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TEACHING TIPS & TOOLS

Instruction Model Using Collaborative Tools That Promote Competence Attainment in a Health Professions Graduate Program

Rosemary M. Caron, PhD, MPH

Abstract

Competency-based education is widespread in graduate public health and health administration programs. The Council on Education in Public Health (CEPH) amended its criteria for accreditation with more of an emphasis on skills-based curricula as opposed to solely a knowledge-based curricula so graduates would be ready to join the workforce with the requisite knowledge and skills. The purpose of this article is to describe two tools that promote select CEPH competence attainment via collaborative online pedagogical approaches. Specifically, the assignments utilizing these tools were designed to: (1) curate and evaluate primary resources for a selected health issue; (2) develop questions based on the research and information presented; and (3) communicate discipline-specific research in a concise, professional manner to the general population. The foundational CEPH competencies these assignments addressed include: evidenced-based approaches to public health, planning and management to promote health, policy in public health, and communication. As today's health professions students come to our educational programs from diverse professional backgrounds with varying levels of expertise, understanding how research and practice inform each other and how this relationship affects their daily work is an essential element that can be transported from one position to the next over the course of a career.

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Introduction

The Council on Education in Public Health (CEPH) is "an independent agency recognized by the U.S. Department of Education to accredit schools of public health, and public health programs outside schools of public health" (CEPH, 2019a). CEPH's goals are as follows:

> to promote quality in public health education through a continuing process of self-evaluation by the schools and programs that seek accreditation;
>
> to assure the public that institutions offering instruction in public health have been evaluated and judged to meet standards essential for the conduct of such educational programs; and
>
> to encourage—through periodic review, consultation, research, publications, and other means—improvements in the quality of education for public health (CEPH, 2019a)

Although accreditation is not required, many programs and schools of public health seek this recognition that their educational offerings are meeting standards set by CEPH. This standardization of education is important for the preparation of health professionals who will work in various entities at the local, state, national, or global levels to fulfill the public health mission of preventing disease, promoting health, and protecting the health of populations via providing essential public health services to the communities they serve (CDC, 2019).

Bennett and Walston (2015) state that competency-based education (CBE) "is the present and future of public health education." CEPH states that CBE "is an institutional process that moves education from focusing on what academics believe graduates need to know (teacher-focused) to what students need to know and be able to do in varying and complex situations (student and/or workplace focused). CBE is focused on outcomes (competencies) that are linked to workforce needs, as defined by employers and the profession" (CEPH, 2006).

CEPH amended its accreditation criteria in 2016 to more fully reflect a CBE model. Bennett and Walston (2015) report that "as programs have adopted competencies, many have struggled and continue to struggle with actual implementation and curricular redesign." Our Master of Public Health (MPH) program, housed in a traditional health administration department, has worked diligently to adapt to a CBE model by redesigning individual courses and associated instruction that comprise the curriculum. Our approach has been to examine each course individually and critically think about whether the course's objectives align with the MPH program's mission and goals, and to reconstruct course assignments to assist in attaining stated course competen-

cies. Two collaborative tools have been useful in helping us achieve this goal for one of our MPH courses, and these pedagogical approaches are adaptable to graduate and undergraduate public health courses.

Graduate Professional Health Education

The University of New Hampshire (UNH) MPH program (administered by the Department of Health Management and Policy in the College of Health and Human Services) was developed in 2001 to address the shortage of formally educated public health practitioners working in public health in New Hampshire. The UNH MPH program has evolved over the last decade to expand its mission:

> Through instruction, research and service, the mission of the Master of Public Health (MPH) Program at the University of New Hampshire develops public health professionals prepared to enter a collaborative public health workforce, while focusing on improving societal health and health equity (UNH MPH Program, Self-Study, 2019).

Similarly, the student body, albeit small (between 15 and 20 students), has progressed from students who possessed public health experience (95% at the start of the degree program; today, 50%) but not the educational credential to students (25%) who have recently completed a baccalaureate degree and possess little to no professional work experience. Yet, others (25%) possess significant professional experience in areas that are not health-oriented (e.g., education, finance) due to a decision to return to school to change one's career.

To accommodate this distinct student body's work schedule, the UNH MPH program is offered in the evening in a nonresidential setting at a commuter-accessible campus, with each course taken in a four-hour block of time, once a week, for eight weeks. Thus, a student may complete the UNH MPH program by taking two courses each eight-week session for two years with five elective courses taken over the academic year and/or during the summer sessions (Caron, 2019).

Due to the diversity of practical public health experience possessed by the students, the UNH MPH program utilizes pedagogical methods that factor in the learning needs and preferences of this target audience, including: (1) the ability to apply what is learned to one's professional work; (2) flexibility to tailor one's learning to professional interests and career goals; and (3) an adaptable schedule to balance the demands of school, work, and family (e.g., hybrid courses, use of distance learning, and traditional face-to-face learning environments) (Caron, 2019). To help facilitate the role critical thinking plays in analysis, inquiry, and communication, two online tools, Hypothesis and Padlet, were utilized.

The purpose of this article is to describe two tools that promote select CEPH competence attainment via collaborative online pedagogical approaches. Specifically, the assignments utilizing these tools were designed to: (1) curate and evaluate primary resources for a selected health issue; (2) develop questions based on the research and information presented; and (3) communicate discipline-specific research in a concise, professional manner to the general population. The foundational CEPH competencies these assignments addressed include: evidenced-based approaches to public health, planning and management to promote health, policy in public health, and communication (see Table 1; CEPH, 2016).

