMG, 2018)." As referenced, to expose students to transdis-

ciplinary collaboration, each student was responsible for taking the lead on one developmental assessment while other students in the group provided support.

Students were then responsible for scoring the assessments and completing course assignments related to the developmental screening project (a combination of writing assignments and oral case presentations). At the completion of the project, students were again asked to complete the survey assessing their attitudes regarding interdisciplinary collaboration and working with very young children

Description of the Courses

Each course in this project included service-learning and students were asked to complete a minimum of 10 hours of service for an identified community need. In partial fulfillment of this requirement, students in these three courses completed developmental screenings of young children, between birth and age 5, as part of Help Me Grow.

EXE 650: Assessment of Young Children with Disabilities

This course is an upper-level graduate course focusing on the assessment of infants and preschoolers with disabilities. The content of this course includes assessment of young children in each of the early childhood developmental domains: physical (including fine and gross motor), social-emotional, cognitive, communicative (expressive and receptive), and adaptive. The course also focuses heavily on the implementation of universal screening tools, administration of varying types of assessments such as arena, environmental, criterion-referenced, and norm-based. About half of the students are early childhood special education majors, seeking a graduate degree in such. The second half of students are childhood (grades 1-6) majors, seeking to extend their certification down to the early childhood (birth-2nd grade) developmental level. All students in this course have some prior experience in working with children with disabilities in preschool or school-aged settings. Prior to taking this course, students must complete pre-requisite courses in behavior management, specialized and differentiated instruction, and a course in overall assessment strategies, including how to collect, graph, and analyze assessment data for school-aged children.

PSY 417: The Atypical Infant
This course is an introduction to issues related to infant mental health and takes a developmental psychopathology approach to examining risk factors, developmental delays and developmental disabilities during the first three years of life. Screening, assessment and early intervention is also surveyed. Students who take this course are either majoring (n=49) or minoring (n=4) in psychology and must have completed an introductory psychology course and either a child development or lifespan developmental course in psychology. Thus, these students are all either juniors or seniors with prior academic experience in child development.

SLP 424 Speech-Language Pathology Programs in Schools
This course is an upper-division course focusing on the ways in which SLPs provide assessment and treatment services in school-based settings for children birth – 21 years of age. The course focuses on assessment models that promote collaboration among school-based professionals, as well as collaborative intervention techniques such as response to intervention, collaborative teaching, and consultative services. All students enrolled are seniors majoring in speech-language pathology and had to have completed course work in language acquisition, language remediation, audiology, and communication disorders. Therefore, all students had prior experience in language development, assessment, and disorders for children birth to five years of age.

Perceptions of the Benefits of Transdisciplinary Collaborations
Quantitative measures of student perceptions to interdisciplinary collaborations and attitudes about working with very young children were obtained using a survey designed by the authors (see Table 1). This survey consisted of 6 items which were each measured using a 5-point Likert-type rating scale ranging from strongly disapprove to strongly approve, and was administered at both the beginning and end of the semester.

In addition, at the beginning of the project students were asked to complete open-ended questions regarding their perceptions in regard to collaborating with others to complete academic work, and their previous experience completing service-learning projects. At the end of the project, students were asked open-ended questions about their experiences administering and interpreting the ASQ with students in other disciplines. Specifically, they were asked if their perceptions about

working collaboratively changed after completing the service-learning project, the aspects of the project they enjoyed, and the aspects they found challenging. The third author of the study completed qualitative content analysis to understand the students' perceptions regarding collaborative work and service-learning projects before and after participating in the project. In qualitative content analysis participant talk is analyzed to develop specific themes that relate to a participant's behavior or experiences (Creswell, 2012; Downe-Wamboldt, 1992). The study's analysis method was established using guidelines from Creswell (2012). First, the third author established the unit of analysis, which was the students' individual responses to each open-ended question. Next, the third author read each individual response three times and highlighted keywords or phrases that encompassed the main idea/theme of the response. These keywords were used to establish a coding schema. This coding schema consisted of a keyword and a corresponding definition that was constructed based on the responses provided by students. This coding schema was then used to code all pre and post open-ended responses. This coding system allowed the authors to generate the underlying meaning and intent of the participant responses (Cavanagh, 1997; Downe-Wamboldt, 1992; Graneheim & Lundman, 2004). Also, coding allows investigators to take a singular account from one participant and compare and combine that account with others of a similar nature. By comparing and contrasting responses with the same code, the third author generated the primary themes found from this qualitative analysis.

Results

Changes in Interest in Participating in Transdisciplinary Collaborations

Separate 3 (course) X 2 (pre/post) analyses of variance were conducted for the two items (items # 4 and #5 – see Table 1) designed to measure perceptions regarding interdisciplinary collaborations. Results of these analyses indicated students in all three courses were much more comfortable working with individuals from other disciplines after completing the developmental screening project, $F(2,223) = 6.49$, $p = .01$, $\eta p2 = .07$, and indicated a greater interest in working with professionals from other disciplines once they completed their degree after completing the screening project relative to their interest level before the screening project, $F(2,223) = 4.49$, $p = .04$, $\eta p2 = .03$.

Based on qualitative analyses, students stated the following were aspects they enjoyed about collaborative work prior to participating in this service-learning project: (1) having the ability to learn from others, (2) hearing a variety of perspectives that may be different from their own, and (3) distributing the workload among all group members. The following were the primary dislikes noted by students regarding collaborative academic work before participating in ASQ data collection: (1) difficulties coordinating schedules among group members, (2) not being able to equally distribute the workload among all students, (3) disagreements about the ways in which to complete an assignment, and (4) reluctance in trusting and relying on group members to complete specific tasks. During pre-testing the majority of students across all class disciplines stated that they had experience working collaboratively to complete class assignments, however few students had participated in service-learning.

Qualitative analyses of the post-survey open-ended questions found that in general the students' perceptions about working collaboratively with other students changed in a positive manner. In general, there was a decrease in comments regarding dislikes and/or difficulties when collaborating with others. Specifically, comments regarding disagreements among team members and difficult trusting in and relying on group members were not present in the post-project survey. Based on the coding of participant responses, positive aspects of collaboration in this survey learning project fell into one of the three themes: (1) personal growth, (2) professional development, and (3) community connectivity. In terms of personal growth, responses found in this common code typically were about the overall student learning experience, learning from other diverse backgrounds, and building confidence. For example, one student in exceptional education stated this when asked about aspects enjoyed: "being able to help my partner find confidence and ease when doing the ASQ and helping her with strategies to help the child's attention". Similarly, a psychology student stated "It was great to have group members from other majors to complete the ASQ with. We helped and supported each other which allowed us to effectively complete the assignment". Finally, a different psychology student expressed the most positive aspect of participating in this service-learning project was "hearing other people's ideas and values. Working with someone older than me and more experienced made me more confident when completing the ASQ".

For the theme of professional development, student responses discussed that the service-learning project helped them understand and link to tasks they would potentially complete in their profession and that they were able to receive hands on experience they did not previously have. For example, a SLP student wrote, "I think it's a great class to prepare you for future situations and getting people comfortable with working with people out in the real world". Also, an exceptional education student reported this about the service-learning project "it helps to create real world situations outside of the classroom – to help your community and learn more than you could ever learn from a textbook". Finally, after participating in the service-learning project students felt it helped them understand and connect with their community. One exceptional education student stated, "I enjoyed the service-learning project because they are new and different ways to incorporate topics and procedures learned in class and put to use in an environment that matters. It gets me more familiar with my community and what is offered". In addition, a psychology student wrote, "I think that participating in service-learning is a great way to extend your comfort zone a little and do something helpful for another person".

Discussion

In conclusion, students who participated in this transdisciplinary service-learning opportunity generally had favorable feelings about these collaborations and expressed belief in the value of learning from the perspectives of others in disciplines that differed from their own. The qualitative findings indicated that students perceived that their participation in this assignment helped them to appreciate their own skill set and expertise in regard to working with young children. Because they so often take coursework with only others from their same discipline, there is a tendency to take their skill set for granted, as "everyone" can do what they can do, in their eyes. However, once they are placed on a team representing one or two other disciplines, students gain a greater understanding and appreciation for not only the skills and expertise of their transdisciplinary peers but of their own valuable contributions as well. This project allowed students to clearly see what they "brought to the table" in terms of their abilities to interact and engage with young children while assessing achievement of developmental milestones across several domains. Students not only learned from each other, but also realized they had the ability to share their own knowledge with others and share diverse skill sets that others may not possess. In this

regard, this project was incredibly innovative. Small group work is commonly seen among students in academia, but always within their own coursework and discipline. Students reported a new-found respect for their own discipline and proficiency within their field as a result of this experience. Thus, these findings highlight the value of providing both undergraduate and graduate students with the opportunities to collaborate with students from other disciplinary perspectives in authentic, collaborative projects. This is particularly important for students who are likely to be involved in providing intervention services for children. Such services are typically provided in the context of transdisciplinary teams but it is unreasonable to expect new professionals to be effective in these collaborations without explicit exposure to this method of providing intervention services.

Importantly, students also professed an increased interest in collaborating with professionals from other disciplines in the future. They indicated that participation in this project prepared them for future experiences once they left academia and began their professional careers and that this type of collaboration across disciplines allowed them to have a greater understanding of the role other professionals fulfilled within the realm of early childhood education. Students also felt that this project helped them to prepare for authentic real-world situations they might encounter when dealing with other professionals. Students overwhelmingly expressed the sentiment that engaging in service-learning provided them with opportunities to interact with children and families in an authentic way which they felt was far more valuable than content they would have received from a textbook in a more traditional learning approach.

On a broader level, these data support the effectiveness of collaborative learning as a high-impact practice (Kuh, 2008), a teaching strategy that has been demonstrated to positively impact student learning. Collaborative learning is a term for students working together to achieve learning outcomes (Bruffee, 1999). According to Kuh (2008), collaborative assignments/projects have two goals, 1) learning to work and problem-solve with others and 2) “sharpening one’s own understanding by listening seriously to the insights of others, especially those with different backgrounds and life experiences”. Collaborative learning is also considered to be one of the seven principles of good practice in liberal

arts education (Chickering & Gamson, 1987). A large body of literature provides evidence that cooperative learning is associated with higher levels of thought and longer retention of information (e.g., Johnson and Johnson, 1986). The shared learning gives students an opportunity to engage in discussion, take responsibility for their own learning, and thus become critical thinkers (Totten, Sills, Digby, & Russ, 1991).

Finally, although this experience is likely to have a direct and positive impact on students interested in careers that provide intervention services with children, this experience is also likely to have a positive impact for the students who may go on to careers that are not involved in providing intervention services for children. Teamwork or professional collaborations is consistently identified by employers as one of the top skills they find essential in new hires. In fact, teamwork/collaboration was rated as the second most essential career competency in the National Association of Colleges and Employers Job Outlook 2018 survey (NACE, 2018). Although 97.5% of employers rate this competency as essential, only 77% indicate that recent graduates are proficient in teamwork/collaboration. Thus, it is critical the instructors in higher education continue to provide opportunities for students to engage in collaborative experiences.

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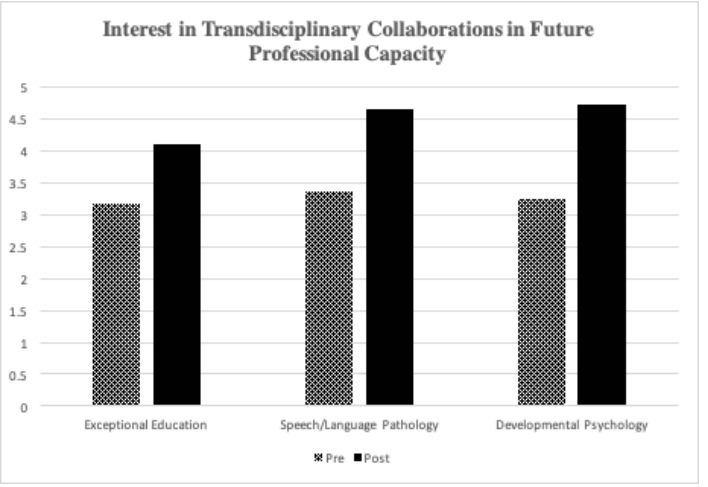
Table 1. Class ratings before and after the service-learning project

	Exceptional Education		**Speech-language Pathology**		**Development Psychology**		
	Pre Mean(SD)	Post Mean(SD)	Pre Mean (SD)	Post Mean (SD)	Pre Mean (SD)	Post Mean (SD)	F
Comfort with Young Children	4.1 (.30)	4.26 (.56)	3.98 (.42)	4.29 (.46)	3.61(.50)	4.17 (.63)	2.89+
Comfort with Developmental Assessment	3.69(.81)	4.67(1.21)	3.94(.98)	4.53(.80)	4.56(1.15)	4.71(1.26)	4.26*
Comfort working with Transdisciplinary Collaborations	3.21(.61)	4.09(.83)	3.28(1.13)	4.81(1.25)	3.37(1.06)	4.59(.94)	4.89*

Note: * p <.05, + p <.10.
5 point rating scale where 1=Strongly Disagree, 2=Disagree, 3=Neither Agree nor Disagree, 4= Agree, 5=Strongly Agree

Figure 1. Group by Time Differences for Interest in Transdisciplinary Collaborations in a Future Professional Capacity



Community Work-Study as a High Impact Practice: Designing a work-based, community-engaged experiential learning opportunity to increase access for under-resourced college students

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For many institutions of higher education, naming and elevating a set of "High Impact [Educational] Practices" (HIPs; Kuh, 2008) has become one of the key strategies to engage students in deeper disciplinary learning, personal growth, and success in college and beyond. We know from the literature on HIPs that these types of educational experiences take the form of experiential or applied learning opportunities such as service learning, internships, and study away, and, when done well, are transformative for students (Kuh, 2008). A key finding in Kuh's research is that these high-impact practices, while beneficial for everyone, are especially impactful among traditionally under-resourced student populations (especially first generation students and students of color) and that, demographically speaking, these students who stand to benefit the most are the ones engaging in them the least. One barrier to access we can note is that because HIPs take a significant investment of time and effort, often outside of the assigned class schedule, they are not always accessible to students who need to spend their time outside of class working in order to pay for school or support themselves and their families.

Higher education as a whole is a significant financial investment, and often financial barriers impact student success. Considering the demographics of today's college students, it is important to note that 47% are financially independent, which means they are not relying on another family member for financial support. Of that 47%, 42% of those financially independent college students are living in poverty (Lumina Foundation, 2018). 58% of today's college students are working while attending school full time and one third of today's students are low-income (Lumina Foundation, 2018). An increasing number of today's college students are first generation. Most first generation students "frequently need to be employed" to help pay for their education and the cost of living (Stebleton, 2013, p.8). Knowing that HIPs are especially beneficial to the growth and success of under-resourced students, we must turn our attention to breaking down the barriers to access and creating opportunities to make HIPs and HIP-like practices more accessible to them. Two recent MDRC studies indicated that a limited financial aid award ($1,000) for students struggling with economic challenges can make a difference in their college success, including higher term to term retention rates for those students (Lumina Foundation, 2018). Knowing the difference that financial aid can make, we have an opportunity to take an existing financial aid program and reframe it as a potential HIP—that of Community Work-Study.

This essay considers what might be involved in reframing Community Work-Study (CWS) as a potential HIP -- not only a form of financial aid or student employment but also an educational opportunity that can, if designed accordingly, advance civic and career development and the transformative learning of HIPs. A subset of Federal Work Study, CWS provides the opportunity for eligible students to work in meaningful jobs that not only give them applied learning experiences but also contribute to meeting community-identified goals. It is a bit of a hidden gem in the midst of other forms of community engagement (i.e., service learning, community service, days of service). College students are able to earn money to support their education while community organizations are able to hire student employees in a cost effective way; nonprofit and government organizations pay 25% of a student's wages, with the other 75% of the hourly rates being subsidized by the federal government. CWS can thus be described as a win-win opportunity to advance the goals of both higher education institutions and their community partners.

With this in mind, we have an opportunity to further develop our understanding and our practice of CWS as a HIP, specifically, a community-engaged HIP that is by definition particularly accessible to the population of students who often have the least access to but benefit the most from HIPs. After a brief background on federal and community work study, this essay examines four dimensions of learning, designing Community Work-Study as a form of community engagement and experiential learning, and implications for future practice and design. The underlying goal of this essay is to posit, explore, and call for further development of "Community Engaged Work Study": CWS designed as a HIP that incorporates the best practices of civic learning and experiential learning.

History and Practice of Federal Work-Study and Community Work-Study

The Federal Work-Study (FWS) program was established as part of the Economic Opportunity Act (EOA) of 1964, the goal of which was to combat poverty in the United States. The EOA states:

> The United States can achieve its full economic and social potential as a nation only if every individual has the opportunity to contribute to the full extent of his capabilities and to participate in the workings of our society. It is, therefore, the policy of the United States to eliminate the paradox of poverty in the midst of plenty in this Nation by opening to everyone the opportunity for education and training, the opportunity to work, and the opportunity to live in decency and dignity. ("A Brief History")

The FWS program, as part of this EOA, was established to "stimulate and promote the part-time employment of students in institutions of higher education who are from low-income families and are in need of the earnings from such employment to pursue courses of study at such institutions" ("A Brief History"). This evolved into the Higher Education Act of 1965, which was revised in 1972 to also include the Work Study for Community Service Learning Program (which is now more commonly known as Community Work-Study or CWS).

CWS was designed to allow students opportunities to work in local community-serving organizations (such as local nonprofit, government, and community-based organizations) doing work that is "designed to improve the quality of life for community residents, particularly

low-income individuals, or to solve particular problems related to their needs" ("A Brief History"). Community agencies who qualify, through a non-profit or government designation, are able to hire college students with FWS awards while only paying 25% of the student's wages, with the other 75% being matched by the federal government. Additionally, beginning with the President Clinton administration's 1997 "America Reads Challenge," a special stipulation allows for agencies employing reading and math tutors to hire students with 100% of the students' wages covered by the federal government.

At its heart and historical, legislative inception, FWS (and, more specifically, CWS) was designed to eliminate barriers to pursue higher education while also providing a mechanism for enacting the public purposes of higher education. As a need-based form of financial aid, FWS meets today's college students where they are, offering paid work opportunities to traditionally under-resourced students, students who do not typically have access to high impact or deeply engaged practices (Kuh, 2008). Designing paid work as a civically engaged high impact practice (via CWS) creates educationally meaningful work experiences that will allow students to deepen and connect their learning processes to processes of improving the quality of life in communities.

Community Work-Study as a High Impact Practice

As we consider the purposes of higher education, two main categories of thought tend to dominate the conversation: higher education as a space to prepare graduates as informed and active citizens and higher education as a space for career preparation and workforce development. These perceived "dual purposes" are often seen to be in tension with one another (Bringle, Edwards, Clayton, 2014, p.13). However, in "Connecting Workforce Development and Civic Engagement: Higher Education as Public Good and Private Gain," Battistoni and Longo (2006) explore prospects for moving beyond the perception of divergence between these two prevalent visions of higher education's role in society. "Put simply," they write, "workforce development and civic engagement can be complementary visions for the future of higher education" (p. 2). Similarly, according to the National Association of Colleges and Employers (NACE), employers are seeking graduates who are critical thinkers and problem solvers, work well in teams and collaborate across difference, demonstrate integrity and ethical behavior, and are globally and interculturally fluent ("Career Readiness Defined") -- characteristics that are clearly both civic-oriented as well as career-oriented.

Community Work-Study has the potential to integrate these two visions of civic and career development and be more than just a job for students with demonstrated financial need. When designed to explicitly engage in and with the broader community, it is an experience that can combine the principles of internships and service learning that make them HIPs. But it is more than an internship, and it is more than service learning. As a financial aid funding source for traditionally under-resourced students, CWS increases opportunities for more students, especially under-resourced students, to engage in high impact-type learning experiences. Additionally, students receive their FWS funding over the course of multiple semesters and academic years. This ongoing funding allows for students to continue in their community-based positions beyond the boundaries of the one semester or quarter or summer internship or service learning course. This continuation of the experience over time adds an opportunity for increased capacity building for the community organization (being able to rely and build upon the knowledge and experience of the same student over time rather than continuing to train new students) as well as increases opportunities for deeper student learning and development.

Two examples of institutions doing significant work in reframing student employment as a high impact learning practice are The University of Iowa and Indiana University-Purdue University Indianapolis (IUPUI). University of Iowa Vice President for Student Life Assessment and Strategic Initiatives, Sarah Hansen, found research documenting the learning benefits of Federal Work-Study and decided to capitalize on that by developing a structure to help supervisors have intentional conversations with their students and intentionally connect their academic learning with their work experience ("Connecting Work and Learning"). The initiative is called "Iowa GROW," which stands for Guided Reflection on Work. IUPUI has developed a similar program through their Hire Achievers program, a campus-wide career and professional readiness program led by Office of Student Employment director Janna McDonald, connecting students' work experience directly to the university's Profiles of Learning for Undergraduate Success. The Office of Student Employment selects departments to participate and designate a supervisor to maintain established contact with their students and engage in specifically designed interventions to help students develop in core areas of professional persona and professional competency ("Hire Achievers").

First, we must consider what it would take to design CWS as a HIP. The literature generally identifies four key characteristics of HIPs, which are easily linked to current CWS practice:

1. Demand students devote considerable time and effort: CWS generally involves 8-10 hours per week of work.
2. Demand substantive interaction with faculty and peers over periods of time: CWS allows for substantive interaction with community supervisors, and possibly with peers, over the course of an academic year and possibly multiple academic years.
3. Involve interaction across difference: CWS offers this by placing students in community settings that are both likely different from the campus community (and perhaps from their own home communities) and likely to expose them first-hand to a range of individuals from varied backgrounds.
4. Frequent feedback on performance: CWS sometimes offers this, depending on the relationship between students and their community supervisors.

