

## Developing a Learner-Centered Curriculum for a Rural Public Health Program

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Rural communities, compared with their urban counterparts, have higher rates of disease and adverse health conditions, fueling disparities in health outcomes. This encourages the need for effective curricula to engage students and enable them to address such disparate health outcomes as imminent health professionals. Incorporating learner-centered teaching strategies, such as collaboration and power-sharing, into public health (PH) courses can enhance student learning and help faculty enable future health professionals to address needs of rural, underserved populations. Successfully engaging students to explore issues related to rural health disparities in their education, research, and training can thereby advance PH practice. This paper describes the collaborative efforts of five PH faculty, an instructional designer, and administrators to develop a learner-centered curriculum for a newly launched PH program in a rural Midwestern United States (US) university.

### Learner-Centered Teaching

As the pedagogy of academic instruction evolves, learner-centered teaching has become a forerunner in promoting positive academic and professional outcomes in students. The long established first principle of the enterprise of education is that “learning takes place inside the learner and only inside the learner” (Simon, 2001). Therefore, all we can do as teachers is to help the learner to learn (Michael & Modell, 2003). The notion of the learning-centered paradigm in higher education was notably described by Robert Barr and John Tagg in their foundational article “From Teaching to Learning: A New Paradigm for Undergraduate Education” (Barr & Tagg, 1995). Since then learner-centered teaching has been advanced by the work of individuals such as Phyllis Blumberg (Blumberg, 2008), Maryellen Weimer (Weimer, 2013), and Parker Palmer (Palmer, 1998). Learner-centered teaching, or the learning paradigm, posits that faculty members should focus their efforts, not on what they teach, but on what students learn. Common features of courses that displeased students included a lack of perceived relevance and passive student roles (Tobias, 1990). A learner-centered approach will help to combat some of these common issues. Barr and Tagg note that the mission of higher education is not instruction, “...but rather that of producing *learning* with every student by *whatever* means work best” (Barr & Tagg, 1995, p. 13). In this paradigm, it is not the faculty member’s job to “cover” material, but rather, faculty should endeavor to help students “uncover” knowledge and skills (e.g., Felder & Brent, 1999; Weimer, 2013) and to relate those skills to their future professional and even personal goals.

Weimer (2013) describes five ways in which learner-centered teaching departs from the traditional instructional paradigm. First, in learner-centered teaching, the students are the ones who must do the work, the thinking, and the problem-solving in class.

Second, faculty must demonstrate to students *how* to do this work. They must help students develop learning skills, not just content knowledge. Third, students must reflect not only on what they are learning, but also on how they are learning it (i.e., their experience of learning). Faculty should help students move beyond focusing on grades so they can begin monitoring and assessing their own progress. Fourth, in a learner-centered classroom, faculty share power (to at least some degree) with students, thereby giving students some choice and control in the learning experience. Finally, learner-centered classrooms foster community and collaboration among students and encourage students to take responsibility for their own learning (Weimer, 2013).

Learner-centered teaching often includes active learning, but it goes beyond active learning, as evidenced by Weimer’s attention to sharing power and to the importance of promoting metacognition. In the learner-centered classroom, the learner is an empowered, active agent in her own learning (Weimer, 2013). She has the ability to make decisions and influence aspects of her learning, such as topics, means of demonstrating her knowledge or skills, deadlines, and/or class policies. Additionally, both students and faculty in learner-centered classrooms recognize the importance of metacognition. Svinicki (2004) defines metacognition as “...the process of marshalling a learner’s cognitive resources in service of learning” (p. 128). Metacognition entails reflecting on the inputs, processes, strategies, preferences, goals, and products of one’s own thinking and learning. When faculty integrate activities that promote metacognition, such as goal-setting, reflective writing, and self-assessments, students have the opportunity to increase their self-efficacy and to be more invested in their learning experiences. In short, attending to metacognition fosters deeper learning and greater academic achievement (Svinicki, 2004; Young & Fry, 2008).

The aforementioned learner-centered principles informed various faculty development and engagement opportunities to be discussed in this paper. Not only

did the faculty study about learner-centered teaching as a content item, but they also experienced learner-centered teaching as learners themselves. Such approaches afforded faculty various opportunities [e.g., online teaching and learning training, immersion workshops, New Faculty Orientation Week (NFOW), and New Faculty Transition Program (NFTP) workshops] to experience learner-centered teaching as content and lived experience, in order to enhance their teaching and student learning. A common assertion by faculty members is that “we teach the way we were taught” (Adamson et al., 2003; Michael, 2007). The workshops and immersion should prove to help faculty effectively use a more learner-centered approach.