Each of these four characteristics of HIPs suggests clear approaches to enhancing current CWS practice, which is already fairly well-aligned with these principles. The time and effort involved can be examined through the lens of what we know about applied and experiential learning. Substantive interaction with faculty can be specified and translated to potentially similar interactions with community supervisors serving as co-educators; and it is important to note that this is but one example of how the translation can work both ways, with the potential to enhance our understanding and practice of HIPs through examination of other high quality student experiences. The community-based positions can be marketed to students with at least a partial eye to similarities and differences between sites and the communities students are most familiar with. And supervisors' roles and responsibilities as well as the nature of their interactions with students can be designed to formalize regular feedback and critical reflection.

Second, we must consider what it would it mean for CWS to be enhanced further, explicitly incorporating best practices of both internships and service learning, the two HIPs it is arguably most closely related to. Kuh (2008) sees internships as HIPs in part because they "provide students with direct experience in a work setting – usu-

ally related to their career interests – and to give them the benefit of supervision and coaching from professionals in the field" (p. 21). He sees service learning as a HIP in part because it "give[s] students direct experience with issues they are studying in the curriculum and with ongoing efforts to analyze and solve problems in the community [as they] … both apply what they are learning in real-world settings and reflect … on their service experiences" (p. 11). CWS already accomplishes some of this, and, again, it is not difficult to see what would be involved in drawing on these two related practices to further enhance it: primarily, a bit of formalizing of the relationship between student and supervisor for more consistent and deeper coaching and making some space for intentional meaning making (i.e., critical reflection).

Third, we must consider what it would mean for CWS to be understood and designed explicitly as an experiential learning opportunity. Bringle and Plater (2017) suggest that "good experiential education" includes four components: content and learning objectives, activities, systematic reflection that connects the content with the activities so as to generate the desired learning, and assessment of that learning. While they limit their discussion of experiential learning to credit-based contexts (i.e., courses), it is not difficult to see what applying these characteristics to CWS would involve and how doing so would make it a much richer learning opportunity. To better understand the learning potential of CWS experiences, we can look to King and Sweitzer's (2014) "Towards a Pedagogy of Internships," which suggests organizing the learning developed via internships in the following four dimensions: Professional, Academic, Personal, and Civic. These four learning dimensions are consistent with the learning dimensions that have been articulated by Ash and Clayton (2009) and Felten and Clayton (2011) as defining of service learning: academic learning, personal growth, and civic learning. Here again, it is clear that CWS is already fairly well-aligned with these HIPs and can be enhanced without drastic rework.

The professional dimension

Students may seek CWS positions simply as a form of financial aid as a way to pay for school. Others may see it as an opportunity to explore a potential career interest. No matter the initial interest, CWS is employment and, for many students, may be their first experience within a traditional office environment. Much like internships, CWS positions have the potential to integrate and socialize students into the norms and

practices of particular professions and professional settings generally. Programs such as Iowa GROW and IUPUI Hire Achievers have created coaching models and prompts for helping students make these professional connections.

The academic dimension

Federal Work-Study (and subsequently Community Work-Study) by design is expected to connect students with jobs that are academically relevant. These jobs support students to continue their education while allowing students opportunities to integrate classroom knowledge in community-based experiences. Tools such as critical reflection can help supervisors intentionally support students in drawing upon their classroom learning as they examine it in action at their community organization (Ash and Clayton, 2009). Critical reflection can deepen the learning for the accounting student who is helping examine a nonprofit's fiscal sources, the video production student who uses video editing skills to create a memorable video to help a nonprofit better tell their impact story, or the teacher education student who watches how a significant scheduling change, informed by educational theory, at an after school site increases learners' homework completion rate.

The personal dimension

Higher education knows it has a crucial role in helping students develop "soft skills" as employers are increasingly expecting employees to have developed these skills prior to hiring (Battistoni & Longo, 2006). Working in a community-based position has the opportunity to help a student develop these types of skills while connecting a larger sense of purpose to the work they are doing. The CWS experience, much like other part-time work experiences including internships, is an opportunity for students to discover more about their strengths, clarify their personal values, better understand their ability to handle challenging situations, and to develop a sense of personal agency. These positions will also provide opportunities for working with diverse others, helping students learn how to navigate situations in which others think and apply knowledge differently than them.

The civic dimension

The "soft skills" discussed in workforce development literature and the "civic skills" discussed in the community engagement literature have considerable overlap (Battistoni & Longo, 2006). When working for an

organization dedicated to serving vulnerable populations or identified community needs, students from across disciplines are able to put their work and skills into a larger social context and see them in action. And this does not only apply to the nonprofit sphere, since every profession has a type of "implicit contract with society to fulfill certain moral and ethical obligations" (King & Sweitzer, 2014, p. 40). CWS experiences can give students a glimpse into what it takes to uphold that social contract, what happens when it fails, and what their role (and their organization's role) is in addressing complex social justice issues.

Community Work-Study as Community Engagement

It is similarly helpful to look at CWS through the lens of what we know about high quality community-engaged learning and community-campus engagement more generally. Three key principles -- co-creation and co-education, critical reflection to generate and deepen learning and work, and, here again, civic learning goals -- can help guide the refinement of current practice in the direction of "Community Engaged Work Study."

Co-creation and co-education

One of the principles of democratic community engagement is the idea that knowledge is generated across stakeholders; counter-normative to technocratic engagement, knowledge is co-developed, breaking down the norm of knowledge "producers" and knowledge "consumers" (Saltmarsh, Hartley, & Clayton, 2009, p. 10). Designated coaching conversations, like those in the Iowa GROW and IUPUI Hire Achievers programs, create space for employers to work with students to co-develop positions that meet the students' identified personal and professional goals. Also, because students typically qualify for Federal Work-Study for multiple semesters, many CWS sites are able to hire the same student over multiple semesters, not bound by a 16 week internship or service learning limitation. The on-going potential of CWS relationships allows agencies the time and opportunity to work with a student as she grows professionally to continue co-designing work that benefits and builds agency capacity while helping the student continue to grow and develop personally and professionally.

Critical Reflection

Critical reflection, when well designed, "promotes significant learning, including problem solving skills, higher order reasoning, integrative thinking, goal clarification, openness to new ideas, ability to adopt new perspectives, and systemic thinking" (Eyler & Giles, 1999; Conrad & Hedin, 1987, as summarized in Ash & Clayton, 2009, p. 27). It offers a way to deepen and document learning (Ash & Clayton, 2009). The civic, academic, and personal learning is drawn out through carefully designed and implemented critical reflection. As in the Iowa GROW and IUPUI Hire Achievers programs, critical reflection prompts used during regularly scheduled supervisory coaching sessions with students can help students make valuable connections between their work experiences, the classroom learning experiences, themselves, and society.

Civic Learning

Civic learning refers to the knowledge, skills, and values necessary to be an effective member of society (Saltmarsh, 2005). There is a clear opportunity for civic learning when students are working directly in and with community organizations. Engaging with organizations in the public sphere offers students the chance to learn more about social issues, the ways in which they are addressed in society, and how they themselves personally engage society and view their role in addressing complex social problems. There are also ways for employers to measure their students' civic learning. Two highly regarded tools for measuring civic learning were developed by the Association of American Colleges and Universities (AAC&U) and Indiana University-Purdue University Indianapolis (IUPUI). AAC&U developed the Civic Engagement VALUE Rubric (AAC&U, 2009) to help evaluate civic learning. The IUPUI Center for Service and Learning framed a definition for a Civic-Minded Graduate and a subsequent rubric to assess its particular domains (Steinberg, Hatcher, & Bringle, 2011)

Implications for Future Practice and Design

We can connect what we know from the High Impact Practice literature, specifically the practice of service learning, and design for Community Engaged Work Study (CEWS) that goes beyond work that just happens to take place in the community. Knowing the potential for CWS to be designed as an applied/experiential and engaged learning opportunity, to develop graduates prepared for the workforce and for contributions to civic life, we should consider designing CEWS with the following key principles:

1. *Develop supervisors as civic mentors and co-educators:* Design tools and provide training to support our CWS supervisors in coming alongside students in their learning and development. Help supervisors to understand themselves as more than just a supervisor; develop onboarding and on-going training modules to help supervisors understand their roles as co-educators and civic mentors (Norris, 2016).
2. *Integrate on-going critical reflection:* Using Iowa GROW or IUPUI Hire Achievers as a model, create civic (and other) learning prompts connected to student experience (i.e., How did this experience help you better understand your organization's mission/purpose or key social issues addressed by your organization? What role did working with others at this organization play in this experience?) to help students go beyond the academic and career connection and connect what they are learning to their role in civic life. Include training in critical reflection models in supervisor and student onboarding.
3. *Asset-based job development:* Coach employers on looking beyond CWS as a way to fill a job functioning gap and to see CESW as an opportunity to increase their capacity to continue engaging in their mission. Invite them to consider designing positions in which a student can grow over time and increase their impact at the agency.
4. *Intentional learning about the non-profit and public sector:* Work with CWS agencies to design learning modules, briefs, or other resources that help students understand the larger role and impact of non-profit and government agencies to address complex social issues. Understanding the role of the non-profit sector in society is "an important dimension in understanding public problem solving in civil society" (Hatcher & Studer, 2015, p. 13).

5. *Potential for taxonomy:* Following in the stead of the IUPUI HIP taxonomies, specifically the IUPUI taxonomy on service learning courses (Hahn, T., et. al, 2016), a review of the internships and service learning literature alongside our current learning about the potential to design CWS for deeper engagement, a taxonomy could be created to help create a baseline from which campuses can begin designing their CWS as Community Engaged Work-Study.

Institutions interested in moving forward with designing Community Work-Study as a high impact practice should first consider the offices and/or staff that currently play a role in both Federal Work-Study (and Community Work-Study if different) as well as designing and implementing high impact practices, especially that of experiential and/or service learning. At IUPUI, a triad office approach to implementing CWS has had success in running a strong program, with the Office of Student Financial Services (Financial Aid), the Office of Student Employment, and the Center for Service and Learning coming together to co-design policies and practices from the initial vetting and approving of community agencies to the financial awarding of students to the hiring and supporting of students as employees. A full review of the current implementation of CWS is warranted as each institution considers what elements of CEWS currently exist in their programming and which ones could be added and/or strengthened by what is being suggested in this essay. A working group could then look at each of the proposed key principles for design and consider what a year one, year two, year three (and so forth) implementation might look like.

When we can design CWS with each of these principles, we can move beyond a program that is community-based (work in communities) and toward a program that is community-engaged (work and learning in and with communities). In doing so, we create opportunities for students to gain access to meaningful community engagement experiences and invest in the development of future generations of civically-minded graduates who have the commitments and the capacities to nudge our world into a more equitable and just place for all.

Challenges and Questions for Further Inquiry

There remain challenges to be addressed and opportunities for further inquiry when designing for Community Engaged Work-Study (CEWS). As with any community-based opportunity, it is important to note that there is an inherent need for transportation to get to a community site. The additional cost of a car or public transportation may remain a barrier to students who qualify for Federal Work-Study. There may be opportunities to look at on-campus, community-facing types of Federal Work-Study jobs (e.g., campus food pantry, campus-based community garden) that do not require transportation off campus and yet still address and work with quality of life factors in the community. The term "community" can and should be explored more in depth to determine what can qualify for the purposes of Community Engaged Work-Study positions.

When designing for CEWS, it will be important to honor the principles of mutual benefit and co-creation with community partners from the start. If designed within and by the institution without intentional co-creation, the design will focus on the institutional desires for outcomes and can serve to alienate partners or create design elements counter to the missions of these organizations. It is important to ensure that all stakeholders (students included) have an opportunity to contribute to a shared understanding of the value of designing a more engaged CWS program.

Research is needed to establish evidence that CEWS is an engagement opportunity that increases access to High Impact Practices and prepares students for participation in civic life. Programs like the national Bonner Scholars program and America Reads and America Counts are potential places to start enacting some of the suggested design elements for CEWS to begin monitoring their outcomes and potential for impact.

Conclusion

A crucial design element to be considered with any learning opportunity is the consideration of who has access to that opportunity and who does not. By its own design Community Work-Study (CWS) is a funding mechanism that financially supports under-resourced college students and creates access to engaging with the community outside of some of the traditional forms of engagement that may otherwise be inaccessible to these students due to commitments of time and potentially other resources.

The deeply influential Association of American Colleges and Universities (AAC&U) report entitled *A Crucible Moment: College Learning and Democracy's Future* (National Task Force on Civic Learning and Democratic Engagement, 2012), names financial incentives and Federal Work-Study in particular as one place to increase access for students. In the report, there is a call for the creation of "financial incentives for students, including first-generation students and those studying in career and occupational fields, to facilitate their access to college while expanding their civic capacities as part of their education" (National Task Force on Civic Learning and Democratic Engagement, 2012, p. 37). Suggestions include "expan[ding] … beyond the current federal government requirement that at least 7 percent of Federal Work-Study monies fund student jobs in community-based placements" and leveraging such programs that direct funding toward access, "investigat[ing] how to profitably adapt them to foster expanded civic capacities and hands-on public problem solving" (p. 37). This call for access is still deeply relevant today. As we recognize the need for more integration of civic and career development, and as we work towards increasing access to high impact education practices such as experiential learning to do this, we need to just as equally be concerned with who has access to those practices.

As we consider how we continue to integrate civic learning and workforce development with the additional goal of "full participation" by all students (Sturm, Eatman, Saltmarsh, & Bush, 2011, p. 4), CWS has the potential to go beyond the transactional system of employment and actually be a transformational HIP experience for both students and communities. Designing with HIPs in mind, CWS becomes the engaged practice of CEWS in which students invest a significant amount of time and effort over an extended period of time, students engage with diverse people and places, co-educators as supervisors give frequent and timely feedback, and students engage in periodic, structured opportunities for critical reflection and learning (Kuh, O'Donnell, & Reed, 2013).

CEWS is just one opportunity for increasing access to HIPs. In considering the possibilities for its engaged design, CEWS has the potential to become a model for examining other HIPs (and especially community-engaged HIPs) from an equity-lens and applying elements that may increase their accessibility for full participation by all.

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Use of marketing and gamification to promote participation in extracurricular experiences focused on transferable skill development

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Abstract

The DegreePlus program at Western Carolina University is a newly developed initiative to help students develop transferable skills, including professionalism, cultural responsiveness, leadership and teamwork, by attendance at specific extracurricular events. The program was first implemented in the 2017-2018 academic year as a pilot with Honors College students, conditionally admitted students and students in specific living-learning communities. Participation by these student groups was encouraged through targeted marketing, transition courses, required attendance at DegreePlus events, and gamification. This research addresses how these methods impacted student participation. We concluded that requiring early participation influenced some students to continue their involvement in DegreePlus, and gamification helped students get interested in the program, but students also recognized the intrinsic value of the program and planned to continue their involvement. Targeted marketing helped to increase awareness and understanding of the program and how it works.

Introduction

Background and motivation

Western Carolina University (WCU) is a regional, comprehensive university located in rural western North Carolina. WCU is a member of the University of North Carolina system and is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC). Undergraduate student enrollment in fall 2018 was 10,027. As part of the recent SACSCOC reaffirmation of accreditation, WCU has created and implemented an institutional program to develop transferable skills in high achieving and at risk students. The program utilizes an applied learning approach to bridge classroom and extracurricular experiences and aims to provide students with the tools necessary to understand and articulate their learning in and out of the classroom. WCU named the new effort DegreePlus to emphasize that the program will augment students' academic experience with a meaningful extracurricular focus.

Rather than simply mandate student participation, DegreePlus provides a gamified mechanism for acquiring skills in the areas of professionalism, cultural responsiveness, leadership and teamwork. Students participate in extracurricular activities that emphasize learning outcomes associated with these skills and earn points and prizes as they progress through three levels of mastery: (1) experience and exposure, (2) reflection and articulation, and (3) integration and application. Preliminary impacts of the program on student development have recently been published (Huffman, Tallant, & Young, 2019).

One of the goals of DegreePlus is to increase participation in these types of activities or events on campus. Several strategies were used to promote participation, including the gamification of the program. Extensive research has shown that there is a connection between gamification and student motivation (Buckley & Doyle, 2016; Lister, 2015; Muntean, 2011). Another strength of the gamification of learning is a connected learning environment in which "a young person is able to pursue a personal interest or passion with the support of friends and caring adults, and is in turn able to link this learning and interest to academic achievement, career success or civic engagement" (Ito et al., 2013, p. 4).

Although some postsecondary institutions use gamification, such as digital badges, to help students gain skills that aren't self-evident on an academic transcript (Gibson, Ostashewski, Flintoff, Grant, & Knight, 2015; Fain, 2016; Casilli & Hickey, 2016), many implementations focus on social networking (de-Marcos, Domínguez, Saenz-de-Navarrete, & Pagés, 2014), e-learning (Osipov, Nikulchev, Volinsky, & Prasikova, 2015) or computer game (Hamari et al., 2016) contexts. A recent review by Dichev and Dicheva (2017) suggests that in higher education, many reports of gamification are tied to individual classroom activities or projects associated with a single course. The current study shares both qualitative and quantitative findings about student motivation as it relates to gamification of DegreePlus, an institutionalized, applied learning program that crosses disciplinary boundaries. Our study also examines gamification of extracurricular activities in higher education rather than more commonly studied curricular gamification.

In addition to gamification of DegreePlus, participation in the program was promoted using a marketing strategy that included presentation of the program at orientation sessions for students and parents, targeted marketing materials (brochures, ground stickers, signage, etc.) in specific locations, such as residence halls where participants live, emphasis of the program in university studies (USI) courses, and mandatory attendance of events. The goal of this study is to examine what (or if any) of these strategies, including gamification, may have successfully incentivized student participation in DegreePlus.

Gamification of DegreePlus

The DegreePlus program is a tiered program and, mimicking Bloom's taxonomy (Bloom, 1956), is designed to scaffold student learning from experience to reflection to application. In Level 1, students are required to attend extracurricular events or activities, designated as DegreePlus events, aimed at exposing students to a specific transferable skill. Students earn points for attending DegreePlus events. Students complete Level 1 once they have earned at least five points in a particular skill area.

Level 2 requires students to attend DegreePlus Day, a central event on campus designed for students to celebrate their progress through the program. Students attend a formal (free) dinner with a keynote speaker and receive rewards, prizes and giveaways. Most importantly they

reflect on the impact of their DegreePlus experiences. Trained faculty and staff mentors meet with students in small groups to lead them in a reflection session. After the session, students write a reflection that is evaluated by the mentor.

Finally, once a student has successfully completed a reflection, the student is promoted to Level 3. In Level 3, students submit a proposal for a capstone experience in which the skill is implemented. This experience can be curricular or extracurricular and must show integration and application of the skill or skills they are demonstrating. Examples include a capstone in their academic discipline, an internship, a service-learning project, a study abroad experience, or other significant experience selected by the student as evidence of skill application. The student is invited back to DegreePlus Day the following year to share the capstone with students at Level 2. Level 3 presentations are evaluated by mentors. Both Level 2 and Level 3 artifacts (reflection and presentation) are assessed using a rubric that aligns with the student learning outcomes for each skill.

In many gamification models, the students' ability to track their progress is a central component (Dickey, 2005; Glover, 2013). Unfortunately, due to technical limitations, students were unable to independently monitor their progress during the pilot year. In most cases, students were periodically updated by email of their points/level status by DegreePlus administrators.

Pilot

To test DegreePlus in its initial year (2017-2018) on a small scale, the program was piloted with a small population including (1) first time, first year undergraduates and transfer students in the Honors College, (2) first time, first year undergraduates in the Academic Success Program (ASP), which is a conditional admission program offered to students whose grades or standardized test scores indicate the potential for academic success but who can benefit from a structured college access program, and (3) first time, first year students enrolled in leadership-related living-learning communities (LEAD). The leadership team for each of the three pilot groups selected different approaches to the implementation of the DegreePlus, which included few, some or all of the promotional strategies identified above, with the exception of gamification, which was built into the program for all students. In ad-

dition to those strategies, two pilot groups required a minimum amount of attendance at DegreePlus events. The Honors College required attendance at a DegreePlus event and consistently marketed the program to new students during orientation sessions and throughout the fall semester, particularly in their university transition (USI) courses. ASP embedded DegreePlus as a requirement during their five-week pre-matriculation summer experience and, like the Honors College, required attendance at a selected fall event, requiring participation at a total of two events. Students in the fall leadership living-learning communities were encouraged through their USI courses to attend DegreePlus events, but were not required to participate.

DegreePlus leadership opted to pilot with the professionalism skill in the fall and, in the spring, cultural responsiveness activities were added. All events were open to the entire student population, so students outside the pilot group also attended DegreePlus events. As part of this study, these students were designated "non-pilot" students.

Methods

Research suggests that focus groups are an effective way for developing programs to reach student participants (Morgan, 1996). This approach was used mid-way through the pilot year (Jan/Feb 2018) to gain an initial understanding of what motivated student participation in DegreePlus. In addition, a survey of participants toward the end of the academic year (April 2018) was used to more quantitatively assess students' reasons for participating. This research was exempt by WCU's institutional review board. All focus group participants and survey respondents were WCU students age 18 or older who volunteered to participate and gave consent to use their responses for research by either signing a consent form or giving permission via a survey question. Event participation data was provided by DegreePlus administrators as de-identified data. No demographic information about the participants was included except for whether they were part of one of the pilot groups or not.

Measurement of participation

Attendance of all participants was tracked via student ID card swipe or student sign-in. Data was collected at each DegreePlus tagged event by DegreePlus administrators or program hosts. Attendance records for each DegreePlus tagged event were organized in Microsoft Excel for Mac (version 16.16.3) using a pivot table to determine the number of events each student attended in the fall semester, the spring semester, and throughout the pilot program. The participation data contained event attendance records for 354 students in the Honors College, 133 students in LEAD, and 179 students in ASP (a total of 666 pilot participants), and 2,170 students who were not in any of the three pilot groups (non-pilot). Using IBM SPSS (version 25), the count data was fit using the Generalized Estimating Equations with a Poisson log link (Proudfoot, Lin, Wang, & Tu, 2018) to examine the differences between participation in fall 2017 and spring 2018 and between the pilot groups and the non-pilot students.

Focus group

The Associate Director of DegreePlus provided contact information for a subset of participants who had previously given consent to share their participation data. These students were classified into two separate groups: a low participation group, which included students who attended less than three DegreePlus events, and a high participation group, which included students who attended three or more DegreePlus events. These students were separately invited to participate in the focus group study so that each focus group would be aligned according to students' level of participation in the DegreePlus program. Five students participated in the low participation focus group and three participated in the high participation focus group.

Researchers developed eleven open-ended questions designed to lead a discussion about students' DegreePlus experiences. Seven questions were linked to how students learned about DegreePlus and what drove them to (or not to) participate:

- How did you first learn about DegreePlus?
- What do you know about DegreePlus?
- To what extent have you participated in DegreePlus?

- How was your involvement in DegreePlus encouraged? (What motivated/caused you to participate?)
- What prevented you from participating in DegreePlus?
- What might have encouraged you to participate in more DegreePlus activities?
- Would you have participated in DegreePlus without encouragement (points)?

Five focus group sessions were conducted during January and February 2018, each lasting 30-45 minutes. All but one session were audio recorded. On two occasions, only one student was present, but the same questions were used for one-on-one conversations as for group sessions. Sessions were moderated by 1-3 members of the research team, each taking notes. One researcher recorded verbatim and two recorded summarized notes. One researcher compiled all notes. All three researchers met and reviewed compiled notes and identified themes from responses.

Survey

A list of all students who attended at least one DegreePlus event and any other students that were designated as pilot participants but did not attend any events was compiled by the Associate Director of DegreePlus. These students were invited by the research team via email to complete an electronic survey about their DegreePlus experience. There were 86 responses to the survey. One response was omitted because the respondent was under 18 years old, and 43 responses were omitted from the study because the student did not identify him/herself, so participation in the program could not be verified. Two additional responses were eliminated because a student completed the survey twice with conflicting responses. Of the remaining respondents, seven had not participated in the program, and only one student from each of the ASP and LEAD groups responded, so these responses were not included in the analysis of the program participation factors. Since the research aims to distinguish effective motivational practices, two respondents who were enrolled in both the Honors College and LEAD, and therefore likely received mixed marketing strategies, were discounted as well. A total of 29 responses were analyzed, 12 from non-pilot students and 17 from Honors College students. In comparisons of

pilot and non-pilot participation, the survey results rely only on Honors College students as the pilot group. We recognize that it would have been preferable to compare the responses of all of the pilot populations with the non-pilot group, as the Honors College population is not a representative sample of students. Such students are a highly motivated and curious population with a passion for learning (Achterberg, 2015). One would expect these students to recognize the value of a program like DegreePlus. This bias in the data, as well as the small sample size, limited our ability to draw generalizable conclusions.

The survey was comprised of eleven questions in both single and multiple answer multiple-choice format and Likert scale format. Survey questions that related to how students learned about the program and factors that influenced participation are presented in the results and discussion.

Results and discussion

Trends in participation

Participation in DegreePlus events by the Honors College students and the ASP students was the highest, which was expected given that these groups received focused marketing and were required to attend events. As shown in Figure 1, we observe that 82% of the Honors College students attended at least one event, and 83% of the ASP students attended at least two events, fulfilling the requirements of their respective programs. Almost half of the students in the LEAD program attended at least one event, which is remarkable considering the minimal direct marketing this group received. However most of the attendance occurred in the spring, which will be discussed later. Although attendance at more than the required events tapers for both Honors College students and ASP students, 27% of ASP students still attended at least three events and 42% of Honors College students attended at least two. This persistence suggests that a substantial number of students valued the program and continued to participate beyond the requirements of their respective programs.

Table 1 lists the average and median number of events attended for each pilot group and the non-pilot participants for fall 2017 and spring 2018. Likewise, Figure 2 shows the distribution of number of events attended by these groups. Overall, total pilot group participation drops

off in the spring relative to the fall semester. (See Figure 2.) This is consistent with a decrease in the average number of events attended for Honors and ASP students from fall to spring. In spring 2018, without the mandatory event participation, the average attendance of the Honors College students and ASP students dropped significantly from 1.01 (fall) to 0.66 (spring) and from 1.99 (fall) to 0.21 (spring), respectively. Both decreases are statistically significant ($p < .001$). The higher fall attendance is most likely attributed to the mandatory event participation for Honors College and ASP students in that term. In contrast, the majority of LEAD and non-pilot students did not attend any DegreePlus events in the fall. (The average number of events was 0.08 and 0.26, respectively). This is likely because non-pilot students were not overly aware of the program and LEAD students were only encouraged, not required, to attend.

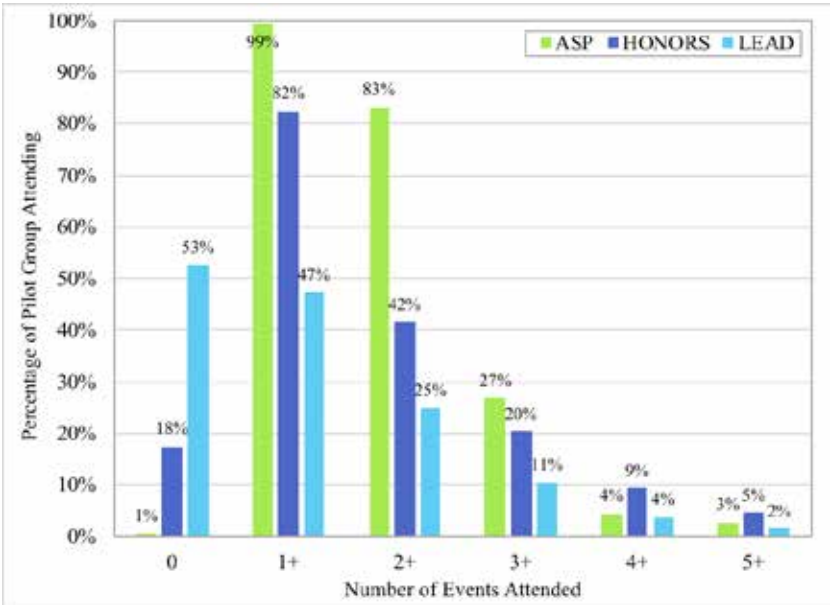

Figure 1 Percentage of students in each pilot group attending a certain number of events (+ is "or more") throughout the pilot year (2017-2018). For ASP, Honors and LEAD, N = 179, 354, and 133, respectively.

Table 1 Average and median number of events attended by pilot and non-pilot groups for fall and spring. Statistical values are based on a Poisson regression model.

		Fall 2017			Spring 2018		
	N	Mean	Median	SD	Mean	Median	SD
ASP	179	1.99	2	0.793	0.21	0	0.516
Honors College	354	1.01	1	0.926	0.66	0	1.101
LEAD	133	0.08	0	0.303	0.80	0	1.138
Non-pilot	2,170	0.26	0	0.498	1.26	1	1.001

Although the combined pilot group attendance decreased from fall to spring, the average number of attended events increased for the LEAD pilot group from 0.08 to 0.8 while event attendance of the non-pilot students increased to more than one event at 1.26, a statistically significant increase in both cases ($p < .001$). Despite the lack of mandatory attendance for Honors College and ASP students in spring, the average number of events attended for the total population (regardless of group, including non-pilot students) significantly ($p = .002$) increased from fall (0.45) to spring (0.61). The increase in participation may be due to an increased number of events being offered in the spring (76 in the spring vs. 19 in the fall). In addition, events related to cultural responsiveness were added for spring. According to DegreePlus administrators, these events tended to have greater appeal to students than the events related to professionalism. One can speculate that the types of programs and events related to cultural responsiveness are seen as more immediately relevant and interesting to students than events related to professionalism.

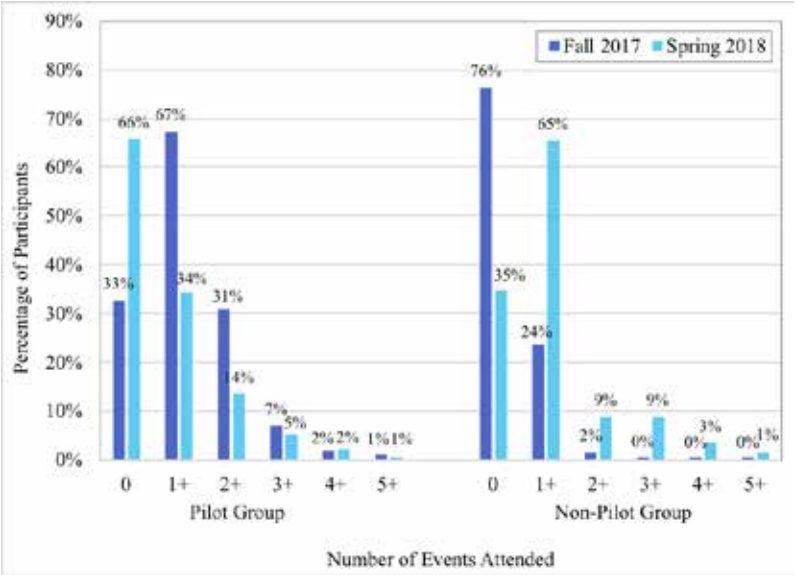

Figure 2 Percentage of pilot (N = 666) and non-pilot (N = 2,170) groups attending a certain number of events (+ is "or more") during fall and spring.

To investigate the effects of the various marketing strategies, we compared the relative attendance of individual pilot groups to the non-pilot group. In the fall, Honors College students were almost four times more likely to attend a DegreePlus event than the non-pilot group and ASP students were close to eight times more likely than those not in the pilot groups to attend an event ($p < .001$). This was expected since Honors College and ASP students had required attendance. However, LEAD students had a less than one-third chance to attend an event compared to the non-pilot students ($p < .001$), which was surprising since LEAD students were encouraged to participate, but the non-pilot students were not. In the spring, the non-pilot students were 1.9, 1.6, and 6.1 times more likely to attend an event than the Honors College, the LEAD, and the ASP groups, respectively ($p < .001$). This suggests that external driving forces prompted attendance for non-pilot students, such as the increased number of events as a whole as well as the types of events.

Effectiveness of marketing strategies

Our survey addressed how students learned about DegreePlus. Results for the non-pilot and Honors College pilot respondents are shown in Figure 3. For the non-pilot group, responses are fairly evenly distributed across the different methods, suggesting there was not a clear message sent through a single outlet. However, Honors College students, who received directed marketing, identified USI classes, email correspondence, orientation, and signage around campus as mechanisms that played a large role in informing them about the program. Since these were the primary modes of advertising for the pilot group, we were pleased to see that DegreePlus marketing was effective.

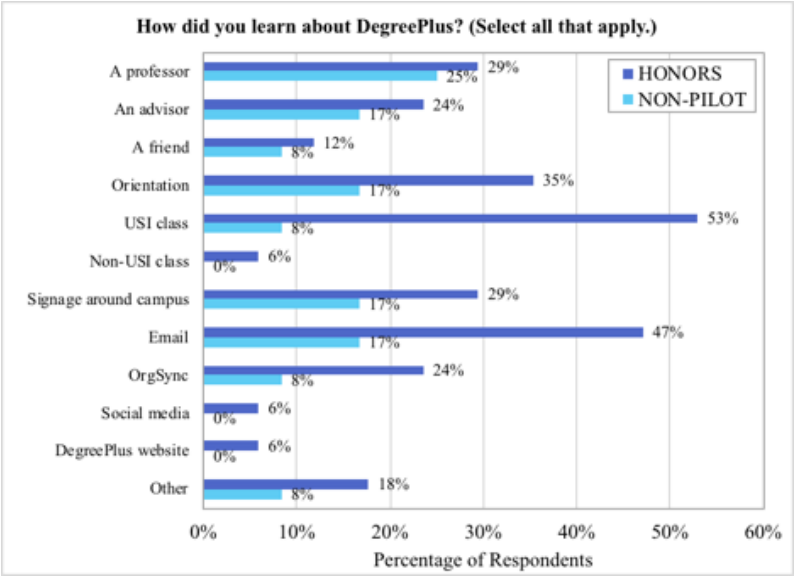

Figure 3 Non-pilot (N = 12) and Honors College pilot (N = 17) perceptions of how they learned about the DegreePlus program.

Conversations with the focus groups indicated that flyers, posters, and sidewalk stickers created awareness for the program, but students who did not receive direct marketing found this method of marketing ineffective at conveying an understanding of the program. Students who had participated and received direct marketing seemed to have a better understanding of how the program worked, but only a few students

could describe the program clearly and accurately. As the program continues to develop, more consistent messaging and language will convey a clearer picture of DegreePlus and how it works.

Motivation for participation

The survey directly asked what drove students to participate in DegreePlus. Two questions, with results shown in Figures 4 and 5, examined motivation to participate and a third question probed the role of gamification in encouraging participation. Interestingly, for both non-pilot and Honors College pilot students, motivations are similar. As shown in Figure 4, participants like to try new things; they recognize the value of DegreePlus for their career goals and learning transferable skills; and they rely on recommendations from faculty.

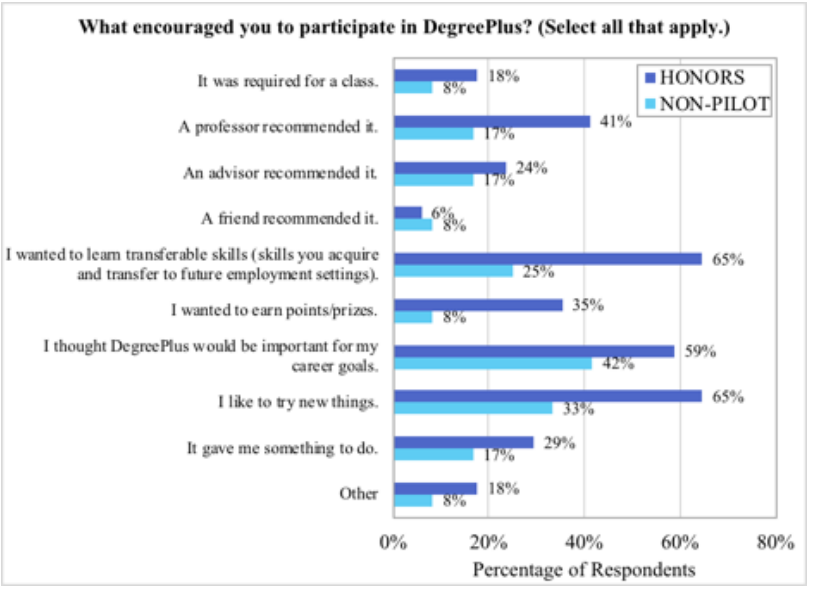

Figure 4 Non-pilot (N = 12) and Honors College pilot (N = 17) perceptions of what encouraged their participation in the DegreePlus program.

In the focus group sessions, we learned that gamification was a driving force for students with high participation rates. It was less of a driving force for the low participation students, but this may be because they

didn't really understand how the program worked. A similar result from the survey is shown in Figure 4. Gamification ("I wanted to earn points/prizes") was a much bigger driving force for the pilot group (35% of respondents) than for the non-pilot group (8% of respondents). The non-pilot group and some of the low participating focus group members may not have received marketing that explained the gamification aspects of DegreePlus. This may account for the response to a survey question that asked, "Would you have participated in DegreePlus without incentives like points or prizes?" Fifty percent of the non-pilot population responded that they did not know that points or prizes could be earned by participating. Oddly, 29% of Honors College pilot participants were also unaware of the gamification aspect. Nonetheless, 41% of Honors College pilot students and 42% of non-pilot students responded that they would probably or definitely participate even without the gamification aspect. This suggests that the gamification may be an initial draw to participate, but as students come to understand the value of the program, they may participate for its intrinsic value.

Figure 5 shows how important certain aspects are for students deciding whether or not to attend an event. Responses are broken out by Honors College pilot participants and non-pilot participants as well as the percentage of respondents in each group that selected "not at all important," "slightly or moderately important," or "very or extremely important." We used multiple pairwise tests on this single data set to interpret whether certain aspects of an event were more important than another. As such, we used the Bonferroni adjustment to determine p-values to avoid Type I errors (Dunnett, 1955). Regardless of whether students were in the pilot group or not, how fun an event is perceived to be was a statistically more important factor in deciding to attend than whether a friend is attending ($p = .008$) or recommendations from faculty ($p = .001$), advisors ($p = .019$) or staff ($p < .001$). This resonates with what was learned in the focus groups. Students specifically indicated that they would participate more if events were interactive or hands-on. Another important consideration for students is whether or not the event is related to their major. This aspect was significantly more important than whether a friend is attending ($p = .003$) or recommendations from university personnel ($0 < p < .009$). DegreePlus is specifically designed to be non-disciplinary since the intended transferable skills are considered appropriate for all students, regardless of their major. However, students may be more inclined to participate if they

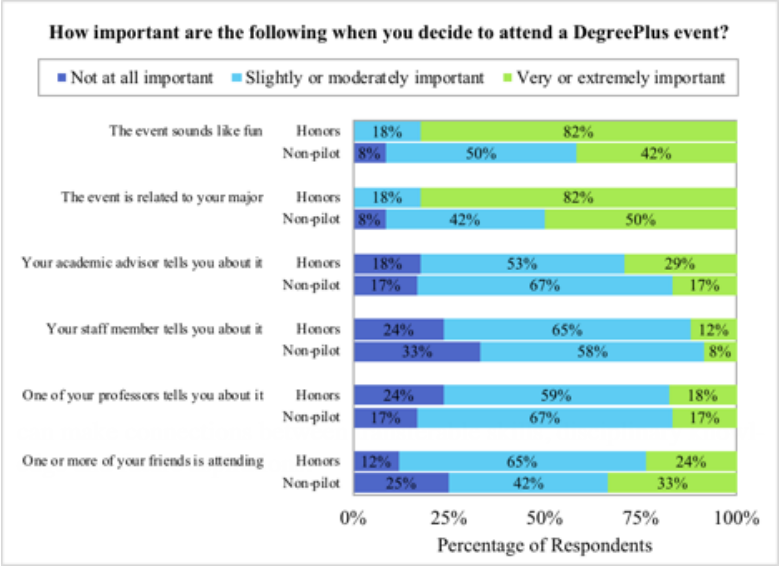

Figure 5 Non-pilot (N = 12) and Honors College pilot (N = 17) perceptions of what impacts their decision to participate in the DegreePlus program. In this stacked bar chart, a larger colored segment indicates a greater percentage of responses in a particular importance category and vice versa.

Finally, participants were asked about how they envision their participation in the upcoming year. The vast majority of participants claimed their participation would be the same or higher. Fifty-nine percent of Honors College pilot respondents claimed their participation would remain the same, probably because their participation was already high compared to the non-pilot group. In contrast, 75% of the non-pilot group respondents claimed they would increase their participation, likely because their participation was initially low and the program was new to them.

Conclusions and future directions

DegreePlus was piloted with three distinct academic groups. Each group received different modes of marketing, but all were allowed to experience the gamification of the program. Their participation and motivation for being involved was examined and compared to a non-pilot group that received no direct marketing. We found that pilot

groups that were required to participate had high attendance rates, but that their attendance dropped after the requirement was filled. Students not required to participate had an increase in attendance, likely due to the addition of more DegreePlus events in the spring in a subject students found interesting, cultural responsiveness. Students in the pilot group picked up on the directed marketing strategies, and both pilot and non-pilot participants seem to attend for some of the same reasons: they like to try new things; they value the program's ability to teach transferable skills and help them meet their career goals; and because faculty promoted the program. Students are more likely to participate if the event sounds fun or it's related to their major. Lastly, students who understood the gamification aspects of the program were interested in earning points or prizes, but this was less important to students who did not comprehend how the program worked. Many participants, even in the pilot group, did not know that points or prizes could be earned. An identified challenge for gamification of institutionalized, extracurricular programs is how to convey the complexities of the "game" (points/levels/prizes) when the audience is not captive in a classroom.

These conclusions should be taken in light of limitations. Our study uses pilot data from a small sample, collected from a single institution. The small sample size made it difficult to identify any demographic differences in a largely homogenous sample. Therefore, we were unable to draw any conclusions about how demographics may influence students' participation. Additionally, many of the survey responses were from Honors College students, which may impose a bias when comparing results to responses of the non-pilot group. It will be important to explore the expectations and experience of ASP and LEAD students in future studies. Despite these limitations, our research contributes to the literature about motivation and gamification in higher education in both institution-wide and extracurricular contexts.

Future research should employ more rigorous research designs that examine the nuances of motivation to participate in extracurricular activities among various groups of students. For example, determining gender differences in motivation may be useful to design targeted marketing to specific groups. Also, other student populations, such as transfer students, underrepresented students, commuters and those with undeclared versus declared majors may require different, targeted marketing tactics. Future research should also examine the motivation

of faculty and staff to support DegreePlus. For the long-term sustainability of the program, motivation of faculty and staff to offer and align their applied learning experiences with DegreePlus learning outcomes is vital.

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Supporting Persistence and Identity Development during Applied Learning Experiences

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Abstract

Supportive programming is frequently designed to increase reflection and amplify the effects of applied learning experiences. We have developed a supportive curriculum that integrates ePortfolio practice, brief psychological interventions, advising, mentoring, family engagement, and professional development into a highly successful summer research experience for undergraduates. We describe our program and discuss evidence-based methods of supporting the development of a growth mindset, academic identity, scholarly community, and future planning as a means of increasing academic self-efficacy and persistence in students. Throughout this discussion we report on early indications that the modifications have met our goals. We conclude by considering principles that might guide design of supportive programming for other applied learning experiences.