### **Learner-Centered Teaching in a Rural-Focused BSPH Program**

Our institution’s Bachelor of Science in Public Health (BSPH) program began in 2014 with the addition of five new faculty members from various public health backgrounds. These faculty members were charged with developing the BSPH courses as well as the overall objectives of the program. Working in partnership with the university’s Faculty Center for Teaching and Learning (FCTL), these faculty members engaged in internal and external learning opportunities to enhance teaching, promote student learning, monitor the direction of the PH program, and facilitate the development of program outcomes with a learner-centered teaching focus.

This new BSPH program has a special focus on preparing students to work in underserved rural areas. This focus stems in no small part from the institution’s location in a relatively rural region. Rural locations often face a mix of unique challenges and public health issues (Davis et al., 2015; Zeng et al., 2015). Compared with their urban counterparts, common issues among inhabitants of rural communities include higher rates of preventable conditions such as obesity, cancer, diabetes and injury, as well as higher rates of related risky health behaviors such as smoking, physical inactivity, poor diet, and limited use of seatbelts (Eberhardt & Pamuk, 2005; Hartley, 2004). Using the example of obesity in adults, this condition is more prevalent in rural areas than in urban ones (Barnridge et al., 2013; Befort, Nazir, & Perri, 2012). In developing policies and strategies to combat obesity in rural areas, it can be important to develop “broad-based partnerships” with community members, agencies, and organizations (Barnridge et al., 2013). Given that cultural differences and priorities can pose a barrier to successful policy implementation (Barnridge et al., 2013), broad partnerships can help public health professionals identify and understand cultural perspectives and work within existing community structures and beliefs to create feasible mechanisms for change.

As another example, compared to residents of urban regions, individuals who live in rural areas are more likely to avoid seeking health care, even when they believe they might benefit from pursuing care. This may be due, in part, to lack of access to health care providers, lack of self-confidence and self-efficacy, and limited trust in the medical system (Spleen, Lengerich, Camacho, & Vanderpool, 2014). Public health professionals who work in rural regions should be aware of, and understand, such avoidant behaviors and be able to devise strategies to counter them.

As new PH faculty, we hypothesized that students who experience a learner-centered education will be better-equipped to deal with the challenges and needs in rural areas as public health professionals. Learner-centered teaching is likely to benefit all PH students, regardless of where they find employment in the field. However, an examination of the principles of learner-centered teaching reveals how this pedagogical approach has important implications for future rural public health workers. For instance, if students are empowered in the classroom and are able to shape their own learning experiences (as described in Weimer, 2013), not only may they be more likely to attain required learning outcomes, they may also be more likely to recognize the value and benefits of sharing power. In turn, once they enter the field as public health professionals, they may be better prepared to share power with local stakeholders. Additionally, a learner-centered education enables students to grow accustomed to collaboration during their educational experiences (Weimer, 2013). From this, students can learn the benefits of collaboration and practice using strategies to deal with challenges that can arise during teamwork. This experience may enable students to be proactive about building collaborative efforts and developing partnerships once they enter the field. Further, as noted above, such partnerships are especially vital in rural contexts (Barnridge et al., 2013). Finally, a learner-centered approach to teaching challenges students to take an active and reflective role in their own education (Weimer, 2013). This challenge may make students more aware of, and empathetic to, the challenges of engaging rural residents as active participants in their own health care. Moreover, when students engage in the difficult, “messy” tasks of problem-solving and critical thinking in the classroom, and when they are empowered to be agents in their own learning, they are apt to be better able to problem-solve in the field and to contribute to the advancement of health care equity in rural areas.