Supporting Persistence and Identity Development during Applied Learning Experiences

Undergraduate research opportunities can increase confidence and interest in STEM careers (Russell, Hancock & McCullough, 2007). Many underrepresented ethnic minority (URM) students enter college

unaware of research-related careers (Ovink & Veazey, 2011). For these students, research experience can broaden their thinking about possible careers and help them learn norms of professional laboratory behavior. Since 2000, Purchase College, State University of New York has hosted the Bridges to the Baccalaureate (*Bridges*) six-week residential summer research program for community college students who are from an underrepresented ethnic minority (URM) group, have demonstrated financial need, or have parents who did not graduate from college. The *Bridges* program has served over 500 students, 77% of whom have transferred to four-year institutions. Program alumni include medical doctors, Ph.D. students, and scientists. In recognition of the program's success, Purchase College received the Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring. In this paper we describe the supportive curriculum which we believe to be central to the success of the program.

The *Bridges* program is an intensive applied learning experience and a high impact practice (HIP). Students work in small groups conducting original research under the supervision of a faculty member. Students present research talks as part of a team and a poster individually. These intensive educational experiences are the first opportunity many students have to immerse themselves in a scholarly pursuit. The research experience is, and will always be, at the heart of the *Bridges* program. Although *Bridges* has had a high level of success, we sought to amplify the effects of students' intensive research experiences by creating supporting activities that would encourage students to reflect on their experiences and create comprehensive academic and career plans. Our research on early program outcomes revealed that *Bridges* students were more likely than matched peers to retake required courses until they received passing grades and to graduate in STEM majors. However, *Bridges* students did not receive better grades than matched peers. These findings led us to hypothesize that a key outcome of program participation may be a stronger commitment to the pursuit of a STEM degree. An examination of students' descriptions of themselves at the beginning and end of the program revealed that students showed increased academic identity, future orientation, and sense of scholarly community at the end of the program (Singer-Freeman, Bastone & Skrivanek, 2014). We hypothesized that the development of academic identity, future orientation, and a scholarly community helps students persist despite challenges.

Having identified elements of cognitive and social-emotional development that supported persistence, we created programming to target these areas. We also expanded our original set of academic learning outcomes that emphasized students' understanding of and ability to conduct scientific research. We added outcomes reflecting knowledge about academic success including: 1) steps needed to complete bachelor's and advanced degrees and 2) careers that can be pursued with different degrees. We also added identity outcomes including the development of: 1) academic identity; 2) a sense of belonging to a community of scholars; 3) a growth mindset; and 4) grit. Each modification to the program was informed by evidence-based practices. Below we describe research that informed program modifications, our implementation of these modifications, and evidence of efficacy.

Using a Systems Approach to Guide Program Development

Over the span of several years we assessed student needs and used our findings to inform program development. We adopted a systems approach to guide development, evaluation, and tuning of program elements (Cabrera, Colosi, & Lobdell, 2008). For each element, we considered the features that made it distinctive from other elements. We also considered the relationship between each pair of distinctive elements, the ways each element functioned from the perspective of other elements, and the ways each element related to the program as a whole. This approach has been useful both as a means of understanding the contributions of each element to the program and as a means of identifying gaps or redundancies in our curriculum. We summarize the unique program elements and the major learning outcomes addressed by each in Figure 1. Although nearly every element relates to other elements to some extent, overlapping circles indicate elements that involve substantial reciprocity. As can be seen in Figure 1, this analysis revealed that ePortfolio practice and laboratory research are central organizing elements.

ePortfolio Practice

We believe ePortfolios are uniquely situated to magnify the effects of applied learning experiences because ePortfolio practice provides students with a shared platform in which they can establish new versions of identity (Singer-Freeman & Bastone, 2018). ePortfolios help students document growth and reflect on academic achievements

(Buzzetto-More, 2010; Singer-Freeman, Bastone, & Skrivanek, 2016). The permanent nature of the ePortfolio serves as a lasting declaration of experiences. When experiences are transformative, this lasting record has the potential to strengthen and lengthen the transformative effects. When students share ePortfolios with friends and family, they evoke what Bass (2017) calls social pedagogy by engaging students in a communication-intensive task in which an authentic audience is central to the construction of knowledge. Social pedagogy encourages integrated reflection and can support considerations of personal change. In Bass's words, the ePortfolio can become a platform for "sense-making" and "learning to be." Collective reflection that takes place within a community can also provide validation of an individual's experience and support perspective taking (Rodgers, 2002). Collective reflection can provide individuals with the sense of safety needed to try out alternate ways of knowing or being. Accordingly, it is not surprising that ePortfolio practice correlates positively with student success indicators (Eynon, Gambino, & Török, 2014; Eynon & Gambino, 2018) and was recently added to the Association of American Colleges and University's list of HIPs (Watson, Kuh, Rhodes, Penny Light, & Chen, 2016).

We initially implemented ePortfolio practice to assess and document applied and collaborative learning (Singer-Freeman, et al., 2016). However, we quickly saw the power of ePortfolio practice as a means of increasing students' reflection on their past, present, and future. Our overarching goal became for ePortfolio practice to serve as a meta HIP, amplifying the positive impact of participation in research and professional development activities. Students are introduced to the curriculum by being told that ePortfolios are a type of social media in which they will establish a professional presence that will be useful to them in a number of ways: 1) They can be shown to potential employers or research sponsors because they will document the student's research skills; 2) They can be shared with family and friends because they will document the student's summer experiences and plans; and 3) They can be revisited in the future because they will provide a rich representation of who the student was during the program. Each week students contribute a journal entry, an image that documents learning, and a section of a research poster they will present during the final week of the program. Additionally, students upload a resume and respond to weekly writing prompts (see Table 2) designed to encourage the development of academic identity, future orientation, belonging to a community of

scholars, a growth mindset, and grit. Weekly ePortfolio workshops provide an opportunity to deliver intensive social pedagogy. Visual images are central to students' ePortfolios and enhance social pedagogy by creating pages that appear like social media pages (See Figure 2). To encourage integration between images and written content, students provide titles that explain how images document learning and reorganize content to curate an integrated story of their experience. We create a community of shared ePortfolios and encourage community members to provide comments, further enhancing social pedagogy.

ePortfolio practice is a distinctive element of our program because it is the only activity in which students actively reflect on and document their learning, plans, and progress. However, it is a central and overlapping element because family members, faculty, staff, and peers are an authentic audience and the ePortfolio documents and allows for reflection on the research activities, emerging community of scholars, brief psychological interventions, professional development workshops, advising, and mentoring. The ePortfolio must be valued by other program elements in order to be successful. To do ePortfolio practice well students must make a significant investment of time and effort over an extended period. From the student perspective, the ePortfolio requires substantial effort at the end of a full day of work. A key element for engaging students is moving quickly to establish social pedagogy. We address this in an initial workshop in which students see examples of pages from past summers, learn to use the platform, create an attractive page with identity-relevant information and images, and share their page with the group. It is also essential that students receive meaningful feedback in a timely fashion. Once students become interested in ePortfolio practice, engagement opportunities are maximized because the residential nature of the program supports social pedagogy. Research faculty can view the ePortfolio as a distraction from research activities. To minimize disruption to the research day, weekly workshops take place at night and are implemented by non-research faculty. Still, to fully engage faculty and students, the value of ePortfolios must be made clear. A turning point in the establishment of faculty engagement was the introduction of research posters. The inclusion of a formal summary of the research project increased student and faculty interest and provided them with an opportunity to discuss substantive parts of the ePortfolio.

We found that ePortfolios have helped students develop academic identity, future orientation and a sense of belonging to a community of scholars (Singer-Freeman, et al., 2014). In response to an anonymous exit survey, 90% of students indicated that ePortfolio practice was somewhat or very valuable, 94% reported they were somewhat or very likely to continue to contribute to their ePortfolio, and 90% reported they were somewhat or very likely to share their ePortfolio. Students also found the ePortfolio practice to be enjoyable, with 88% reporting medium or high enjoyment levels. To investigate the effects of different aspects of the ePortfolio curriculum, we examined students' identity-related descriptions in weekly journal entries and prompted writing (Singer-Freeman & Bastone, 2018). We found that in journal entries students described themselves in academic terms but descriptions of future goals and a scholarly community were rare. Many prompts instruct students to relate material to experiences that took place at other times or places or encourage them to place themselves within a knowledge community. In this way, the prompts encouraged students to bridge formal learning with informal experience and evoked references to academic identity, future planning and scholarly community. As can be seen in Table 2, responses to prompts evoked high levels of analysis and frequently involved students' experimentation with different ways of knowing or being. A review of ePortfolios from 2018 revealed that 100% of students included references to academic identity, future plans, and membership in a scholarly community. Accordingly, we believe the inclusion of carefully constructed prompts is an essential element of ePortfolio curricula that are used to support applied learning experiences.

Brief Psychological Interventions

Brief psychological interventions can improve individuals' lives long after the intervention is over by changing the way they think and feel about the world. Brief psychological interventions have been shown to improve students' grades, persistence, and well-being (Walton, 2014). Some schools incorporate brief psychological interventions as part of student orientation. Applied learning experiences are another environment in which interventions can be introduced (Boaler, 2013). We describe two brief psychological interventions and discuss their use as part of our supportive curriculum.

Values affirmation. Reflecting on core values can promote students' feelings of efficacy in the face of academic challenges. Low-achieving African American students who affirmed core values early in middle school improved academic performance and retained equivalent levels of self-efficacy throughout middle school (Cohen, Garcia, Purdie-Vaughns, Apfel, & Brzustoski, 2009). This contrasted with the experience of non-affirmed low-achieving African American students who showed a declining level of self-efficacy. The transition from a community college to an intensive research experience at a four-year institution is also a moment when students face increased academic demands and may experience impaired academic self-efficacy. This risk is especially strong for students from groups underrepresented in higher education and in STEM. An affirmation intervention has the potential to have a similar buffering effect for these students. In addition to supporting self-efficacy, we believe that the inclusion of this intervention helps students form linkages between the values of their family of origin and the values of the scholarly community they are forming during the program. We provided students in Bridges with a modified version of the affirmation intervention as part of our ePortfolio curriculum. After completing a Scientific Thinking and Integrative Reasoning Skills (STIRS) case study about scientific ethics (Singer-Freeman, 2015), students reflected on their core values and how these values aligned with scientific values (See Table 2).

Growth mindset and grit. Many students enter college believing that intelligence is genetically determined and unchangeable. Dweck (2006) refers to this as a fixed mindset and pioneered work in which brief lessons on brain plasticity led to shifts in students' views of intelligence. When students shift to a growth view of intelligence, they become more interested in attempting difficult tasks and more likely to persist after initial failures. The determination to achieve long-term goals and willingness to persevere in the face of obstacles has been termed grit (Duckworth & Gross, 2014). Many interventions seek to develop both grit and a growth mindset (Snipes, Fancsali, & Stoker, 2012). The positive effects of a growth mindset on grit have been replicated in many domains of learning and across many groups (Boaler, 2013). The mindset intervention we implemented is a modified version of existing interventions (See Table 2). Students watch a TEDx (2012) talk by Eduardo Briceno that describes mindsets and respond to a writing prompt. Two weeks later they watch a TED (2013) talk by Angela Duckworth

that describes grit and respond to another writing prompt. Both prompts encourage future planning by asking students to consider ways to shift their mindset and having them write a letter to their future self.

Program participants view the brief psychological interventions as part of the ePortfolio program. The interventions contribute to students' positive feelings about the ePortfolios and support the acquisition of academic identity and future orientation. Their purpose is overlapping with other planning activities that take place in professional development workshops because students share a long-term academic goal and articulate their identification with the community of scientists through shared values. However, they are distinct from these activities because they require student-generated reflections on the self. Responses to the interventions are positive. When asked to describe the most important things they learned during the summer program, over 20% of students refer to learning about mindsets or developing more grit. The values affirmation directly supports the formation of a connection between students' families and their academic identity. A review of student responses from 2018 revealed that 65% of the responses articulated an influence of culture, religion, or family on a personal value that was important to science. Reviewing student responses to the mindset intervention over several years, 52% described shifting from a fixed mindset towards a growth mindset, 62% described themselves as currently having a growth mindset, and 57% described themselves as displaying grit (Singer-Freeman & Bastone, 2017). Because increased grit has been hypothesized to be an outcome associated with a growth mindset (Boaler, 2013), we believe that increased references to grit may reflect deep processing.

Developing a Community of Scholars

Ovink and Veazey (2011) posit that programs that provide a sense of community among URM students may reduce social isolation and help students feel that they are better able to combat stereotypes. We accomplish this in Bridges by asking students to reflect on the sense of scholarly community that emerges as the summer progresses. During a one-day spring orientation, the associate director introduces the program by explaining that students will have a unique opportunity to become part of a supportive community centered around academic inquiry. She stresses that the success of the program results from its capacity to support students as they challenge themselves and support each other. She tells students (and family members) to expect moments of discomfort and instructs them to push themselves and each other

during these moments. The associate director also uses proactive instructions to shape scholarly behavior by instructing students about best practices in scholarly settings (stowing cell phones, taking notes, asking questions). Scholarly behaviors by students provide an opportunity to build a sense of community by referring to the students as colleagues and reflecting on the growing examples of support, team work, and intellectual curiosity. The development of a community of scholars has overlaps in nearly every area of the program. It emerges from the intensive scholarship that takes place in the research laboratory; is reflected upon in the ePortfolio; is discussed with the faculty advisor, faculty mentor, peers, and family; and is referenced during professional development workshops. Students' ePortfolio reflections and comments in exit surveys indicate a strong sense of community.

Professional Development Activities

According to Donahoo (2011), the successful navigation of higher education requires three types of capital. Academic capital describes knowledge of ways to succeed on academic tasks. Social capital includes the relationships that help students gain admission into and navigate the world of higher education. Economic capital describes financial resources and knowledge about how to increase or manage these resources. When we asked URM students enrolled in Biology II and Chemistry II to report up to three obstacles that could prevent them from reaching their career goals, 52% shared concerns relating to academic capital, 52% had concerns related to economic capital, and 15% expressed concerns relating to social capital. These results confirmed our belief that helping students develop skills in these areas is essential and directed the creation of our professional development curriculum.

Nearly all professional development activities are offered during a four-day orientation during the first week of the program (See Table 1 for a chronological list of activities within each area of capital). Because our students' primary focus is on their research, these sessions, like ePortfolio practice, can be viewed by faculty and students as a distraction. Therefore, it is essential to make the professional value of activities explicit. We accomplish this by beginning each activity with a discussion of the skills students will gain and highlighting skills that could be added to their resumes or discussed in ePortfolios. We discuss the skills that have been covered in the workshops with the research faculty and encourage them to provide opportunities for students to practice the skills in the research setting. These practices increase the utility value, or extent to which students perceive work to have

worth beyond the context of a requirement (Eccles & Wigfield, 2002). The information provided in the workshops becomes material that is discussed and reflected on in individual advising appointments and in the ePortfolio. When families and friends review the ePortfolio, the information and the students' reflections on the information becomes part of their shared conversations. Thus, the ePortfolio serves both as a means of encouraging reflection on the professional development experiences and as a means of inviting family and friends into dialogues about these experiences. Students recognize the value of these sessions. When asked to report the most important things they learned during the summer and the most difficult challenges they overcame, 90% described accomplishments relating to academic capital, 47% described accomplishments relating social capital, and 3% described accomplishments relating to economic capital. Responses to exit surveys indicate that students valued the content from all of the professional development workshops. As can be seen in Table 1, most students agreed the workshops addressing academic capital, social capital, and economic capital were moderately or highly enriching (over 87%, 82%, and 92% respectively) and moderately or highly enjoyable (over 87%, 78%, and 86% respectively). Taken together, we believe that these responses are evidence that students strongly value opportunities to enhance their academic, social, and economic capital.

Advising

Proactive advising practices in which the advisor actively monitors student progress improve persistence and academic success (Escobedo, 2007). We have found that Bridges students often describe a career goal without awareness of related careers that might fit their interests or skills. They also may try to hide academic struggles because they believe that sharing these struggles will negatively impact the advisor's opinion of them. It is essential to help students view their advisor as their ally. Once this is achieved, the advisor can work with students to broaden their knowledge of possible paths and increase their understanding of the steps needed to achieve their goals.

Each student has a 30-minute advising meeting with the associate director during the first two weeks of the program. Prior to the meeting students complete a survey in which they share information about challenges during their previous semester in college, concerns about the summer, and goals for the future. Allowing students to share concerns

in writing before the meeting facilitates open communication during the meeting. The advisor also reviews the student's application to the program and ePortfolio prior to the advising session. During advising the student creates an academic plan for the next 12-24 months. Students receive individualized "homework" to complete during the summer to make progress with their academic planning. The advisor discusses progress with each student during the fifth week of the program and checks in informally during weekly ePortfolio sessions. The advising session is distinctive from other program elements because it is the only private meeting which focuses exclusively on the individual student's needs and plans. It is overlapping with other elements because the student and advisor discuss content from professional development workshops, research experiences, and the student's ePortfolio. They also discuss how the student's family feels about the student's academic goals. The advising session results in content that is reflected on in the ePortfolio and can result in future conversations between the student and the research mentor. Over 95% of students report in anonymous surveys that the individual advising appointment is helpful.

Faculty Mentoring

Academic mentoring introduces students to the values, norms, and expectations of the community to which they aspire. Mentors can have a positive impact on students' early professional identity and support students' identification with an academic discipline. Ovink and Veazey (2011) found that mentoring programs that combine academic enrichment with support beyond academic training were important for URM students' success. We hypothesize that mentoring efforts have the potential to influence students' feelings of belonging in ways that might be important for their persistence and well-being. A common element of applied learning experiences is close work with a faculty member. However, not all faculty members have been trained in best practices in mentoring or perceive their role to include mentoring.

To increase the quality of mentoring in Bridges we used Campbell and Campbell's (2007) best practices for faculty mentoring to modify hiring practices and design ongoing training. Finding mentors who are productive, warm, empathetic, available, and have integrity is essential. Mentors should actively engage mentees to help them achieve program goals beyond the research experience. The associate director meets with program faculty weekly and suggests discussions they can initiate with students. She also encourages faculty to find common ground with students and share their own academic struggles.

The mentoring relationship is distinctive because it is the only close relationship the student has with a faculty member that is centered on scientific research. However, as our supportive curriculum has improved we have increased the extent to which the mentoring relationship connects to other areas including the student's ePortfolio, academic plans, and career interests. Weekly faculty meetings are used to inform the research faculty about the types of reflective writing that are taking place in the ePortfolio and to encourage discussions or research activities that might complement recent professional development workshops. Improved mentoring has resulted in close bonds between students and faculty mentors. In anonymous exit surveys, over 95% of students have rated their interactions with their research mentor as positive. The program evaluator reports that students view research mentors as helpful, patient, caring, and attentive to the needs of all of the students in the group.

Engagement of Family

Without active engagement and support of students' families, first generation, low income and ethnic minority college students can feel that the development of a strong academic identity is a betrayal of their ethnic or cultural heritage (Syed, Azmitia, & Cooper, 2011). Many of our students fill important economic functions within their families. For these reasons, gaining family support and increasing family members' awareness of what is taking place in the program is essential. Family programs establish partnerships to support student success. During the spring orientation, families attend a session that explains the purpose of program elements and includes information about ways they can support students. During the summer, students are encouraged to share ePortfolios with their families and families are invited to the final research symposium. During individual advising, family needs are part of the discussion of the student's long term goals and plans. Family engagement is a distinctive element of our program that supports students' research engagement, identity development, and ability to engage fully in the establishment of a community of scholars. The cultivation of family engagement is supported by the shared ePortfolio and the inclusion of family members in key program events. From the perspective of the family, these events provide them with a new view of the student as a developing scholar. From the perspective of the student, family engagement events provide a validation of the student's academic efforts and an ongoing source of encouragement for the pursuit of academic success.

Applications

We have described the ways in which we modified Bridges to incorporate evidence-based practices that support student success. Broadly, these modifications created a sense of academic community and identity, supported the development of a growth mindset, grit, and a future orientation, and provided students with a roadmap for academic success. We believe these supportive elements of our program are responsible for our high level of success. Refinements in our supportive curriculum have been accompanied by improved outcomes. Whereas 43% of program alumni completed bachelor's degrees during the five-year period in which we developed our supportive programing, this rose to 47% when we began to use ePortfolios as a central organizing element. Looking forward to the students who have completed the program in the past few years, 86% are currently on track to complete bachelor's degrees. Thus, we expect degree completion rates to continue to rise as we find more effective ways to support our students. We now consider ways these practices might be modified for use in other applied learning contexts.

Transforming Supervisors into Mentors

Applied learning often takes place in small groups. In these contexts, small changes can enrich the experiences of students. For supervisors to effectively mentor it is important to select supervisors who are warm and empathetic academic role models and then provide training on best practices. It is also critical to include activities that evoke reflection and nurture the mentoring relationship. Journaling and reflective writing are commonly used to document learning in applied settings. When mentors read and respond to these artifacts the mentoring relationship is strengthened.

Developing Capital

When students are struggling to meet program expectations consider whether gaps in academic, social, or economic capital may be preventing success. Once gaps are identified, create supportive programming that can provide students with the skills they need. Encourage awareness of the development of these areas of capital through reflective writing.

Developing a Growth Mindset and Promoting Grit

Applied learning often results in unexpected challenges for students. Moments of struggle are ripe for reflection and brief psychological interventions (see Snipes et al., 2012 for descriptions of many versions of

psychological interventions). It is also possible to support the development of grit and a growth mindset directly:

1) *Provide proactive instructions that support student success*. For every activity, include detailed instructions, indicate elements that previous students have found difficult, and provide instructions about ways to master these elements. Then, publicly comment on students' mastery of these difficult elements.
2) *Communicate confidence in each student's ability to improve*. Encourage students to view criticism as an invitation for growth.
3) *Encourage effort*. Acknowledge effort and improvement in performance even if there is still a need for more improvement.
4) *Provide students with realistic biographies that model academic growth and persistence*. When discussing leaders in the field or your own biography, include details that exemplify grit and scholarly growth.

Creating Engaged Learners

To produce authentic learning we must deeply engage students in a discipline. Once students are engaged, their intrinsic motivation to integrate current learning with previous knowledge will drive future progress towards mastery. Pedagogical practices that support engagement can be implemented broadly.