Successful faculty development is seen as an intentional, ongoing, and systematic process (Guskey, 2000). This process prepared the new PH faculty to use a learner-centered approach to teaching, and faculty were also encouraged to be transparent with students

about how a learner-centered academic experience could better position them to serve as rural public health practitioners. It is also worth noting that this institution lists “opportunity” as one of its core values. Included in this notion of opportunity is the belief that faculty must be committed to their own lifelong learning and professional growth in order to effectively advance student learning, and valuing opportunity for students requires providing students with a relevant education, one that offers appropriate career preparation. A significant goal of intentionally developing a learner-centered program was to create opportunities for students to succeed in the classroom and to give them skills and frameworks that would translate to their professional lives. By pursuing their own professional development, the new BSPH faculty demonstrated commitment to these institutional values and, in turn, to creating impactful learning experiences for students.

In this paper, we will describe the methods used for the development of the PH faculty and program. These methods include external learning opportunities, such as the Certificate for Online Adjunct Teaching (COAT) program (MarylandOnline, 2014), as well as internal opportunities, such as the university’s New Faculty Transition Program (NFTP). Additionally, we will detail teaching products and strategies that resulted from these intensive learning opportunities. These include the development of a curriculum map, use of enhanced syllabi, application of learning theory to the development of PowerPoint slides, and the incorporation of feedback-seeking activities (e.g., Small Group Instructional Diagnoses) into the student learning experience. Finally, we will discuss perspectives of how professional development opportunities affected teaching and students’ learning experiences.

### **Method**

Five new faculty participated in a variety of learning, skills building, assessment, and professional development activities from Summer 2014 through Fall 2015 to develop learner-centered courses for a newly launched PH program at a rurally located Midwestern university. These endeavors culminated in course design, implementation, and assessment activities documented for the 2014-2015 period. Data were also collected from the 2014-2015 cohort of Bachelor of Science in Public Health (BSPH) students (N=15). A flowchart illustrates this timeline of activities (Figure 1).

### **Acclimation**

Before coming to campus, the new PH faculty completed an 8-week COAT course designed to provide online professional development for educators and exploration of online teaching and learning

principles and competencies (MarylandOnline, 2014). Upon arrival on campus, the PH faculty participated in an Immersion Week in August 2014. Over five days, faculty familiarized themselves with the campus and infrastructure of the department, as well as engaged in collaboration to clarify the vision, mission, and competencies of BSPH & Master of Public Health (MPH) programs. Activities included planning and organizing course development, mapping program curricula, determining program assessment measures, and implementing instructional design. This intensive workshop encouraged faculty to develop program outcomes with a learner-centered teaching focus. Throughout this workshop, faculty reflected on the direction of the Public Health program, as well as foundational beliefs that would be essential for the developing courses. Activities were documented in meeting minutes, notes, charts, maps and flowcharts. Previous studies have shown that these types of multiple day workshops result in significant changes in faculty attitude, knowledge, classroom instructional behavior, and interactions with students (Herr, 1988).

Following Immersion Week, PH faculty participated in New Faculty Orientation Week (NFOW) as part of the University’s commitment to intentionally assist faculty in making a smooth and positive transition to their new workplace and to successfully advance students’ development and learning. NFOW goals included enabling faculty to cultivate stimulating, student-centered, and inclusive learning environments, as well as supporting and enhancing faculty engagement in the University community. NFOW activities included conversations with senior University administrators and department colleagues, as well as sessions on “Elements of a Learner-Centered Syllabus,” “Connecting Student Learning Outcomes,” “Assessment” and “Lesson Planning,”

### **Course Design, Professional Development, and Assessment**

During Fall 2014-Spring 2015, faculty attended New Faculty Transition Program (NFTP) workshops sponsored by the Faculty Center for Teaching and Learning (FCTL). NFTP objectives included gaining teaching skills and knowledge, establishing supportive networks of colleagues, and identifying relevant university resources. Workshop topics included, “Active Learning,” “Socratic Questioning,” “Creating Inclusive Classrooms,” and “Using Writing to Learn.” With NFTP assistance, faculty conducted and reflected on Small-Group Instructional Diagnoses (SGIDs), facilitator-led mid-semester formative assessments of students’ learning experiences. As part of the NFTP, faculty engaged in a workshop specifically on the topic of learner-centered teaching. They also had the

opportunity to attend NFTP sessions designed to help them reflect on key ideas in teaching and learning and to collaborate with colleagues on ways to implement these ideas in their classes. Additionally, the NFTP coordinator invited faculty to give input into session topics and used this input to develop program plans and decisions. The goal of this dual-channel approach—situating learner-centered teaching as content and as lived experience—was to enhance faculty members' ability to develop a learner-centered curriculum and to use learner-centered strategies with their own students. FCTL staff provided support to PH faculty in administering, summarizing, and disseminating results of SGIDs. Minutes from NFTP workshops were compiled and summarized.

Monthly BSPH and MPH meetings were also held to conduct the ongoing development of, and to monitor, the progress of program mission, goals, objectives and activities. During these meetings, faculty evaluated efforts to achieve the vision, mission, and competencies of BSPH & MPH programs; provided updates on course development and mapping of program curricula; and shared progress on program assessment measures and instructional design. Minutes from program meetings were compiled and summarized.

Faculty attended professional development workshops during Fall 2014-Fall 2015 (e.g., "Presentation Zen" (Reynolds, 2007), "Clickers," "Deprivileging the Classroom"), designed to develop and enhance teaching methods with the goal of increasing greater motivation for learning and promoting greater satisfaction with school among students. Upon completion, faculty were eligible to receive Professional Development Incentives (PDI) to purchase resources or pursue conference travel that would enhance their teaching and their students' learning. To assess performance, faculty also requested students to complete online IDEA evaluations, which are student ratings of various elements of the instructor and the course (IDEA, 2017). IDEA evaluations were compiled and reviewed at the end of each semester. Faculty were advised to actively encourage students to complete evaluation forms in efforts to attain higher response rates.

## Results

The PH faculty attended the COAT course prior to beginning their teaching appointments in Fall 2014 (Figure 1). This 8-week course exposed new faculty to various teaching methods (e.g., use of discussion boards, group work, use of videos to introduce new topics, combining narrated lectures with written transcripts to enhance clarity, etc.) in order to facilitate a learner-centered environment in an online platform (MarylandOnline, 2014). As faculty were expected to

teach both face-to-face and online courses, many of the learner-centered techniques acquired in the course were transferrable to face-to-face courses as well.

After completing the COAT course and before starting the Fall 2014 semester, the faculty participated in Immersion Week. During this week, faculty shared their thoughts regarding how they each envisioned the mission, vision, and potential program learning outcomes. Faculty then collaborated with an instructional designer to develop the initial curriculum map for the program. During the 2014-2015 year, the program learning outcomes (Table 1) and curriculum map (Table 2) were solidified. Faculty aimed to develop learner-centered and well-rounded program learning outcomes that focused on both discipline-specific content (i.e., population health; public health domains) as well as professional skills necessary for a career in public health (i.e., application of evidence, critical thinking skills and problem-solving skills; communication skills; and leadership skills). Further, while developing their respective courses, faculty were able to align their course learning outcomes with program learning outcomes to the curriculum map so that in each course multiple program learning outcomes were either introduced, reinforced, or mastered. For instance, faculty evaluated overall program and course learning outcomes along with assessment methods to determine the level at which program learning outcomes were met. It was concluded that program learning outcomes would be introduced in 200-level courses, reinforced in all 300-level and some 400-level courses, and mastered by completion of the internship and capstone project.

All faculty also attended NFTP workshops through 2014-2015 and were able to learn new teaching methods, such as Socratic Method questioning, writing as a learning exercise, and academic service learning. Many of the faculty incorporated Socratic questioning into their courses as a means of promoting critical thinking and active learning, thereby enabling students to help shape their own learning and further prepare students for their professional careers. Additionally, some faculty implemented low-risk (ungraded) writing activities in their classes to facilitate candid reflection on course material by students. Other methods used to improve student learning included the use of guest lectures, the provision of choice in course assignments, and the frequent use of group work in order to help build interpersonal and leadership skills among students.

For example, in one foundational PH course, health educators from the local health department visited to discuss ongoing PH activities in the surrounding rural community and potential opportunities for future PH professionals. Another PH course featured guest lectures from culturally diverse PH professionals who

Table 1

*Program Learning Outcomes for Bachelor of Science in Public Health (BSPH) Program, 2014-2015*

1.	Integrate the basic concepts of <b>population health</b> as well as the basic processes, approaches, and interventions that identify and address the salient health-related needs and concerns of populations.
2.	Analyze the interrelationships between the public health <b>domains</b> : (Health Promotion and Education, Epidemiology, Biostatistics, Environmental Health and Safety, Health Administration and Policy) as a basis for entry into public health practice.
3.	Apply current <b>evidence, critical thinking, and problem-solving</b> into the practice of public health.
4.	Apply the basic concepts of <b>public health communication</b> , including effective interpersonal, written, and oral presentation skills, as well as use of electronic technology.
5.	Demonstrate effective <b>leadership skills</b> necessary to succeed in the interdisciplinary and collaborative public health domains.