1) *Challenge students to discover the information or skills that will be useful to them*. It is essential to create activities that have a purpose beyond the assignment of credit. Once activities with purpose have been created, make explicit the skills students will gain by completing the activity.
2) *Infuse assignments with self-reflection to increase engagement, conceptual integration, and retention*. ePortfolio practice is well-suited to the documentation of applied learning and encourages reflection, integration, and future planning. Our curriculum can be adapted for use in study abroad programs, internships, and other applied learning contexts. The creation of an academic showcase in which the student reflects on the self, using new concepts, will support the development of academic identity.

Conclusions

Engaging in research as an undergraduate student is a transformative experience, however successful completion of STEM degrees requires sustained efforts to overcome challenges. Programs must go beyond merely providing applied learning experiences to maximize the extent to which they prepare students to persist and excel. For underrepresented students it may be especially important to provide such opportunities and ensure that students derive the most benefit from them. The intentional design of an integrated supportive curriculum, reinforced by ePortfolio practice, can help ensure that applied learning experiences benefit all and that the benefits endure.

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Table 1

Percentage of Students Reporting High or Moderate Enrichment and Enjoyment

Activities by Area of Capital Targeted

Academic Capital	Enrichment Value	Enjoyment
Successful Transition to a 4-year college	91%	87%
Study Techniques and Note Taking	92%	87%
Oral Presentations	91%	95%
Creating Research Posters	82%	87%
Excel Skills	90%	90%
Lab Skills	91%	91%
Faculty Science Lectures	91%	91%
Social Capital		
Personal Branding	87%	87%
Resume Writing	100%	100%
Scientific Ethics STIRS Case Study	91%	78%
Networking and Resume Review	96%	96%
Career Exploration Panel	91%	91%
Economic Capital		
Applying to and Funding Higher Education	95%	86%
Applying to Research Internships	92%	100%

Table 2
Writing Prompts and Sample Excerpts from Student Responses

Writing Prompt	Response Excerpt
Introductions	
Describe yourself completing the phrase, "I am" 5 ways. Share your goals for the summer, the next few years, and the next 10 years. Describe ways in which the last week has been different from other weeks of your life.	I hope to make connections with those who share my enthusiasm for nature and to inspire others
Mindset	
Describe how those with fixed and growth mindsets approach learning. Describe your reactions to academic struggles. Assess the extent to which your reactions employ a "fixed mindset voice." Propose responses to establish a growth mindset and a plan to help students foster a growth mindset. Add an image of your mindset.	I used to have a fixed mindset when it came to English class… Of course I'm still learning but now I feel if I put in more time to work on my grammar skills I'll eventually get better.
My Values and the Values of Science	
List your personal values. Describe an experience in your life that made you proud of yourself and your values. Reflect on the reason that the experience made you proud of your values. Discuss how your values fit with the values of the scientific community.	You have to use growth to learn from your mistakes when conducting experiments. You must have dependability to have trust among your peers in the science community.
Grit	
Describe grit. Explain how mindsets relate to grit. Describe the most difficult thing you accomplished. What aspects of grittiness did you display? Write a letter to your future self: Describe a challenge you wish to accomplish and explain how you could overcome each obstacle that might prevent success.	My parents do not have proficiency in English…. I had to teach myself how schools worked and how to avoid debt. I had to develop a growth mindset and grit...
Meeting Goals	
You are half done with your summer. Examine your goals. Describe the progress you have made. Propose ways you could increase your progress.	I wish to start speaking to professors and looking for research opportunities…
Ideal Career	
Reflect on your ideal career. Describe current skills that make you well suited for this career. Describe skills you need to develop. Have your thoughts about your career changed as the summer has progressed?	Working closely with my research peers and Dr. _ has made me want to pursue a more research-based career.
Conclusions	
What do you hope a viewer of your ePortfolio will learn about you? What do you believe are the most important things you accomplished this summer? What would you like to remember about your experience this summer?	We went from strangers to becoming friends … Sifting through all the data we collected shows how much work we've put into our projects.

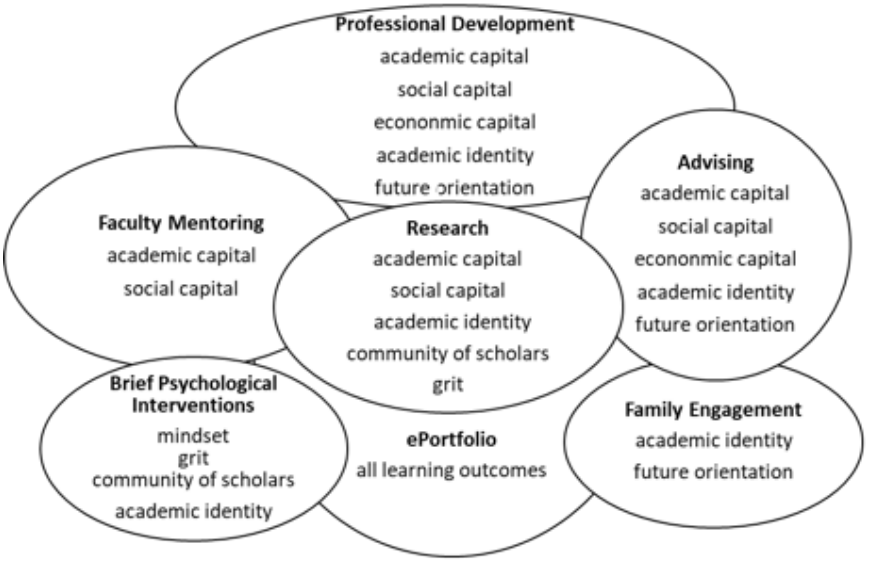

Figure 1. This figure illustrates the interrelationships between the unique program elements. Overlapping circles indicate elements with significant levels of overlap.

Figure 2. Sample ePortfolios

Looking Back to Move Forward: Understanding Progressive Education in the 21st Century

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Abstract

In recent decades, pedagogical techniques reestablishing the relevance of higher education to communities, students, and potential employers—particularly those with an experiential or applied focus—are increasingly popular. Yet, the discourse in higher education seems to isolate pedagogic approaches, and subsequently, the concept of progressive education remains unclear. The purpose of this paper is to offer a thematic organizing framework for synthesizing pedagogies that characterize progressive education in the 21st century. The identification of five major themes of contemporary pedagogies bounds the many pedagogical approaches that exist in today's educational landscape. Definitions of such pedagogical approaches will be included, and implications of the framework will be discussed.

Key words: Progressive education, contemporary pedagogy, experiential learning, applied learning

Looking Back to Move Forward: Understanding Progressive Education in the 21st Century

In recent decades, pedagogical techniques that aim to reestablish the relevance of higher education to communities, students, and their potential employers are increasingly popular. At the local level, universities and professors implement techniques that aim to enhance student engagement, while on a structural level, organizations such as the Association of American Colleges and Universities (AAC&U) encourage the adoption of such practices into the core values of educational institutions (National Task Force on Civic Learning and Democratic Engagement, 2012). These "new" forms of education are intended to increase student readiness for the job market while simultaneously increasing the relevance of the curriculum to the needs of a changing society.

Although these techniques draw from the work of theorists from the later decades of the 20th century, their roots can be traced to the progressive education movement of the late 19th to early 20th centuries. The original progressive education movement was largely focused on primary and secondary education, emphasizing the education of "the whole child," and "learning by doing" (Redefer & Hymes, 1975). This approach is in contrast to "traditional" or "didactic" forms of education such as the lecture. During the early progressive education movement, the often repeated dichotomy of passive versus engaged student gained popularity (Redefer & Hymes, 1975).

Today, scholarly literature outlines pedagogies that seek to move beyond the traditional approach that privileges active lecture and encourages passivity on the part of the student. Each pedagogy exhibits distinguishing characteristics by focusing on a particular aspect of learning that would fit under the umbrella of ideas known as progressive education. However, each approach to learning is largely theorized in isolation. In the process of championing particular pedagogical techniques, the connections between various approaches are left understated. Synthesis of these various approaches is needed to highlight the common, underlying themes and clarify the direction progressive education provides as an organizing force behind these approaches. The purpose of this paper is to synthesize the various pedagogies that characterize the landscape of progressive education in the 21st century. Using progressive education as an organizing concept, this paper will outline major themes that contemporary pedagogies hold in common. A broad sample of pedagogies, rather than an exhaustive list, will be described and used as examples in the course of explaining the major themes of progressive education. The themes provided are not intended to be understood as mutually exclusive, but the choice of pedagogy for exemplifying a theme is meant to explain the role of that theme in the activity of learning, and in some cases, to underscore that pedagogy's emphasis on one theme over others.

History of Progressive Education

John Dewey is regarded as the central theorist of progressive education. By the beginning of the 20th century, Dewey established himself as a respected theorist of education, and he remained a part of conversations around educational reform until his death in 1952 (Moyer, 2009). His numerous books and articles articulated the need for education reform and emphasized the importance of a well-rounded education that focused on the needs of individual students as well as the broader needs of society (e.g., Dewey, 1902; 1938). Dewey's ideas influenced the early decades of progressive education, which involved holistic approaches to classroom teaching as well as more experimental endeavors situating the school as an important center and source of community (Moyer, 2009).

The phrase *progressive education* is regarded as deceptively generalizing, encompassing numerous developments in US education in the early 20th century (Moyer, 2009). The contributions of various influencers of early progressive education have been categorized by such concepts as child-centeredness and social reconstructionism, but much overlap

exists between those associated with each camp (Kliebard, 1987 as cited in Moyer, 2009, p. 532). Despite such delineations, the conversations emerging from those strands of thought that appear under the umbrella of progressive education undoubtedly reshaped approaches to education in the US, ranging from that of early childhood to postgraduate studies (Redefer and Hymes, 1975; Champagne, 2006).

The child-centered approach emphasized the importance of teaching "the whole child," accounting for developmentally appropriate tasks that incorporate experiences beyond rote memorization, which was the standard primary and secondary approach to teaching at the time (Redefer & Hymes, 1975, p. 27). Marietta Johnson, a representative author of this perspective, sought to strengthen education by drawing from a belief in the innate curiosity of children. Her writings profoundly influenced the Progressive Education Association (PEA), an organization active from 1918 through the 1940's. In an interview from 1975, Frederic L. Redefer, former head of the PEA, explains the name of the association came about because "the idea of 'progress' was in the culture of the times," and thus, the word was applied to the movement in education under which the association was founded (Redefer & Hymes, 1975, p. 27). As the diversity of concerns related to progressive education became more widely pronounced, the language shifted from a focus on "the child" to encompass students of all age groups (Redefer & Hymes, 1975, p. 27-28).

Those who preferred to emphasize macro-level social philosophy in education can be contrasted with those of the more individualized, micro-level approach of child-centered authors. By the 1930's, this divide had come to characterize progressive education, with early social reconstructionists like George S. Counts criticizing members of the PEA for being "romantic sentimentalists" who eschewed the project of social change (Moyer, 2009, p. 543). Counts, whose writings influenced what came to be known as *critical pedagogy*, believed that the major weakness of progressive education was the failure to address social problems associated with race and poverty as well as unwillingness to address contradictions of American individualism in favor of patriotism and corporate interests (Moyer, 2009). During this time, long-echoed calls to "keep progressive education progressive" began to gain prominence (Ayers and Schubert, 2012; Redefer and Hymes, 1975).

By the 1950's, the progressive education movement had declined. War, McCarthyism, and decentralization of interests contributed to the silent years of progressive education in the US in the mid-20th century (Redefer and Hymes, 1975). Consequently, progressive education became associated with communism in the minds of many Americans, an association that continues to stifle discussion of the phrase today. Yet, renewed interest in critical pedagogy, exemplified by the works of Paulo Friere, inspired a reemergence of progressive education in the 1970's.

By the mid-1980's, a language shift had occurred among those concerned with progressive approaches to education. Theories of psychological development, an avoidance of politicized vocabulary, and the demands of a changing and globalizing workforce fueled the emergence of new forms of education, such as Kolb's model of the experiential learning cycle and Revan's model of action learning. However, in their elaboration of new approaches to learning, these scholars concede the basis of their ideas to have origins in decades past (Kolb & Kolb, 2005; Revans, 1982). The expression of ideas, rather than the ideas themselves, is what can truly be considered new. As most sources cited for contemporary progressive pedagogies fail to date further back than 1980, the era of this language continues today.

The proliferation of pedagogies that exist today are descendants of the perspectives expressed throughout the history of progressive education. Similar disagreements and competing interests continue to present themselves in pedagogical discussions; some examples include the role of politics in pedagogy, how to reconcile local and global concerns, and the relevance of individualized versus community needs to the mission of institutions. Nevertheless, the mixing of ideas has preserved common themes that are indispensable to any efforts to maintain the relevance of education to current social needs.

Progressive Education in the 21st Century

Progressive education originated in an era of rapid economic growth that was characterized by radical changes in the social order of the early 20th century. Changes resulting from the explosion of technology and reliance on the internet for communication mirror the adoption of cars for transportation and the use of radio and telephone for communication in the early 20th century. In both of these contexts, concerns about the distribution of wealth and access to opportunities for social mobility connect to concerns about what strategies of education would best serve

an increasingly diverse democracy (Ayers and Schubert, 2012). Herein lies the continued importance of progressive education for responding to the needs of a changing society.

The term *progressive education* is worth preserving as an organizing concept for the myriad of terms that have gained momentum since the 1980's. These "new" forms of learning are inspired by the work of Dewey and other early progressive educators, and preserve key themes such as educating "the whole person" (Kolb and Kolb, 2005, p. 205), "learning-by-doing" (Revans, 1982, p. 20), democratic responsibility (National Task Force on Civic Learning and Democratic Engagement, 2012), and "real-world" application (Hmelo-Silver, 2004, p. 239). For this reason, the nuances between these pedagogies often overlap and can be characterized by hair-splitting differences that likely arise simply because the bodies of literature describing individual terms develop in isolation despite appearing to draw from many of the same philosophical underpinnings.

Progressive education today is constituted by the continued discussions and concerns focused on prioritizing learning through experience (Kolb and Kolb, 2005), student-centeredness (Hmelo-Silver, 2004), and community engagement (Champagne, 2006). The success of prior educational theorists from Dewey through Kolb is displayed by the presence of the concepts they championed in recommendations by major accrediting bodies (such as the AAC&U) and the mission statements of individual institutions. As such, it can be more difficult to find areas in which some form of progressive education isn't taking place; shifting the conversation from whether or not progressive approaches *should* be adopted to *how* and *which* approaches should be adopted for particular contexts and goals.

Pedagogical literature today is inclusive of innumerable types of learning. These types of learning are usually named for the process by which certain outcomes are achieved and characterized by differing degrees of specificity. However, each type of learning exhibits the characteristics that follow, albeit at times with greater emphasis on some more than others.

Characteristics of Progressive Education

As the purpose of this paper is to synthesize the various pedagogies that characterize the landscape of progressive education in the 21st century, primary pedagogies and approaches are defined in Table 1. These

pedagogies may be best understood in the context of five organizing characteristics: experience, temporal, action, participation, and reflection. The qualities presented apply to all of the pedagogies considered within the progressive education movement; examples of how pedagogies represent these characteristics are provided throughout the discussion of each characteristic.

Experience

For progressive education, experience serves as the source from which knowledge emerges. Because progressive education is concerned with the emergence (as opposed to transmission) of knowledge, the learner must undergo a transformative experience. The nature of the transformation lies in the way the learner is changed by knowledge gained and the way that existing knowledge is changed through the learner's contributions. Experience pertains to individual learners as well as teachers and collectives. Inner experience will be discussed later in terms of reflection, while experiences among other people will be discussed later in terms of participation.

While experiential learning focuses specifically on the aspect of experience as the conduit of knowledge acquisition, other forms of learning focus on particular types of experience for the production of specific outcomes. Borthwick and colleagues (2007) identify three types of authentic learning: the apprenticeship model, wherein authenticity comes from actual workplace experience; the simulated reality model, wherein authenticity comes from the simulation of "real world" conditions, which is often associated with the term *situational learning* (Hewitt, 2008); and the enminding model, wherein "authenticity comes from the connection between the student's experiences and the disciplinary 'mind'" (p. 16). For each type of authentic learning, a certain kind of experience is key to affirming its authenticity, whether through direct field experience or drawing connections from one's own life experiences.

The theme of experience is also central to pedagogies of *applied learning*. Defined loosely as "learning experiences that take place outside traditional classroom settings," the phrase captures a wide variety of approaches to teaching and practices for learning (Schwartzman & Henry, 2013, p. 3). However, the common thread among applied learning approaches is the opportunity to *apply* what has been learned, in the classroom or elsewhere, during an experience that will allow the learner to build upon their knowledge base. Beyond simply transferring theory

into practice, applied approaches intend to provide the opportunity for learners to develop new knowledge from the experience of application; unforeseen achievements or setbacks are examples of how new knowledge is cultivated through *experience* in applied learning settings.

Temporal

One way of understanding the reason for the phrase "progressive education" is the notion of progression of thought when learning something new. Didactic forms of learning assume that a body of knowledge is relatively static and can be passed from teacher to learner through discipline—what Paulo Freire (2005) refers to as "the banking concept of education" (p. 72). Accordingly, the roles of teacher and learner remain dichotomous and hierarchical, in service of the assumption that the unchanging world requires the disciplining of uneducated students in order to fit into the world in which they find themselves.

Table 1. Primary Pedagogies of Progressive Education Pedagogy

Pedagogy	Definition	Characteristics/Practices
Action Learning	"…learning to pose fresh questions rather than to copy what others have shown to be useful already…" (Revans, 1982, p.23).	Group work; learning-by-doing; sharing perspectives on a problem's origins and paths to solutions; emphasized in management education
Active Learning	In contrast to passive approaches, "students must process content themselves in order to learn (Chickering & Gamson, 1987; Powner & Allendoerfer, 2008)" (Carr, 2015, p. 174).	A constructivist approach to learning; learning-by-doing; student-centeredness; use of technology to facilitate student engagement in and outside the classroom; interpersonal interaction
Applied Learning	"…refers to more of a spirit or movement in education than to a definitively bound subject matter…" (Schwartzman & Henry, 2013, p. 6). The practice of applying knowledge to practical ends.	Augmenting one's knowledge of a subject through the movement from theory to practice; service learning; independent research
Authentic Learning	"Going beyond content, authentic learning intentionally brings into play multiple disciplines, multiple perspectives, ways of working, habits of minds and community" (Lombardi, 2007, p. 2-3).	A focus on student's interest and real-world relevance; simulations; student-created media; peer-based evaluations
Coactive Learning	A practice which involves learners working on projects simultaneously, while helping each other in the process (Schoor, Narciss, & Korndle, 2015).	Group-work; interpersonal skill development
Collaborative Learning	"…a situation in which two or more people learn or attempt to learn something together" through a "truly joint effort" (Dillenbourg, 1999, p.1).	Group-work; interpersonal skill development
Cooperative Learning	"…a situation in which two or more people learn or attempt to learn something together" where "the labor is divided in a systematic way" (Dillenbourg, 1999, p.1-2).	Group-work; interpersonal skill development
Critical Pedagogy	A philosophy of education that views empowerment as the central aim of education (Moyer, 2009, p.544).	Focus on social justice; critiquing hegemonic narratives; emphasizing the learner's role in the construction of knowledge

Didactic Education	A structured approach to imparting knowledge from teacher to student (Johnson and Hayes, 2016).	In-class lectures; teacher-centered; student as passive learner
Experiential Learning	A type of learning whereby "knowledge is created through the transformation of experience" (Kolb, 1984; as cited in Kolb and Kolb, 2005, p.194).	Learning as process; activities where learning outcomes reside in the results of student reflection and critique of an experience.
Interdisciplinarity	"A process of answering a question, solving a problem, or addressing a topic that is too broad or complex to be dealt with adequately by a single discipline or profession… [It] draws on disciplinary perspectives and integrates their insights through construction of a more comprehensive perspective (Klein and Newell, 1998, p.393-394; as cited in McMurty, 2013, p.79).	Connecting ideas between disciplines; employing the perspectives of multiple fields of study to address the understanding of an issue.
Interprofessional Collaboration	"…concerned with integration of professional practice and 'does not imply the development of new professions, but rather a means by which professionals can practice in a more collaborative or integrated fashion'" (D'Amour and Onadasan, 2005, p. 9; as cited in McMurty, 2013, p. 79)	Coordinating efforts to address concerns across multiple professions.
Participatory Learning	Forms of learning that focus on participatory aspects of the learning process emphasize the importance of community partnerships and the socio-political dimensions of learning techniques.	Examples include Participatory Action Learning and Action Research (PALAR), and instances of other forms of learning that emphasize community building (Zuber-Skerritt, 2015).
Problem-Based Learning	"…an instructional method in which students learn through facilitated problem solving" (Hmelio-Silver, 2004, p.235).	Group work; development of problem-solving techniques
Problem-Posing Education	"In problem-posing education, people develop their power to perceive critically *the way they exist* in the world *with which* and *in which* they find themselves." (Freire, 2005, p. 83).	Mostly synonymous with critical pedagogy; coined by Paulo Freire in *Pedagogy of the Oppressed*
Project-Based Learning	"…an active student-centered form of instruction which is characterized by students' autonomy, constructive investigations, goal-setting, collaboration, communication and reflection within real-world practices." (Kokotsaki, Menzies, & Wiggins, 2016, p. 267).	Group work; culminating "in an end product" (Kokotsaki, Menzies, & Wiggins, 2016, p. 268).
Reflective Learning	"…the process of internally examining and exploring an issue of concern, triggered by an experience, which creates and clarifies meaning in terms of self, and which results in a changed conceptual perspective" (Boys and Fales, 1983; as cited in Furman & Sibthorp, 2013, p.19).	Encompasses multiple approaches to learning in which reflection is a key component.
Self-Regulated Learning	"…the way in which learners control their thoughts, feelings and actions in order to achieve academically" (Cassidy, 2011, p.989).	Reflection; planning; self-monitoring; emerged from the field of cybernetics
Service Learning	"…combines educational objectives with community service needs…in a way to benefit both the students and community" (Furman & Sibthorp, 2013, p.19).	Integrating community service projects into a course or curriculum.
Situational Learning	"…an umbrella term which encompasses a number of different teaching methodologies, including simulations, scenario-based learning and case studies" (Hewitt, 2008, p.87).	Learning about concepts through the study of a real or hypothetical situation.