Table 2

*Curriculum Map of Bachelor of Science in Public Health (BSPH) Program, 2014-2015*

	Population health	Public Health domains	Evidence, critical thinking, problem-solving	Communication Skills	Leadership skills
PUBH 200: Introduction to Public Health	I <sup>1</sup>	I	I	I	I
PUBH 210: Global Health & Public Health	I	I	I	I	I
PUBH 300: Health Promotion & Education	R <sup>2</sup>	R	R	R	R
PUBH 310: Public Health Services in Rural Populations	R	R	R	R	R
PUBH 320: Nutrition & Health	R	R	R	R	R
PUBH 330: Environmental Health & Safety	R	R	R	R	R
PUBH 340: Mass Media & Technology	R	R	R	R	R
PUBH 350: Epidemiology	R	R	R	R	R
PUBH 400: Health Care Services Administration & Management	R	R	R	R	R
PUBH 410: Infection/Communicable Disease Epidemiology	R	R	R	R	R
PUBH 420: Health Program Planning, Implementation & Evaluation	M <sup>3</sup>	M	R	R	M
PUBH 495: Internship & Capstone	M	M	M	M	M

<sup>1</sup>Introduced<sup>2</sup>Reinforced<sup>3</sup>Mastered

discussed the status of the health system and PH challenges in their respective countries of origin. Additionally, the course provided a comprehensive

overview of the relationship between global and public health services. Students were provided the opportunity to explore cross-cultural issues, concerns, problems and

needs of different groups of people in a variety of regional settings. Students worked together in pairs to investigate a case study of a particular global health issue and were then required to take ownership of this learning by presenting their thoughts on the case study to the class. Health problems in developing and developed countries of the world were examined as a foundation for understanding of how other cultures can contribute to the solution of societal problems. This allowed students to recognize and understand how they, individually and collectively as informed citizens, can understand the issues of health and the impact of illnesses on their own lives and regions. To contextualize this learning experience, students engaged in the “Know Your LHD (Local Health Department)” assignment. This assignment required students to identify their local health department. Using course content, students identified socioeconomic elements of health specific to their region. Students also used the burden of disease metrics to describe the health status of their region. The diverse and unique mix of regions reflected by the participating students allowed the opportunity to understand and identify health problems of rural, urban, metropolitan, and suburban regions. The rural focus of this activity enabled students to understand that public health is a balance of upstream advocacy and downstream prevention for improved population health locally and globally.

In another foundational PH class, students were required to develop a proposal for a nutritionally based public health program reasonable for a small rural town similar to the university’s location. During this group project, students discussed the typical nutritionally based problems that are experienced in rural areas, selected one to highlight, and proposed a community based program or other type of solution to combat this problem. Components of each groups’ choice of a nutritionally based public health problem in a rural area included a background of the problem in rural areas, a literature review of other possible programs that have been used in similar populations, and the importance of the chosen topic. Components of the solution included developing all of the details of the program, identifying the target population, determining how the program would be evaluated to determine success or failure, projecting the cost of the program, and listing the advantages and limitations.

Similarly, in another foundational PH class, students were required to work in groups for various assignments throughout the semester, then specifically for a final group presentation project that required groups to choose a contemporary PH issue and then tackle the issue using the perspectives of the four PH domains, with each group member representing a domain; this project promoted active learning by helping students individually apply the perspective of at

least one PH domain and collectively learn how the domains of PH work together in an interdisciplinary manner to address PH issues in the real world. Along the lines of exposing students to real world applications of PH, students in this same PH course were also required to interview a PH professional of their choice for the final paper in order to reflect on what a career in PH may entail in terms of training, responsibilities, strengths, and challenges.