Conversely, progressive pedagogies treat knowledge as a moving target, situated by context, and emerging through the learning process. Progressive education assumes that what is learned is not predetermined because discovery plays a central role in the learning process. In *Pedagogy of the Oppressed* (2006), Friere states that humans exist "as beings in the process of becoming—as unfinished, uncompleted beings in and with a likewise unfinished reality" (p. 84). Acknowledgement of the role that duration plays in the development of knowledge is a hallmark of progressive education—this factor is what sediments progressive pedagogy as a necessary approach for maintaining the relevance of what is taught, and the skill development necessary for learning.

Both didactic and progressive forms of education have their place—didactic pedagogies may be most useful for establishing a knowledge base, while progressive pedagogies are useful for developing personal skills while expanding one's knowledge. In some cases, a careful balance of the two approaches may be necessary to meet the objectives of a particular course (Kokotsaki, Menzies, & Wiggins, 2016, p. 273). Johnson and Hayes (2016) describe this contrast as "learning to learn as opposed to mastery of a particular body of knowledge" (p.7). Freire (2005) explains *problem-posing education* as "Education is thus constantly remade in the praxis. In order to *be*, it must *become*. Its 'duration'…is found in the interplay of the opposites *permanence* and *change*" (p. 84). Didactic education emphasizes permanence, while progressive education emphasizes change and the interplay between the two opposites as it occurs in "the dynamic present" (Freire, 2005, p. 84). The learning process is thought of in terms of the shared project of naming the world that exists for humans in order to re-construct a milieu that brings our vocabulary into greater congruence with our experience.

Many educational theorists make use of models that describe a learning cycle. While Kolb's experiential learning cycle is among the most widely referenced, other learning cycles follow similar trajectories. Underlying the idea that learning cycles can be modeled and used to improve teaching is the belief in the value of individual experience. Knowledge is created through a process of discovery and cannot exist in a vacuum apart from the experiences of learners—atemporal knowledge is not knowledge at all. That is to say, all knowledge exists for humans and is relevant to a particular context. With this point, an assumption about the nature of knowledge that is fundamentally different from didactic education emerges—not only is discovery important for the individual adapting to the world around them; discovery lies at the basis of any particular field or discipline: knowledge is constructed on the basis of connections made to prior experiences (Johnson & Hayes, 2016).

Kolb and Kolb (2005) describe the experiential learning cycle as consisting of four steps: concrete experience, reflection, formation of concepts based on reflection, and testing those concepts. The last step leads to the cycle beginning anew; testing new concepts leads to new experience, and so on. Like other progressive educators, this theory of experiential learning is grounded in processes that are intrinsic to the

lived experience. Kolb and Kolb (2005) claim that "learning results from synergistic transactions between the person and the environment" (p. 194). By conceptualizing learning as process, progressive educators acknowledge the historicity of knowledge and seek to construct pedagogies that avoid alienating subjects from the world with which and in which they exist (Friere, 2006, p. 83). Under this framework, learning transforms both the subject as learner and their object of study.

The *problem-based learning* (PBL) cycle displays another temporal trajectory from which knowledge emerges and is one instance of a more focused development within the experiential learning milieu. Hmelo-Silver (2004) describes problem-based learning as "experiential learning organized around the investigation, explanation, and resolution of meaningful problems" (p. 236). Similarly, Freire (2005) explains "problem-posing education" as starting in "the here and now" and as a humanizing approach to education insofar as learners are engaged in the process of inquiry rather than being alienated from it (p. 85). Although studies indicate no significant difference in the knowledge acquired by students using PBL versus traditional learning methods, research shows PBL enhances skills related to critical thinking, communication, and the application of knowledge to new areas (Johnson & Hayes, p. 7).

Action

"Learning by doing" is a central characteristic of progressive education. Although learning is a valuable end in itself, action remains key to both the learning process and learning outcomes. The final step of progressive learning models generally involves putting new knowledge to use. When this is achieved, the action taken also represents a critique of prior knowledge, allowing participants to bring new perspective to that which was already known while adding to that body of knowledge. The characteristic of action preserves the value of understanding knowledge development as continuous engagement, rather than a static commodity exchanging hands. That is, understanding knowledge as always already existing for human subjects, rather than existing apart from human subjects awaiting discovery by remote observers.

Revans (1982) describes *action learning* as an inherently mutual endeavor, pointing out that "recognized ignorance, not programmed knowledge…is the key to action learning: men start to learn with and from each other only when they discover that no one among them

knows but all are obliged to find out" (p. 21). For Revans, the key quality setting action learning apart from other forms of "learning-by-doing" is the focus on the unknown, rather than the known. For instance, accounts of collaborative learning often focus on the shared knowledge of a group, or the differences in existing knowledge that individuals bring to the table. Action learning, in contrast, involves learning that begins with the recognition of what is not yet known, and the project of learning occurs through the mutual endeavor to solve a problem (Revans, 1982).

Similar to Kolb's conceptualization of experiential learning, Revans (1982) grounds action learning in the "very nature of organic evolution" (p. 28). As progressive education emerged as a critique of the sequestration of learning by educational institutions to the classroom, grounding alternatives to traditional education in natural processes became a means of breaking down barriers between institutional approaches to learning and learning as a naturally occurring process of socialization. Further, grounding action learning in the discovery of that which remains unknown represents the progressive notion of knowledge development as a forward movement rather than a reproduction of established formulas. Herein lies a connection to the temporal characteristic of progressive education: time is required in order for action to take place. The goals of action learning are particularly necessary for preparing students for a dynamically changing economy and job market, where the need exists to possess the skills and flexibility to continue learning while on the job (Wade & Hammick, 1999).

Progressive educators propose that learning outcomes must include the development of civic-minded individuals in order to preserve values that uphold democracy. These proponents posit that while learning is a valuable end in itself, a progressive approach is necessary to ensure that education serves the functioning of democratic values like cooperation, civic and political engagement, and appreciation of a diversity of perspectives. The AAC&U identifies civic learning and democratic engagement as an "undisputed educational priority" for universities, which are considered critical "architects of a diverse democracy" (Campus Compact, 2012, p. 2). Service-learning centralizes these values in its approach to learning and education. Different forms of service learning exist on a continuum, from instances where the school offers services to the community to settings that are fundamentally community-based that offer opportunities for students to earn academic

credit from participation. The AAC&U emphasizes the need to ensure mutuality in all efforts to form partnerships between educational and community institutions (National Task Force on Civic Learning and Democratic Engagement, 2012). Mutuality ensures that educational institutions respond to the needs of the surrounding community, and that the community has a say in the way services are conducted.

Service-learning represents another means by which the borders of educational settings are made more fluid and permeable by allowing students the opportunity to learn through practice and the surrounding community to benefit from the work based in educational institutions. Champagne (2004) indicates three philosophical basis underlying service learning that are present in the writings of John Dewey—experience, reflection, and reciprocal learning. Reflection in the field setting allows students to gain understanding of a subject matter in a way that is superior to gaining knowledge of the subject matter. Learning in this way is reciprocal insofar as teachers learn from students' experiences, and student experiences are mutually beneficial to the community in which their learning takes place (Champagne, 2004). At its core, service learning puts knowledge into actions that serve the community and that serve the development of knowledge itself.

Participation

The human condition is characterized by being with others, and as such, people come to understand themselves and the world through relationships (dialogue) with other people. Because of this, knowledge discovery and creation cannot be thought of as an individual endeavor. What is known must be comprehensible, and comprehensibility is achieved through connection to other existing bodies of knowledge. Freire (2005) explains "no one can say a true word alone—nor can she say it *for* another, in a prescriptive act which robs others of their words" (p. 88). For this reason, the pursuit of knowledge is necessarily understood, in a humanistic sense, as a global and cooperative endeavor. When this is successfully translated to a teaching strategy, the learner becomes a stakeholder in, and a part of, the subject matter.

One means of realizing the vision of learning through participation is the shared responsibility of learning by teacher and student. Progressive approaches to education challenge the strict teacher-learner dichotomy by utilizing knowledge from life experience, emphasizing the ability of teachers to learn with and from students, and prioritizing the student's

interests and creativity in the learning process (Berilia, 2016). Student participation means that students share authority over the direction of learning with the teacher—e.g., taking classroom time to address the questions of students and inviting other students to provide responses (Oyler and Becker, 1997). A spectrum of authority exists between the teacher and student—the traditional lecture on one end and independent study on the other, with different forms of interactivity situated in the middle.

Paralleling the shared authority between teachers and students, different fields of study must share authority in advancing understanding of the world. Herein lies the importance of incorporating multiple perspectives into the curriculum—to maintain the dialogical nature of learning as a continuous process of development; always moving toward understanding without acceding to the notion that the process is complete. The inclusion of outside perspectives prevents the formation of silos within fields of study. *Interdisciplinarity* and *interprofessional collaboration* are two ways this is accomplished. Interdisciplinary studies are concerned with issues that require knowledge from multiple disciplines in order to be understood (McMurty, 2013). Sometimes, this can result in the birth of new areas of study and syntheses between fields. Interprofessional collaboration refers to the creation of teams of professionals to address a common issue. While interdisciplinarity encourages dialogue between disciplines, interprofessional collaboration ensures that different facets of an issue are appropriately addressed in practice.

Forms of learning that focus on multiple learners sharing ideas cultivate an appreciation for the concept of participation in the learning process. *Participatory learning* is described by Missingham (2013) as a way to "enable a kind of deliberative democracy in the classroom—a collective and interactive process" (p.37). A variety of techniques and pedagogies fall under the rubric of participatory learning. Kokotsaki and colleagues (2016) note that "the focus in both [problem- and project-based learning] is for participants to achieve a shared goal through collaboration" (p. 268). Kokotsaki, Menzies, & Wiggins (2016) differentiate *problem-based learning* from *project-based learning* because the former focuses on the learning process, while the goal of the latter is "to culminate in an end product" (p. 268). Although participation with others is demonstrated through both, project-based learning allows students to display in concrete terms the fruits of their collaborative efforts.

Problem- and project-based learning utilize forms of cooperative, collaborative, and *coactive learning*. Significant overlap exists in the literature between these three types of learning, all of which emphasize the theme of participation. Research in this area investigates the ways individuals function in groups and vacillates between a focus on individual psychology, group psychology, and socio-cultural influences on the learning process (Dillenbourg, Baker, Blaye, & O'Malley, 1996). According to Dillenbourg (1999), cooperative learning refers to learning that is characterized through shared effort. Differentiated from cooperative learning, collaborative learning involves the division of tasks among members within a group (Schoor, Narciss, & Korndle, 2015, p. 98). Coactive learning occurs when different students are working on separate projects "but at the same time, so they can help each other" (Schoor, Narciss, & Korndle, 2015, p. 98). These pedagogies encourage community building skills on the level of the classroom, campus, and community at large, which is necessary for cultivating responsive and responsible citizens in an increasingly diverse society.

Community engagement remains a core tenant of progressive education and has a renewed relevance given the concerns of institutions of higher education today. The accountability of universities to communities has come under question in recent years, in regards to both the communities in which they are geographically located and the communities which they serve through teaching and research. Participation is the means to bridge this gap and the concept to which the AAC&U refers when it calls for greater commitment to community engagement based on mutuality (National Task Force on Civic Learning and Democratic Engagement, 2012). This is the goal of *participatory action learning and action research* (PALAR), which seeks to move beyond the unidirectional idea of colleges providing services to communities by sharing authority for determining the direction of projects with community stakeholders (Zuber-Skerritt, 2015).

Reflection

Although reflection is described here as a separate theme, it should not be misunderstood as an endeavor that takes place separate from other aspects of progressive education. Some descriptions of the concept of reflection are criticized as being overly rationalist, encouraging a separation of mind from body, and extraction of emotion from experience (Jordi, 2011). Likewise, some readings of experiential learning models interpret the step of reflection as inhabiting a separate time and space

from other steps in the cycle. This misses the point of reflection (and progressive approaches as a whole) by reintroducing borders between appropriate and inappropriate learning styles and settings as well as positing that learning occurs only within a particular moment in a larger process (Jordi, 2011, p. 189).

Reflection deservers its own discussion because this concept encourages individual engagement with the learning process through which a "process of integration" occurs wherein individuals or groups place new knowledge in the context of past and present experience (Jordi, 2011, p. 185). This process of integration allows for "the organic emergence of conscious meaning" from pre-conceptual feelings or intuitions (Jordi, 2011, p. 185). In contrast to traditional forms of education that seek to discipline students in particular ways of knowing, reflection is key to the progressive nature of these pedagogies. Reflection empowers the individual to take agency in the production of knowledge and ensure that knowledge is made relevant to the individual in the contemporary world.

Self-regulated learning focuses on the internal mechanisms by which students adapt to the learning process. Cassidy (2011) describes self-regulated learning as referring "to a self-directed process through which learners transform mental abilities into task-related academic skills" (p. 990). Self-regulation is essential to student success, whether experienced consciously or unconsciously by the student. Cassidy displays the self-regulated learning cycle as consisting of three phases: forethought, performance, and self-reflection (Cassidy, 2011, p. 991). Because internal processes are the focus of self-regulated learning, reflection (as opposed to action or critique) is the impetus for the cycle's repetition. During the reflective phase, students perform self-evaluation in order to adapt what they have experienced to the way they comport themselves in future endeavors.

In setting up his discussion of dialogue as a participatory endeavor characterized by the shared quest of humans naming the world, Freire (2005) describes reflection as praxis: "Within the word we find two dimensions, reflection and action, in such radical interaction that if one is sacrificed—even in part—the other immediately suffers" (p. 85). Without proper attention to action, the word becomes empty verbalism, unable to transform the world. When reflection is neglected, the word becomes activism, "action for action's sake," rendering dialogue

impossible (Freire, 2005, p. 88). This concept lays the basis of learning cycles which encourage praxis through autocritique, eliminating the separation of theory from practice: "Once named, the world in its turn reappears to the namers as a problem and requires of them a *new naming*. Human beings are not built in silence, but in word, in work, in action-reflection" (Freire, 2005, p. 88).

Conclusion

The extant article aimed to synthesize the various pedagogies that characterize the landscape of progressive education in the 21st century. Using progressive education as an organizing concept, the authors identify five common characteristics of contemporary pedagogies: experience, temporal, action, participation, and reflection. As the concept of progressive education is at times seemingly elusive, a targeted review of this body of literature benefits educators and professionals invested in supporting an intentional trajectory for higher education—one that is informed by both relevant history and a clear picture of current trends. Commonly championed pedagogies and approaches such as applied learning and interprofessional collaboration can be described through the prism of the five unifying characteristics, punctuating the overarching role of progressive education in the 21st century. Further, a clearer articulation of the landscape of progression education supports intentionality in future pedagogical innovation.

One obstacle to promoting progressive education is the phrase itself. Although some theorists of progressive pedagogies may identify as politically progressive, this approach to education need not be considered inherently political. While some may argue that it should be, the aim of progressive education is to increase the efficacy of teaching methods—a non-ideological goal. The political connotations of the word "progressive" may, in fact, be a reason for the proliferation of vocabulary used to describe non-traditional teaching methods in order to forge new ways of promoting effective teaching styles that disidentify with politically-charged language.

Although many educational theorists of recent decades have shied away from using the phrase "progressive education," the phrase is helpful as an organizing concept, no matter one's political outlook. As it stands, a stark contrast has appeared between those who embrace the phrase in the hopes of maintaining the liberatory potential of these pedagogies (such as Bill Ayers (Ayers, 2012)), and others who seem to search for

any other means of describing education that espouses essentially the same values. This divide is unnecessary for two reasons. First, denying or ignoring the rubric of "progressive education" results in newer theorists claiming to reinvent the wheel, doing a disservice to history. When the historical connections between today's pedagogies and ideas from the past are located, a rich and diverse legacy emerges with the capacity to ground current efforts to move forward. Progressive education has always existed as an umbrella term for a number of currents in pedagogical thought, and the phrase is worth preserving in order to ensure continued dialogue between those with differing goals and priorities. This both makes the movement as a whole stronger through a diversity of perspectives and helps ensure against the development of similar ideas developing in isolation.

Second, distancing from the word "progressive" due to its political connotations is unnecessary, as a common goal of these pedagogies is advancement of the effectiveness of teaching and learning methods. In this sense of the word, progressive education refers to a philosophy of the educational process, one that can be adopted and utilized by anyone, no matter their politics. Preserving the current divisions in vocabulary choice sends an implicit message that only those with politically progressive attitudes are capable of executing progressive pedagogies. This is an incorrect assumption. Asserting the alternate meaning of progressive as a forward movement in education ensures that certain concepts (such as learning through emergent and immersive experiences, as opposed to "the banking concept of education") remain useful organizing forces for bringing together differing approaches that share common interests.

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Critical Reflections of Pre-Service Teacher Education Student Participation in Service-Learning: A Pilot Study

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Abstract

This pilot study explored the effects of participation in a service-learning initiative on first-year pre-service teacher education student development. The focus of the service-learning was a combination of problem-based learning and immersive activities, pairing pre-service teacher education students with an early high school-to-college bridge program established within a public urban high school in the North-eastern United States. Through examining pre-service (6) student interviews as well as content analysis of individual student journaling and researcher observations, three themes emerged that contribute to pre-service student development: (i) exposure, (ii) involvement, and (iii) learning from experience. Students who participated in the service-learning expressed perspective taking in relation to engaging and being responsive to school-aged youth. This in turn may enhance pre-service student views of their own personal growth; preparation for future work as teachers; and continued awareness and promotion of benefits to community engagement and applied learning.
Keywords: service-learning, pre-service teachers, experiential learning, community engagement, applied learning

Critical Reflections of Pre-Service Teacher Education Student Participation in Service-Learning: A Pilot Study

Introduction

Experiential learning refers to engagement that can effectively lead to learning, because an individual can develop a stronger sense of meaning behind their actions and involvement in activities, this meaning then becomes intentional or unfolding (Beard & Wilson, 2013). In teacher education experiential learning is a natural fit as traditional education programs consist of pre-service students acquiring time spent in schools (e.g., classroom observations and clinical practice) while still enrolled within a university, this in turn helps students to bridge theory to practice through applied learning early in their teacher training preparation while working directly with students and youth alike. Pre-service students are understood as those students that are enrolled in teacher education programs who are learning to become professional teachers (e.g., in-service) through specific course selection, documented time spent in schools, and the meeting of specified criteria required by both the state and degree granting institution (Parkay, 2019). There is a suggested developmental advantage occurring for those individuals who participant in gaining access to opportunities to take part in experiential learning early on in their academic programs. Pre-service teachers benefit from gaining access to the combination of academic learning and civic engagement early on, because of the range of opportunities to develop and apply leadership skills, potentially advancing personal development and knowledge of important educational frames of reference (Daniels, Patterson, & Dunston, 2010). These forms of engagement speak to what is referred to as transformative learning. Transformative learning is the recognition of how one's prior knowledge may be enriched through the acquisition of new knowledge—resulting in strengthening of personal internalized meaning behind one's experiences (Carrington, Mercer, Iyer, & Selva, 2015). The process of transformative learning becomes both the underlining reinforcement behind engaging in experiential learning as well as a potential outcome. Scholars have noted that transformative learning in college student development is critical and emerges from individuals having gained access to, participation in, and ultimately completion of a variety of educational experiences while enrolled in college (Pike & Kuh, 2005), this exploration nurtures what is understood as best practices for supporting college student development or high-impact educational practices (Kuh, 2008a). These related viewpoints serve as reasoning for consider-

ing college student development through service-learning activities, encouraging college students to work directly with community members to learn from and engage with the community. Whereas experiential learning therefore encourages applied learning through the perspective of college student participation, the service-learning activities reinforce critical reflection of the actual participation to support the development of learning processes (Jacoby, 2015). Our paper, a pilot study, focuses on examining a service-learning (SL) initiative within a teacher education course. We (1) introduce the service-learning initiative, (2) relate service-learning to community engagement-applied learning, (3) report on findings of student interviews and journaling, and lastly, (4) present future directions on research combining service-learning and teacher education.

Institutional Practices and Background on the Service-Learning Initiative

Organizationally, our institution is a 4-year private Northeastern university, the service-learning initiative that we introduced was formed within our School of Education (SOE) to aim to formalize service-learning practices and engagement that could be directly tied to teacher education. A central goal being to create opportunities for pre-service teacher education students to access and participate in community engagement early on along their path towards teacher education preparation. Structurally, as a university we have an Office of Transformative Learning (i.e., including a Vice-Provost for Transformative Learning as the main lead), this unit oversees a range of campus programming associated with both student and faculty enhancement and support. A primary example of institutional structure is faculty development facilitated through our Center for Excellence in Teaching and Learning, which also contains a Service-Learning arm that supports and oversees campus-wide Service-Learning involvement. Our SL initiative within our SOE helped to further these institutional links by filtering ties down to our School-Level, while also encouraging extension out to the community.

Many institutions of higher education work on infusing their respective institutions with opportunities for more well-rounded and hands-on experiences offered to their students through curriculum and course options. Some universities designate courses as being directly related to courses with embedded experiential learning components. The learning environment provided is suggested to create conditions for students to engage in experiential learning that can then lead to a process

of eventual transformative learning. These types of available course offerings are ultimately intended to provide authentic learning experiences to students and encourage enhanced student perspective taking, while contributing to growing a critical awareness among students in areas such as community engagement. These points of emphasis help to facilitate the pursuit of these courses with the intention of supporting overall student learning, further developing students across multiple domains, whether personal, social, academic, civic, or other. A clear example of exposure to experiential learning among students is participation in service-learning, primarily because service-learning is suggested to facilitate the prospect of participants addressing human and community needs along with a building of a greater appreciation for in-depth reflection upon the completion of the service (Jacoby, 1996). This may involve the enhancing of quality of perspective taking that students construct over time. Many pre-service teachers as an example, progress within their respective teacher education program to partake in year-long clinical experiences (e.g., student-teaching) (Henning, Erb, Randles, Fults, & Webb, 2016); subsequently, having gained experience in service-learning prior to the year-long clinical experience may add significant value to the degree to which pre-service teachers have practiced reflection on their actions and behaviors as well as exploration of their views on youth and community development before entering into the year-long clinical practice.

Our service-learning initiative was first thought of during the semester and summer prior to the year that it was first implemented with the implementation starting during the 2016-2017 academic year. Our School of Education Dean made a request to the lead author to establish a community service component within a required pre-service undergraduate education course. The lead author responded by initiating conversations and inquiring about service opportunities to engage with a local urban public high school, the intention centered on creating a university-community partnership. These conversations lead to the opportunity to connect students from the lead author's course to an early out-of-class community engagement specific to working with an early high school-to-college bridge/academy program (e.g., which had been recently established within a local urban high school, beginning in fall 2016). The pairing of the service-learning initiative with the college course was done by replacing a related research paper assignment in the course with community engagement, hands-on experiential learning or applied learning, via service-learning. Also, the language of introducing a community service was introduced as a service-learning rather than

just a community service to remind students of the emphasis on learning that can occur through critical reflection and journaling that generally a service engagement may not entail. The pre-service undergraduate course enrolled first and second year students intending to major in teacher education. Through service-learning, students were introduced to both problem-based learning and immersion activities, addressing communication and responsiveness to school-aged youth. Examples of service-learning activities that occurred both on campus and at site were workshops on college writing, goal setting (e.g., personal and academic; life beyond high school), accessing of university resources (e.g., state sponsored educational opportunity fund), perspectives on mentoring (e.g., role and impact of mentors), a university campus tour, and other forms of engagement such as exploring opportunities for successful college transitioning and developing greater awareness for understanding present and future pathways to success. Encouraging pre-service teachers to engage in service-learning was done to support students making real-time links between observing and engaging with youth to gaining a sense for how youth construct and process or dialogue on relevant information associated with their current progress in school, supporting reinforcement of content material learned in the course. The expectation of service-learning participants was the completion of journal entries based on the time spent in the service-learning, adding a dimension of fostering critical reflection of personal growth and awareness of contexts that may be contributing to youth development. This early focus on community engagement provided students with in-depth perspectives on what it may mean for them to commit to scheduled gatherings (i.e., an initial frame of reference for eventual more structured time spent in schools or clinical teaching experience), consistent reminders of the importance of self-regulated learning (e.g., building up of individual skills associated with being patient, attentive, and also having a willingness to initiate-lead conversations), and in particular expansion of broader viewpoints on schooling as a whole (e.g., such as potential schooling experiences distinct from the pre-service student's own) as well as real-time recognition for varying needs of youth (e.g., diversity in youth development). Participation in the service-learning initiative was a model of an early learning phase for students to consider becoming a well-rounded educator. Conceptually, individuals who participated in the service-learning may be better positioned to become more prepared to engage with diverse communities once they eventually transition into the teaching profession. For example, high quality teacher professionals often have progressed from an initial (e.g., early in teacher education programs; first-year and second year) to a more

fluent recognition of learning across multiple contexts such as school-aged student development, school settings, educator-student communications, and strategies (Henning, Erb, Randles, Fults, & Webb, 2016), namely service-learning representing a form of teaching pedagogy.

Service-Learning as an Application of Community Engagement and Applied Learning

Community engagement is service-learning, lending to both a teaching and learning strategy that merges service and personal reflection (Daniels, Patterson, & Dunston, 2010), while potentially promoting collaboration between institutions and communities. The embedding of the service-learning initiative underscores pre-service teacher education well, because it reinforces a premise that community engagement through applied learning is crucial to supporting relationship and capacity building between institutions of higher education and respective surrounding communities. There is a documented history on the promises of community engagement, a mechanism for sharing of resources, to strategically place it as a standard among institutions of higher education to serve and address the needs of communities. Research over the last decade in this current journal has spotlighted this by making the case for applied learning across multiple forms of course and program design, service-learning continues this momentum. There are many contexts associated with applied learning that link back to service-learning, including, but are not limited to: what is known of the benefits and reported meaning behind community engagement in contemporary times (i.e., strengthening of university-community partnerships), reviews of institutional factors and programming that contribute to effective engagement (e.g., community engagement underlining best practices within the field of engaged scholarship), and shifts in institutional practices of community engagement from simply applying existing institutional programming to outreach to communities to the redesigning of programs to meet the needs of increasingly diverse sets of stakeholders, to the integration of the process of engagement as an example of institutional missions and transformative learning. Therefore, there are a number of theoretical and practical inroads being made to express a commitment to community engagement and applied learning through the application of service-learning.

Methods

Design and Approach

Our study applies a case study (Balback, 1999) approach as our findings presented consist of describing the impact of engaging in service-learning on first-year pre-service teacher education student development. The sampling that we used was a convenient sample as participants were university students who had engaged in the embedded service-learning initiative within their respective college course. Our qualitative research design focused on the following areas of critical reflection (Ash & Clayton, 2009): (a) content analysis of SL participant's reflective journaling (e.g., the journaling involved having students reflect on describing, examining, and then articulating their learning derived from their SL experiences; D.E.A.L. Model), (b) a series of interviews (i.e., interviewees were asked for consent and informed of their rights; interviews were audio recorded and lasted approximately 30 minutes each; all interviews were recorded and transcribed) that were conducted with students to better understand more in-depth perspective on a range of related contexts on such areas as (i) personal meaning behind engaging in service-learning, (ii) impact of engaging in service-learning on oneself and others, (iii) the potential contributions of having engaged in service-learning to understanding of teacher effectiveness, and (iv) implications for becoming aware of university-school partnerships, and (c) our researcher observations of students engaged in the service-learning. The inclusion of these three distinct indicators allowed for triangulation, which combined with rich description of data and researcher clarifications increased the likelihood of credible results (Creswell, 1998).

Study Contexts

Approval was obtained from our Institutional Review Board for the research protocols used in this study. All participants signed an informed consent form prior to the interviews. A total of 6 traditionally college-aged students agreed to participate, individuals were in their first or second year enrolled in a four-year mid-sized private Northeastern higher education institution. The ethnic-racial background of participants consisted of one male European-American student and four European-American as well as one Latina female student. Data collection occurred in the spring and fall of 2017. All interviews were confidential and only research team members had access to transcripts, all interview data, including transcripts as well as journaling and any

observation notes were stored in a locked cabinet. In the subsequent sections we report on our findings, study limitations, and concluding perspectives.

Results

The findings presented herein consist of reporting on critical reflections made by students along with clear progression of student development being made through the application of service-learning, directly tied to experiential learning. In relation to the content analysis of student journaling, students had the opportunity to expand upon the D.E.A.L. Model for Critical Reflection (Ash & Clayton, 2009), as students were prompted to reflect on their individual experiences in the service-learning during the semester long course in which the service-learning took place. In combination with observations, the findings of our study suggested that pre-service teacher education students gained a considerable amount of meaning behind engaging in service-learning. After reviewing the data collected and examining it in-depth, three overarching themes emerged, we spotlight each along with providing a subheading to help summarize student feedback.

Finding 1: Exposure

Contributions being made to developing a person's frame of mind (e.g., mindset).

This became evident in how students were willing to be open minded and actually began to form connections between initial prior knowledge and new knowledge construction:

> It was a *very different environment than I am used to* and *as a teacher you need to be exposed to all different kinds of environments*. (Angelica; Latina, Cuban-American)

> You need to be able to have *time spent in schools before you're actually a teacher and be exposed to different kinds of children* and children with all types of needs and from all different types of backgrounds. (Jennifer; Female, European-American)

> Well I thought that service-learning was a great thing… *it allowed me to be a part of the community around [the university] more* and I really got to speak to the kids individually and it just was *great exposure to eventually being a teacher.* (Emily; Female, European-American)

> I *just feel like it opened me up to understanding different ethnic backgrounds*… I have to work hard to make sure I set a good foundation for the children. (Samantha, European-American)

> *Definitely sharing your experience gives you an experience in itself*, because *not everyone is a mentor or has mentored before* and *having to do it for class might motivate them* like *I am motivated to go on my own and meet with other students and help them*.
> (Lindsey, European-American)

> *I genuinely enjoyed service-learning*. It *gave me* a *different perspective on how to be a teacher*. Getting that new experience from service-learning *truly helped me gain a new perception*... it *helped me realize* how much a teacher matters in a classroom and *it changed my perception of teachers*. (Michael, European-American)

Finding 2: Learning from Experience

Gaining a sense for the process of perspective taking.

This was highlighted as students began to reflect on how experience relates to their current individual progression:

> *I would say that it opened up my mind* in that working with older kids, like I never worked with older students before this *service-learning*... I always worked with younger children so in that way *it changed my perspective*. (Angelica; Latina, Cuban-American)

> I think *any experience that you get in a classroom before you're actually going into the real world is important* because it gets you experience... That's *important for service and teaching*. (Jennifer; Female, European-American)

> Also, *learning from those experiences and following up with those experiences* so I can be *better for next time* and it was a great way to *help the community*. (Emily; Female, European-American)

> *I would say it's really different to me* like everyone comes from a *different educational background and the foundation kind of starts at home and what their home life is like*. Some of the exercises we did *we learned about where these students come from*

and I compared it to myself and what I have in a way and *it got me thinking about that [perception of self and others]*. (Samantha, European-American)

It also got me thinking about stuff like that [perception of self and others] and *it gave me confidence to be more of a mentor to other students because I never did something like that before… I can open up with [students]* and *learn about their life and they learn about mine* we like talk about some things and it definitely makes it more comfortable with trying to *relate to students on a different level other than just math or science other than just core subjects, but on core subjects I think that is important too*. (Lindsey, European-American)

What it does is it puts you in a classroom essentially. In that sense I think it was very helpful and *it gave me an idea of what a classroom is like*, not only did it make me understand the differences in school districts. *It made me feel grateful for the education I had growing up* and *made me realize that as a teacher*, because we were lucky enough to participate with teachers [in the service-learning]. (Michael, European-American)

Finding 3: Involvement

Community engagement through service-learning.

Students became more informed of the application of service-learning and it's potential role it can play as a mechanism for students to be informed and more engaged.

Service-learning means to me about *getting involved* in local communities. (Angelica; Latina, Cuban-American)

I *liked how we all worked together as a classroom*, we all did group activities, it just made it easier to talk to the kids...in the *service-learning* you had to be able to like put yourself out there and be like outgoing… *work together*... I think future teachers getting as much experience as they can will help them in the long run… *be familiar with students.* (Jennifer; Female, European-American)

I think it affected me personally, because it really *opened my eyes to the community around me* and I was able to learn more about teaching… teaching [the youth] from other backgrounds

> then my own… I think it really just broadened everyone's horizons and put me out of my comfort zone a little bit and it made me more comfortable to do that and work with kids (Emily, European-American)

> *I feel like service-learning like what we're doing is like what a business major would be [doing] going to an internship… its outside of the classroom practice*.. we're not just helping ourselves *we're helping others* while we do it like *mentoring others so they get a gain too* (Samantha, European-American)

> *Looking past just what you see in front… looking deeper into their home life and being aware of differences between the children*, because that's something we talk about in class and I feel like also being able to know [students] on a personal level than just [based on a textbook]. (Lindsey, European-American)

> As far as benefiting the people going through service learning, like I said before *it gives you the experience of being in a classroom and benefiting the community... it [also] gives [the university] a better reputation...* it helps [the university], because w*hen people come out of [the university] with a teaching degree they'll have experience*.
> (Michael, European-American).

Student Journal Entry Samples

The student journal entries added reinforcing perspectives to help students center their attention on making sense for themselves on what service-learning has meant to them:

> *I think it [is] important for future teachers in the education program to get lots of time in schools and with kids, and that is exactly what this experience has given me and my classmates*. We got the opportunity to work and interact with students, which is the ultimate goal of this service-learning experience… *The fact that we as a class go out* and *are actually doing what we learn about in class we are just reinforcing everything we learned and will eventually help us in the long run*.
> (Angelica; Latina, Cuban-American)

> I did not realize this would benefit me greatly in preparing to become a teacher. *I learned a lot simply from talking to some*

students and my peers on the days of the service experiences. It is definitely something that made me more confident in talking and relating to students about whatever topic comes up. *It also interested me to see my peers all come together and complete the hours for more than just saying we got course credit*. All in all, it was a very good experience and *my knowledge of service-learning grew each meeting* we had… *The idea of reflecting and connecting what one learned back to what the course is teaching, makes for deeper thinking then simply sitting in lectures*. (Jennifer; Female, European-American)

I have developed an even greater passion for being an educator. These experiences have taught me so much about service-learning and how it is an effective way of teaching. *I was able to get hands on experience while being able to reflect and be guided through the process*. *It is a teaching style*, because of the fact it is organized by an educator and it is effective because the students are actually participating in the activity that they are learning about… *I believe the students that we were working with in the service-learning project also benefited, because of the fact that they are working with people that are closer in age with them, almost like peer learning*.
(Emily; Female, European-American)

Visiting the [high school-to-college bridge program] *opened my interest to having more university-school partnerships in the future*. *I have gained so much knowledge about others and it opened a new world for me*. I realize how important these partnerships are. I think it is important for children to have a relationship with older students, and not just older adults. *It also helped me have relationships built with other students, just like I will do when I become a teacher*. So, this partnership has helped me grow into a better teacher candidate. *Both sides of a university-school partnership can benefit from this relationship*. The university students will gain better communication skills, as well as the school students…*This partnership has driven me to want to continue mentoring and helping others*. (Samantha, European-American)

I think it's really important to stress the idea of getting involved in a service-learning experience[s] before stepping in a classroom setting for your first day of work. With this experience, fu-

> ture educators can get a sense for what to expect in a classroom, aside from observing as a bystander through observation hours. With service-learning, others get a chance to truly connect with students aside from knowing students based on their achievements in school. I have found this to be the most interesting and important aspect that I have taken away from this experience because although we are all different, we have commonalities with the goals we want for our future, and the types of achievements in education we want to make. (Lindsey, European-American)

> *A personal gain I received from the experience is actually quite surprising*. *Upon walking into the school, we were stopped by security guards and metal detectors, and had to give ID to the front desk. After this first impression, I was quite concerned with the nature of this school and what we were bound to walk in on*. *To my surprise, I had an experience with very bright students who do want to grow as intellectuals*. As I continued to talk with each of them, I began to notice their intelligence even more. The gain I received was that although they may not come from the best neighborhood or have the same opportunities as others, they still work very hard to get to where they are and perform to the best of their abilities. *Working with the cohorts gave me a better understanding of how a classroom is operated and an idea of the style of teaching I want to follow. The service-learning allowed me to observe the different aspects of a high school classroom and other factors that come along with it*. (Michael, European-American)

Study Limitations

First, interviews were conducted on a volunteer basis. Therefore, we utilized a convenient sample. Participants who agreed to be interviewed and have their respective journaling reviewed were understood as a subsample of the total amount of students who participated in the service-learning initiative. As such, smaller sample sizes along with interpretation of the data collected only reflects a unique segment of pre-service teacher education student perspectives—results offer an inside look at a case study. Second, our subsample itself represented a convenient one. Continued research should be inclusive of more participants so as to gather a more comprehensive and more in-depth representation of service-learning and its potential benefits for pre-service teachers. Second, our study emphasized results from a specific demographic of

students, those that were enrolled in an education course offering a service-learning component within a mid-sized private Northeastern higher education institution. Third, the majority of participants were female and European-American, leaving room for considerations associated with extended intersectional student backgrounds and perspectives. As a whole, we recognize that the findings of our study perhaps are only localized to our specific institutional contexts, whether the service-learning initiative or subsequent student participation can be actually scaled to other institutions remains to be further understood.

Discussion

Our study contributes to research on ensuring opportunities for constructive early learning experiences among pre-service teacher education students to enhance their personal frame of reference in relation to expectations, commitment, and engagement with youth. An implication of this research is that community engagement and applied learning matters. Finch, Steinke, and Hudson (2013) suggested that service-learning, for example, is critical in this area, as it can bridge curriculum and outside of the classroom experiences; ideally fostering personal growth. Our study's findings reinforces this understanding by having reported on what participating in service-learning meant to a segment of pre-service teacher education students. In addition too, an outcome of teacher education students having participated in this service-learning was engaging with an urban centric diverse high school student population that perhaps otherwise may not have occurred among pre-service teacher educators. The emphasis being, that the youth in the high school-to-college bridge/academy program were all identified as either Latinx or African American and were also understood as high achieving students as they were dual enrolled in both a community college and their respective high school (e.g., the program's goal was completion of both a high school diploma and Associate's Degree), presenting a divergent mainstream student of color narrative that may be overlooked. The design of the service-learning strategically brought together these two community of learners offering an important case study.

Conclusion

We believe service-learning in higher education supports students developing a greater sense of self-regulation particularly in recognizing such contexts as broader viewpoints around schooling (e.g., possible schooling experiences distinct from their own, relative to the com-

munity partners being engaged). Future research, beyond this pilot study, will focus on considerations for replicating the service-learning embedded within teacher education contexts to a larger participant sample size. Further research ought to center on the impacts of service-learning on the community partner(s) involved as well as an attempt to follow-up with university student participants in later years to determine any perspective change from initial service-learning experience across subsequent years. Furthermore, more research is needed to better understand how organizational and institutional practices can support similar service-learning initiatives within respective university and community settings.

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Non-Traditional Models of Applied Learning in Teacher Education through K-12 School-University Partnerships

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Keywords: School-University Partnerships, Teacher Education, Collaboration, Community Engagement

Abstract

This article presents three different non-traditional models of partnership and applied learning experiences in teacher education. The projects from different content areas in the same licensure program showcase the possibilities of new approaches to school-university partnerships in bringing applied learning to teacher education. We discuss the project approaches, learning outcomes, and challenges for stakeholders, and provide suggestions for creating meaningful and successful applied learning initiatives. Implications for applied learning in teacher education are also explored.

Introduction

PK-12 school university partnerships have historically provided applied learning opportunities in the form of practicums and internships, yet teacher education courses rarely look beyond the traditional field experience model in creating such opportunities. Over the last four years, faculty from different content areas in the Elementary Education and Higher Education programs in the College of Education have committed to partnering with local public school, teachers, and administrators to create innovative applied learning experiences. In this article, we provide analysis of and examples from these three applied learning projects, and then discuss the implications and challenges of implementing applied learning experiences between educator preparation programs and school partners.

Applied learning in teacher education has a long history in discourse on practical field experience, which provides students with opportunity to practice their learning in real-world settings (D'Amico, 2015). In reviewing the existing literature on the discussion of field experience in special education, Nagro and deBettencourt (2017) concluded that the value of field experience is undisputed despite there is a need for more research on the impact of field experience on students in different settings. Different models of field placement, such as in a multicultural setting (Segal, 2011), online (Compton & Davis, 2010; Kennedy & Archambault, 2012), or international setting (Malewski, Sharma, & Phillion, 2012; Winslade, 2016), have been discussed. Yet, despite different settings, most field experience models are based on the traditional observation or teaching format.

There are, of course, other models of teaching that engage learners in applied experiences that move beyond traditional field placements. Boyer (1996) emphasized the need for education to engage students in social issues through practical, real world experiences. Service learning, which connect academic content to work with communities, particularly through volunteering, is one form of applied learning that aligns with Boyer's vision (Furco, 1996). In fact, service learning is one of the most popular applied learning strategy in higher education (Jenkins & Sheehey, 2011). Applied learning experiences in higher education have been shown to benefit students in meaningful ways. Critical reflections demonstrate that students glean meaningful insights about their learning and development from their engagement in applied learning experiences (Ash, Clayton, & Atkinson, 2005; DeVita et al., 2016). Reporting from the American Association of Colleges and Uni-

versities (AACU) notes enhanced learning and development of diverse skills from participation in a range of applied learning experiences: internships, faculty-mentored research, and directed independent studies, among others (Kuh, 2008). Applied learning has been shown to be effectively integrated into academic courses as well, including online courses (DeVita et al., 2016; Gilboy, Heinerichs, & Pazzaglia, 2014) as well as within high school classrooms (Fulton, 2012).

Although literature on applied learning at the university is growing, little scholarship is available on applied learning in teacher education that moves beyond traditional models of field experience and partnership between school and university. In teacher education, applied learning beyond field experience has taken forms mostly in service learning (Bates & Lin, 2015; Chen, 2004; Power et al., 2017; Taylor, 2002) and research (Bray & Miller, 2014). With sporadic examples available, we consider our projects valuable in providing new models of applied learning in teacher education.

We argue that these three examples are non-traditional models of applied learning and partnership in teacher education because the activities contain characteristics of authentic learning which include involving real-world problems, providing open-ended inquiry, engaging students in social learning, and empowering students "through choice to direct their own learning" (Rule, 2006, p. 2). Moreover, the projects created unique school-university partnerships. The partnerships we created are grounded from the needs of school teachers and created reciprocity in the partnership (McNall, Reed, Brown, & Allen, 2009). It is in the mutual school-university partnership, our projects succeed and fruit.