In 2014-2015, in order to obtain anonymous feedback from students regarding their teaching and students’ learning, most faculty participated in the Small-Group Instructional Diagnoses (SGID) process in at least one class, and all faculty received IDEA course evaluations each semester. Research indicates that faculty members are receptive towards the use of instructional consultation on a personal basis, as is conducted in the SGID process (Murray, 1985; Weimer & Lenze, 1994). Learner-centered themes that emerged from the SGID and IDEA feedback included timely and constructive feedback on assignments, respectful and non-patronizing explanation of course concepts and learning outcomes, effective and timely communication with students, timely availability of learning resources, the use of a variety of teaching and assessment methods to promote active learning and critical thinking, organization of course content in course website, instructor availability (in person and via email and phone), and instructor flexibility and understanding of students’ competing demands. For example, in the SGID in one class, one student stated, “Dr. X is extremely helpful and explains assignments and expectations very well and with details.” Another student shared, “I like how Dr. X takes questions which were asked by individual students and addresses her response to the class as a whole, because the questions are very likely to be questions that other students have as well.” In addition, one student remarked, “Dr. X definitely puts our learning needs first.” Some examples of needs that students expressed include, “I would like Dr. X to make assignments available further in advance so I can work ahead and at my own pace” (this was an online course), and, “I would like Dr. X to provide more explanation about what is expected to be learned from the modules.” In the SGID in another class, one student remarked, “I like that Dr. X uses current events that are relevant to healthcare.” Another student stated, “I like that Dr. X has a clear instruction and that most weeks there is 1 assignment due by Sunday.”

Further, IDEA score averages in one of the foundational PH classes were exemplary and illustrated effectiveness at achieving course objectives and learning outcomes as well as promoting a learner-centered environment. Across two semesters, this PH class had an average of 18 students and elicited the following IDEA score averages (out of a 5.0 scale):

Summary evaluation: 4.25, Progress on relevant outcomes: 4.0, and Overall ratings: 4.4. Higher ratings indicate more significant student progress and more positive student experience. One qualitative student response to the IDEA evaluations for this particular PH course was the following:

I have never had a Ferris State University instructor take so much interest in helping me achieve my goals. Dr. X is knowledgeable about this field, and has presented the material in such a way that it was easily understood. I often feel like I have to "decode" the expectations of an assignment/ course navigation as long as I have to work on an assignment, and this was not the case here. I always knew what I needed to do and when.

Another student shared,

Professor X took the time to reach out to me for follow up more than once. She has a wealth of knowledge, and projects that through her lectures. I truly enjoyed taking this course because of her teaching style; she has the ability to personalize her teaching with each individual student.

Additionally, another student stated, "Loved this class. She is an awesome instructor who really knows how to engage the students and make the information easy to grasp ..She is great at explaining topics and ideas and relating them to real life situations so it is easy to see how it is used in everyday life."

Building on feedback obtained from the SGID and IDEA course evaluations, as well as course observations by the Department Head and members of the tenure committees, the faculty engaged in various professional development activities in order to learn how to incorporate new learner-centered teaching strategies into their courses. Some of the faculty attended a "Presentation Zen" workshop (Reynolds, 2007), which provided techniques to transform PowerPoint slides, primarily through the use of pictures and stories rather than text, into starting points for student engagement and active classroom discussion, as opposed to platforms for the traditional lecture format. To increase engagement in their classes, some faculty attended a workshop to develop skills in administering "clickers," interactive technology that gives instructors the ability to pose verbal questions and receive immediate, anonymous feedback from students. Clickers have increased in popularity in recent years, mainly due to their value in engaging students during lectures (Cain & Robinson, 2008; Collins, 2008) and with studies illustrating their use increases student performance on undergraduate science exams (Crossgrove & Curran, 2008; Reay, Li, &

Bao, 2008). After attending the training, faculty used clickers in a PH class by administering an interactive quiz to assess student understanding of health disparities due to factors such as socioeconomic status and geographic location, and they reported the tool allowed for immediate assessment of student learning and helped to increase participation and engagement among students. Some faculty also attended an interactive professional development workshop designed to encourage faculty to examine power, identity, and privilege in teaching and student learning and to apply these experiences to more inclusive teaching practices. Subsequently, faculty applied insights from this learning community by assigning contemplative activities for students to reflect on course learning outcomes and by delivering a regional conference presentation based on this workshop.

Further, PH faculty were able to earn Professional Development Incentives (PDIs) from many of the training activities they attended. The PDIs supported some of the faculty to travel and present their preliminary findings on cultivating a learner-centered curriculum for a rural PH program and building academic-community partnerships to promote PH in rural populations at peer-reviewed national and international conferences, including the American Public Health Association conference and the Hawaii International Conference on Education. These conferences allowed PH faculty not only to obtain feedback regarding their research from colleagues in the field, but also to broaden and inform their own teaching expertise in order to improve student learning.

Lastly, after the first year of working to develop a new learner-centered PH program, some of the PH faculty were inspired from the NFTP workshops and other professional development activities (e.g. PH and Education conferences) to apply for and receive the Ferris Engaged Department Initiative (FEDI) Award, which is a grant from the FCTL to incorporate academic service learning into multiple courses in the Public Health program. Therefore, the concept and application of community engagement through service learning will be scaffolded throughout the PH program curricula, thereby allowing students to apply course concepts in the real world context, build relationships with community members, and help improve the health of the community throughout their progression through the program.

## Discussion

The intentional effort to focus on the student learning experience by engaging in the COAT program, Public Health Immersion Week, NFOW, and NFTP workshops, along with year-round review practices such as the SGIDs and IDEA evaluations, closely

approximate the learner-centered teaching experiences as described by Weimer. The program learning outcomes reflect the intentional emphasis on discipline-specific and professional skills necessary in the practice of public health. This emphasis is particularly important in the training of students as Public Health is delivered through the complex interaction of multiple organizations such as health care providers and insurers, community-based organizations, educational institutions, law enforcement and public safety agencies, and businesses among others (Paul, 2002).

Developing the program learning outcomes with input from all program faculty members served to ensure program learning outcomes aligned with the multidisciplinary nature of the BSPH program. Faculty facilitated an overarching learning experience, as evidenced in the BSPH curriculum map, which is consistent with the program expectations of Public Health.

PH course content and learning activities allowed students to identify and understand how they, individually and collectively, can recognize the determinants of health, including how factors such as geographic location can contribute to disparate health outcomes. Course content and learning activities also afforded students the opportunity to identify the elements of health and the impact of illnesses in their own lives and regions and also contextualize these issues to rural and underserved populations. The integration of learner-centered activities into PH coursework and activities also allowed students to contribute to, and take ownership of, their learning.

Findings from the SGID sessions and IDEA evaluations suggest that students engaged in a lived and learned experience. By engaging in the SGID session, faculty demonstrated the willingness to involve students in shaping their learning experience and, subsequently, the willingness to share power, which is one of the attributes of learner-centered teaching. Allowing students to sufficiently engage in the SGID session early in the semester resulted in feedback with regards to communication, timeliness, and preferred learning environments. This allowed the development of comprehensive syllabi and assessment methods that accounted for the variation in learning preferences and did not limit assessment to the traditional model of mid-term and final examinations. Also, the SGID process specifically invites students to identify what they could do differently to improve their learning. This sort of metacognitive activity challenges students to uncover skills that will not only make them more successful as students, but will also serve them well as practitioners. The high overall scores on IDEA evaluations for the PH courses in instruction during the study period suggest students appreciated the opportunity to reflect on how and what would align well with their learning abilities,

without deviating far off from the average class learning experience. The IDEA evaluations also suggest that faculty successfully demonstrated the application of learned constructs to the students and, consequently, the successful implementation of the learner-centered strategies. Graduates of the undergraduate program are usually in preparation for an entry level position in the practice of PH or on the pathway to professional programs, including higher levels of training (Lee & Friedman, 2015). The learner-centered approach appears to be of particular relevance in the training of PH undergraduates since PH is a collective effort, sometimes referred to as a 'team sport' (Friedman & Lee, 2015), and therefore the responsibility of training institutions to prepare graduates to be successful in the practice of their discipline.

In summary, all of these items are critical because in a newly launched PH program, efforts towards incorporating learner-centered strategies in course development and delivery will help improve program goals of helping future health professionals to address needs of rural, underserved populations. This will ultimately help advance PH practice. While most higher education institutions implement development activities, faculty members working with their colleagues throughout the development of the PH program should sustain longer lasting effects as compared to leader based change alone (Fullan, 1999).

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Appendix

Chronological Flowchart of Development of Learner-Centered Curriculum, 2014-2015

Figure 1  
(Timeline of activities)