A University-Wide Commitment to Applied Learning

Before presenting these three examples, we provide a brief description of the role of the university and our departments in supporting each of the three partnerships. ETEAL, or Experiencing Transformative Education through Applied Learning, is an administrative unit at the University that supports integration of applied learning across campus (see www.uncw.edu/eteal). ETEAL provides a range of supports to faculty and staff on campus who want to integrate applied learning in practice, including a portfolio of grants, professional development workshops, and specialized initiatives, such as the 2-day Applied Learning Summer Institute. By the end of Spring 2018, ETEAL had funded initiatives in every academic department on campus as well as with the library,

Division of Student Affairs, and other non-academic units. ETEAL's Strategic Plan Status Report (Boersma & Hicks, 2017) noted that students had taken courses with ETEAL-awarded faculty over 28,000 times from Fall 2013-Spring 2017, and highlighted that there are nearly 8,000 applied learning experiences on campus each year. In a March 2018 address to campus, UNC System President Margaret Spellings recognized UNCW's commitment to applied learning: "The idea of applied learning — enabling students to learn through experience and not confining an education to books and lectures — is fairly simple in theory. But implementing it is hard, and UNC Wilmington has done it well. And that means students retention is up, graduation rates are up, and students are leaving with skills and knowledge that serve them well in the workforce."[1] Applied learning is integrated into all aspects of campus at UNCW, which is being recognized for its efforts as well as for the positive outcomes associated with supporting applied learning initiatives.

Applied learning is a cornerstone of our College of Education. All preservice teachers enrolled in our programs complete a comprehensive number of hours of applied learning in school classrooms, with all programs moving from an active observer in early field experience to full student teaching during their last semester. At the very basic level, field experience with children in classrooms is applied learning in teacher education. However, we argue that applied learning in teacher education can extend well past this traditional model as the three projects discussed in this article demonstrate. We would be remiss to not acknowledge the role of our departments' largely constructivist aims and administrative support in helping us see all three projects through to completion and even into subsequent semesters. Both departments supported the work through available fundings and made extensive efforts to highlight and celebrate the uniqueness of each project. For example, school partners were invited to a faculty meeting to present about their work alongside their faculty collaborators. The depth of these partnerships and the subsequent learning opportunities provided to the students were valued and prioritized by department administration and treated as models of applied learning.

[1]see https://uncw.edu/news/2018/03/unc-system-president-margaret-spellings-presents-state-of-the-university-address.html

Three Successful Models of Applied Learning in Elementary Teacher Education

Here, we provide three examples of non-traditional applied learning in elementary teacher education. Each example offers a model for expending applied learning in the classroom. The first example focusing on STEM education was led by Dr. Lynn Sikma. The second example describing the performance of social justice project was co-led by Dr. Christine Liao and Dr. James DeVita. The third example outlining the book club model was led by Dr. Lisa Buchanan. Each of the projects also involves a partnership with local school teachers as described below.

Engaging a Teacher Leader in Elementary STEM Education

My partnership with Victoria began in the spring of 2015 when I was supervising a student intern in her fifth grade classroom. While there, I was struck by her prioritization of science, atypical for most elementary teachers. Whereas most elementary classrooms I observe in do not have a dedicated daily time slot for science, she allotted 30-60 minutes for it every morning and her classroom walls were filled with science posters and anchor charts. An entire wall in her classroom was devoted to Science Olympiad because she volunteered as the school's coach. When I spoke to her about this unusual emphasis on science, she expressed a passion for STEM (Science Technology Engineering and Math) and the importance of exposing students to STEM activities, but was also quick to point out her insecurities in her content and pedagogical knowledge related to the subject, despite nearly two decades as a classroom teacher. This juxtaposition led to an informal discussion about possible projects we could collaborate on that would help with these insecurities.

Shortly after the discussion of project possibilities occurred, Victoria received notification that she was chosen to be a Master Teacher, a PDS initiative at the university aimed at building leadership capacity in practicing teachers. As part of the three-year program, each Master Teacher is partnered with a faculty member whose interests align with theirs and together, they develop and implement a mutually beneficial professional growth opportunity. Since my area of concentration is elementary science, I was chosen to be Victoria's Master Teacher faculty associate to help her pursue growth in the area of STEM education.

For her Master Teacher project, Victoria developed and housed a set of STEM kits for her school. Each kit included an authentic STEM activity utilizing all four aspects of STEM that could be modified for grades K-5 so that every teacher in her school could utilize them. Each kit contained all the materials needed to implement the activity, including consumables, literature, and a detailed lesson plan that included grade level modifications. Each month, she would develop two new kits that were taught during a Friday STEM enrichment time she created for the fifth grade. Each Friday, she would give up her plan time to implement a kit with one of the three fifth grade classrooms. On a rotating three week schedule, each class would skip their weekly assigned enrichment class (music, art, or PE) to attend STEM time with her (Figure 1). At each stage, she would make modifications to the kit based on how the lesson went, with the result being a refined kit at the end of week 3 that was ready to share with other teachers.

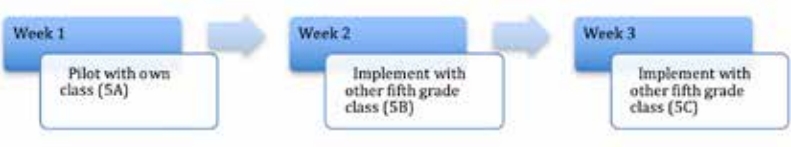

Figure 1. Kit implementation schedule

As a mentor for Victoria throughout the kit development, I was able to use examples from our collaboration in my elementary science methods course. Not only was I able to connect course discussions to authentic classroom learning observed in Victoria's classroom, but I was also able to utilize Victoria as a tangible example of how elementary teachers can successful teach science despite not feeling confident in their pedagogical content knowledge. In an effort to further benefit my students, I invited Victoria as a guest lecturer in my methods course. She presented on lesson planning in science and how to utilize standards to drive instruction. Throughout her presentation, she spoke extensively about her own science content insecurities, but how she overcomes them in order to effectively teach her lessons. She emphasized the importance of making time to teach science at the elementary level. She discussed her STEM project, her insecurities about it, and why she felt so passionately about creating authentic STEM activities for students across grade levels. In two hours, she managed to link all the major course components I had talked to my students about in a practical, meaningful way, providing immediate buy-in. Though Victoria always worked as a partnership teacher for interns, she never considered herself a teacher educator. This experience provided her with another

opportunity to stretch beyond her comfort zone and to see herself as a leader. The participation in my course also impacted Victoria's instruction in her classroom. Prior to her presentation, she came early and sat in as I modeled an inquiry-based lesson for my students. In the weeks that followed, she modified the kits and her daily science instruction to include more inquiry.

Though Victoria's role as a Master Teacher has recently ended, we have not ended our collaboration. We are constantly considering ways to enrich the learning opportunities for our students and each other. Building upon our work, she continues to guest lecture in my science methods course every semester about standards-driven lesson planning in science and provides students with a plethora of resources related to science teaching. The following week, she serves as a consultant for students as they write their own science lessons, actively reviewing plans and providing resources and ideas. Currently, we are implementing a collaborative learning experience for our students centered on experimental design and science fair that embeds a portion of my course in her classroom. As part of the project, Victoria presented a mini workshop to my students on how to provide feedback to elementary students, specifically in science. All of these learning experiences, which have evolved and deepened over time, began with Victoria's own personal applied learning project.

Integrating the Arts Beyond A Single Classroom

This collaborative applied learning project aimed to create authentic arts integration experiences for Elementary Education major undergraduate students in the Integrating the Arts course and Higher Education major graduate students in a Social Justice in Education course. The collaboration also involves dance students from a local high school and middle school. The stages in this project include research and filmmaking, film to dance choreography, dance teaching and practice, final performance, and arts-integrated lesson based on the performance. Figure 2 shows the stage, process, and groups involved in this project. The culminating event of the project was a Film-Dance performance, called the *Performance of Social Justice*, which was held at the local middle school and including the middle school students, teachers, and administrators as the audience (Figure 3). After the public performance, undergraduate students enrolled in the Integrating the Arts course created lessons based on the performance and representation of social justice topics; the undergraduate students then taught their lessons to middle school students who attended the performance.

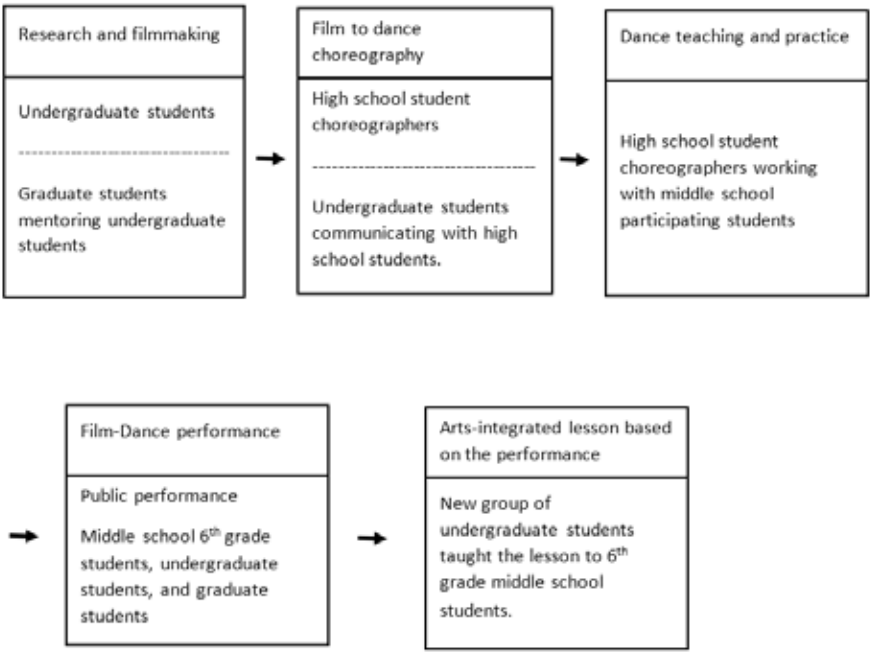

Figure 2. Stages, process, and groups involved in the project

Figure 3. Final Performance

This unique applied learning project began in the Fall semester with the undergraduate students' field experience in local elementary schools. The undergraduate students researched social justice issues in their field experience school setting. During the research timeframe, they also interacted with the graduate students to learn more about social justice issues in education. The graduate students' role was to serve as mentors to the undergraduate students. This allowed the graduate students to apply their learning in the higher education mentoring setting, which was an important skill for these higher education major graduate students.

The undergraduate students applied their learning about using the arts to create meaning by developing films to represent social justice issues in their field experience schools. Working in groups, they used a variety of strategies of filmmaking for their films, such as interviewing, remixing, and animation. These films were shown at the end of the semester to the public and shared with the collaborating high school students. We brought the high school students to the university campus and provided an opportunity for them to interact with the undergraduate students to learn more about their film and the topics.

After receiving the films, the high school student choreographers worked to create dances based on the social justice topics represented in the films. The high school students worked with the middle school participants to create the dance performance. Their challenge was to create a film and dance elements that effectively represented the social justice topics explored in the project. The project required multiple layers of collaboration among levels of education (elementary, middle, high school, undergraduate, and graduate courses), and challenged students on how to demonstrate learning and development across those levels through integrated media (film and dance).

Through partnering with the local high school dance director and the middle school, this applied learning project was unique in that it involved students from different levels to collaborate and different types of applied learning were utilized at different stages in this project. These applied learning aspects of the project included research, mentorship, field experience, creative approaches, and practical application in the field. For example, the undergraduate students were involved in mini research on social justice issues in their field experience schools at the beginning. The graduate students were placed in mentorship roles. The collaboration between all the groups of students to create the performance was creative applied learning. The creating and teaching of an arts-integrated lesson to middle school students was the practical experience embedded within the course. This multi-leveled collaboration and applied learning approach not only provided different groups of students with a specific applied learning experience but also added layers of learning experiences they cannot obtain through a single applied learning assignment. Each component was an applied learning experience for the respective group of students involved, and all components were essential to preparing students to complete the final product of the whole applied learning experience.

Although the project was successful, there were several challenges throughout the process. Communication was one of the most significant challenges because the project involved different groups. Class schedules, for example, made it difficult to find a time for graduate students to visit the undergraduate students' class even within the same College at the University. The communication between graduate students and the undergraduate was largely through email and online resources (e.g., Google docs). This was a slow and sometimes inefficient way for communication. Similarly, although we were able to bring the high school dance students to the university campus for the film screening

and interaction with the undergraduate students, the communication between these two groups of students was limited due to time constraints. Some groups of undergraduate and high school students continued to communicate through email after the meeting, but not all groups did. Furthermore, because of the time needed for this project, the project timeline crossed from the Fall semester into the Spring semester. The undergraduate students in the Spring semester participated in a different applied learning experience and finished the last piece of the project—teaching an arts-integrated lesson based on the performance to the middle school students. However, because they were not the filmmakers, their understanding of the films and the topic was limited compared to the undergraduate students who created the films. Moreover, most of the students who created the films were not able to attend the final public performance because they have other classes during the day. Even though there are challenges, we believe that this can be considered a successful new model of applied learning that will benefit students beyond a single classroom. Through regular, ongoing conversations and meetings among the experience collaborators (Elementary Education instructor, Higher Education instructor, High School dance instructor), the project provided significant learning opportunities to all students involved.

Applied Learning in a School-University Partnership Book Club

This project joined three fourth grade public classrooms and undergraduate elementary preservice teachers enrolled in a social studies methods course for a semester-long historical fiction book club. Throughout the semester, fourth graders and preservice teachers exchanged penpal letters about the book, *Serafina and the Black Cloak*, and then met together on the elementary campus to discuss the book and engage in small group activities planned in collaboration between the three teachers and my preservice teachers. In the semester prior to implementation, Caroline, Joanne, Rachael and I planned and implemented the logistics and made spaces for each other within the semester for the project to unfold.

The model we developed is unique in that we built on established relationships within our strong professional development system to bring a different form of applied learning to the program through the methods course and K-12 classroom partnership. In this specific project, preservice teachers' applied learning experience was couched within their elementary social studies methods course, where throughout the semester, preservice teachers and elementary students worked together in

the book club. The partnership school for the project was not a school that students were placed in for their required field experience, so this project provided an additional school experience beyond the program requirements for all students enrolled in the methods course.

The evolution of the partnership design. This unique partnership between College Park Elementary and UNCW began in 2014 when I supervised Caroline as a student intern. Joanne was Caroline's partnership teacher for internship, and immediately, I was invited into their shared space as co-teachers. I spent time during her internship semester in the classroom observing their planning and collaboration, and stayed in touch with Caroline post-graduation. Following her internship, Caroline was hired at College Park Elementary, and eventually both began teaching fourth grade. In the first year of the book club, I worked with Caroline to create the initial design of the project. We used a small group literature circle model and then a whole group novel study model. It was fairly low key in the first year, focusing on bringing the fourth graders and elementary preservice teachers together in the elementary classroom. In the following year, we piloted two classrooms matched with two sections of the methods course and we all read the same book. In 2016, Rachael joined us in the book club model in the 2016-17 school year as the third teacher in this phase of implementation. That year we developed a model with three classrooms and two courses for a total of 75 elementary students, 40 preservice teachers, three classroom teachers, and one university faculty.

Figure 4 illustrates the design of the book club project.

Figure 4. Book club project design

Why is this partnership unique? This project is unique for three reasons. First, this project is embedded in a methods course where teaching faculty and classroom teachers collaborate to create the project; this is not the process generally used in programs where universities work with schools to place students in host classrooms. Traditionally, placements are created to fulfill requirements for observation and teaching prior to a full semester internship and not for work that joins the methods course objectives, faculty, and classroom teachers, and students. As a result, this opportunity actually expands preservice teachers' experiences in elementary classrooms prior to full time student teaching. Second, this project has consistently valued reciprocity among stakeholders. That is not to say that traditional placements do not reciprocate benefits for teachers, students, preservice teachers, and university programs, but the depth and breadth of those advantages varies really across field placements. Third, it improves the methods course by incorporating an applied learning experience within the methods course. If the methods course is created as a space for preservice teachers to learn about and then simulate various pedagogy, what better location to implement the pedagogy highlighted in the methods course than in an actual elementary classroom with the support of the classroom teacher and university faculty?

Stakeholder responsibilities. Having worked through numerous iterations of the applied learning book club model, we have identified several stakeholder responsibilities that we believe help to make this model work. First, we acknowledge the continual stakeholder flexibility in both growing and improving this experience for all students. Part of this responsibility of flexibility requires that we are responsive to students in both settings and adjust the work based on feedback from students in both settings. Second, we have prioritized the development of clear and mutual goals that, while they flex at times based on restraints of time and enrollment, remain fairly constant since our first implementation of book club. Our three shared stakeholder goals are to expand students' experiences with teaching and learning using historical fiction; to increase opportunities for elementary and university students to learn alongside one another rather than in separate spaces; and to improve the curriculum in both the elementary classroom and methods course through the project. Third, we are responsible for upholding the quality of applied learning possible through school-university partnership. To this end, we regularly review our project to assess the preservice teachers' experiences and feedback. We also articulate to our peers

in teacher education who are interested in beginning or expanding an applied learning project three steps that we have found to be essential when considering if a collaboration might be a good fit for applied learning: begin by spending adequate time in each other's spaces; look for common themes between your two spaces that might become the vehicle for the applied learning experience; and build on good work that you are already doing.

Implications and Challenges of Applied Learning in Non-Traditional School-University Partnerships

These models of school-university partnership applied learning are not without challenges, therefore we present the common logistical and political challenges and supports we experienced in creating and sustaining our partnerships across these three projects. Consistent with most applied learning experiences, funding and time were the biggest two hurdles for these projects. Funding was sporadic and not designated for such initiatives by the College or departments, therefore faculty secured university or community funding. While all authors were successful at receiving funding from multiple campus entities (ETEAL, Community Engagement, College of Education), grants were relatively small and as a result, required adaptations to project design and delivery. This exacerbated issues related to time, as the design and implementation of these projects, which occurred over and above the workload of the teachers and faculty members involved, was generally undercompensated. Additionally, some items could not be funded through state monies and were covered out-of-pocket by collaborators.

Time was a large constraint, both in scheduling and implementation. The planning and design for projects occurred before each semester began, including setting dates/times for project execution. This can be difficult in the school setting, as often unplanned activities arise that take precedence over partnership projects viewed as largely optional activities. K-12 teachers' schedules are regimented and they are regularly stretched for time. Adding these extra activities can be burdensome, even when stakeholders enjoy and are invested in the work. Faculty made significant changes to their course sections when compared to sections not involved in the applied learning projects and meeting times had to align with both school and university schedules.

Additional logistical challenges developed in securing K-12 administrative support. It was essential that communication about the reciprocity

of the project and the impact on K-12 students was clear. The STEM and book club projects occurred in the same school, and the principal was generally supportive of this type of work and allowed for teacher flexibility in implementing projects and presenting on their work. Though we worked through unanticipated roadblocks, the principal seemed to see the value for students when teachers were engaged in applied learning projects. Similarly, the dance-film collaboration required multiple meetings with school administrators and teachers to coordinate activities; while positive, teachers and administrators frequently expressed concerns about how university partners would infringe on the school's time and resources.

Implications for Teacher Education

One of the main struggles and goals for teacher education programs is bridging theory to practice and helping students see the connection between coursework and field application. Preservice teachers learn theory and methods in their university coursework and then apply their learning in placement classrooms during field placements and internships. By embedding authentic experiences into coursework, preservice teachers can make concrete connections between course material and classroom implementation. The projects described here model a different approach to applied learning typically seen in traditional school-university partnerships, as the teachers are collaborators (and often catalysts) in the experience, rather than hosts. As a result, this collaboration enabled mutual benefits. In a traditional field experience model, the school students do not usually receive applied learning experience but are usually the "guinea pig" of the teacher education student. In our examples, the K-12 students were involved in active applied learning experience while the preservice teachers were mentored from both the faculty and partnership teachers. Through our partnership and mentor roles as faculty, we also aided in the professional development of the teachers as they concurrently shaped what we did as teacher educators.

Implication for School-University Partnerships

School-university partnerships represent a wide spectrum of work and intensity, from placing field experience students in classrooms to Faculty-in-Residence models. Ideally, an outcome of these partnerships is that they are mutually beneficial for both university and school stakeholders, but in reality, they are often askew, leaning more heavily toward the university (e.g. field placements). Each of the partnerships described here are mutually beneficial to both stakeholder groups,

in part because of the primary role the K-12 teachers played in each project's development. Beyond that, we believe these types of partnerships strengthen the school-university partnership as a whole in that a different kind of value is placed on (and hopefully felt by) the teachers involved in each project. Victoria, the STEM teacher, commented,

> This has really altered my view of the university, as I now see it as a partner in educating students, rather than a separate entity. I feel that the university actually views me as a partner in preparing future teachers instead of just a classroom teacher for an intern placement.

Finally, applied learning within a school-university partnership should generate questions among stakeholders; to this end, we offer the following questions for faculty when establishing a non-traditional model of applied learning: To what extent do we partner in such initiatives? How will we bargain for support in that in between space where faculty are still full time teaching? Do we request course buyout? Do we hope to change the trend of applied learning as "another (unfunded) thing to do" in the methods course?

Implications for Programs

Regarding the implications for programs, we would argue that these partnerships are somewhat intrinsic. We do them and prioritize them because we see the value in them for our students. We urge program faculty to consider the implications of non-traditional applied learning for their programs. We suggest the following initial steps: consider ways to harness current relationships towards these aims while seeking out new relationships that offer reciprocity for stakeholders; seek opportunities beyond traditional field experience; and prioritize what programs are already doing that can be improved with that experience couched within the field rather than the simulated university classroom. So many experiences in the methods course only simulate the classroom experience; applied learning in the field allows the implementation of planning and teaching that otherwise lacks the context of interaction with learners. Finally, partnerships often generate from teachers expressing a need in their classroom, but how can we flip this so that partnerships are stemming from faculty reflecting on their needs and ways they can enhance their teaching with the help from a school partner?

Conclusion

As the three examples in this paper illustrate, applied learning in teacher education has tremendous potential, particularly in regards to fusing methods courses and K-12 classrooms. Though these applied learning experiences are not without challenges, all three are illustrations of what is possible for teacher educators when we think deeper about applied learning experiences and move past the traditional field-experience-as-applied-learning model of teacher education.

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