Table 1.
Select Council on Education in Public Health (CEPH) Foundational Competencies for the Population Health Management Course

Evidenced-based Approaches to Public Health
• Interpret results of data analysis for public health research, policy, or practice (Hypothesis and Padlet Assignment) *
Planning and Management to Promote Health
• Assess population needs, assets and capacities that affect communities' health (Hypothesis and Padlet Assignment)
• Design a population-based policy, program, project, or intervention (Padlet Assignment)
Policy in Public Health
• Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes (Hypothesis and Padlet Assignment)
Communication
• Select communication strategies for different audiences and sectors (Hypothesis and Padlet Assignment)
• Communicate audience-appropriate public health content, both in writing and through oral presentation (Padlet Assignment)

Source: Council on Education in Public Health (CEPH), Accreditation Criteria, Amended 2016, https://ceph.org/about/org-info/criteria-procedures-documents/criteria-procedures/
*Assignment described in the article that addresses the stated competence.

Population Health Management

Population Health Management is a synchronous online elective course in the UNH MPH program. This course typically has no more than five to ten students and meets via Zoom once per week in the evening for a four-hour block for a typical eight-week semester.

Population Health Management is a newer course in the UNH MPH curriculum. The course examines interactions among multiple determinants of health over the population's life course with the aim of developing feasible, effective, and reproducible outcomes to improve the health of populations. Emphasis is placed on the skills necessary to develop cross-sector collaborations, measure outcomes, and improve the quality of care via a critical review of the peer-reviewed literature in this area. Specific case examples of public health and healthcare system integration are analyzed throughout the semester. Table 2 identifies the specific CEPH content covered by this MPH elective course.

Table 2.
Select Council on Education in Public Health (CEPH) Content Areas for the Population Health Management Course

1. Identify the core functions of public health and the 10 Essential Services
2. Explain the role of quantitative and qualitative methods and sciences in describing and assessing a population's health
3. Discuss the science of primary, secondary, and tertiary prevention in population health, including health promotion, screening, etc.
4. Explain the critical importance of evidence in advancing public health knowledge
5. Explain the social, political, and economic determinants of health and how they contribute to population health and health inequities

Source: Council on Education in Public Health (CEPH), Accreditation Criteria, Amended 2016, https://ceph.org/about/org-info/criteria-procedures-documents/criteria-procedures/

The course is taught in an online seminar format utilizing a mixture of teaching methods including lecture, class discussion, group work, and the incorporation of current events to illustrate central themes and course principles. Representative course assignments include:

1) The reading of a nonfiction book, *Fifty Thoughts on the Foundations of Population Health* by Sandro Galea, and written reflections submitted weekly that address recognized achievements and remaining challenges that call for the integration of the public health and healthcare systems. A critical analysis of these successes and the barriers that were overcome or remain were also discussed as these instances provide a foundation from which a new generation of the public

health workforce can build as they work to improve the health of populations worldwide.

2) A cumulative final take-home exam to assess the student's knowledge about population health in an environment that allows for contemplation of course materials, including discussions, and time to engage in the writing process.

Two additional assignments, Population Health Discussion and Population Health as a Public Good, are described in detail in the following sections.

POPULATION HEALTH DISCUSSION: HYPOTHESIS ASSIGNMENT

The primary, peer-reviewed literature is the source for evidence-based practice;thus, today's public health professional must be able to engage in critically analyzing this research to further progress the field by developing new questions to answer and by applying current research to challenging, complex population health issues. To achieve this, Hypothesis, an open source software tool that "enable(s) sentence-level note taking or critique on top of news, blogs, scientific articles, books, terms of service, ballot initiatives, legislation…" (https://web.hypothes.is/about/) was used.

Each student was responsible for leading the discussion of significant population health topics. The instructor selected population health articles from the *American Journal of Public Health*, *Population Health Management*, and *Health Affairs* for the assignment. Each student developed and posted at least two questions per reading (there were two peer-reviewed articles to read each week) to which the remaining students responded. The instructor reviewed the questions posed and monitored the student responses to assure a comprehensive, significant, evolving discussion was occurring. The student responses were required to incorporate references from other peer-reviewed research to help progress the discussion and, therefore, learning. The designated lead student then responded to each student and summarized the week's learning about this particular population health topic. All interactions for this assignment took place in the free version of Hypothesis. The students and instructor discussed the article via Zoom at the end of each assignment period. Topics discussed included the strength of the research, limitations, implications for policy and/or practice, and recommendations for future work. Hypothesis allowed for the students' discussion to occur online, asynchronously and collaboratively. Each discussion with questions, notes, and comments was then posted to Twitter using the course hashtag, #PHP985; hashtag, #population health, hashtag, #UNH MPH Program; and a hashtag that mentioned the article's main focus, for example, #social determinants, or #value based care, to allow for the health professions community to review and respond. Figure 1 illustrates a sample discussion using Hypothesis.

Figure 1.
Hypothesis assignment: Collaborative annotation, query, and response tool

A. Lead student develops and poses questions to peers based on the assigned article. The narrative from which the question is referring is posted above the student's question.

B. Lead student develops and poses another question to peers based on the assigned article.

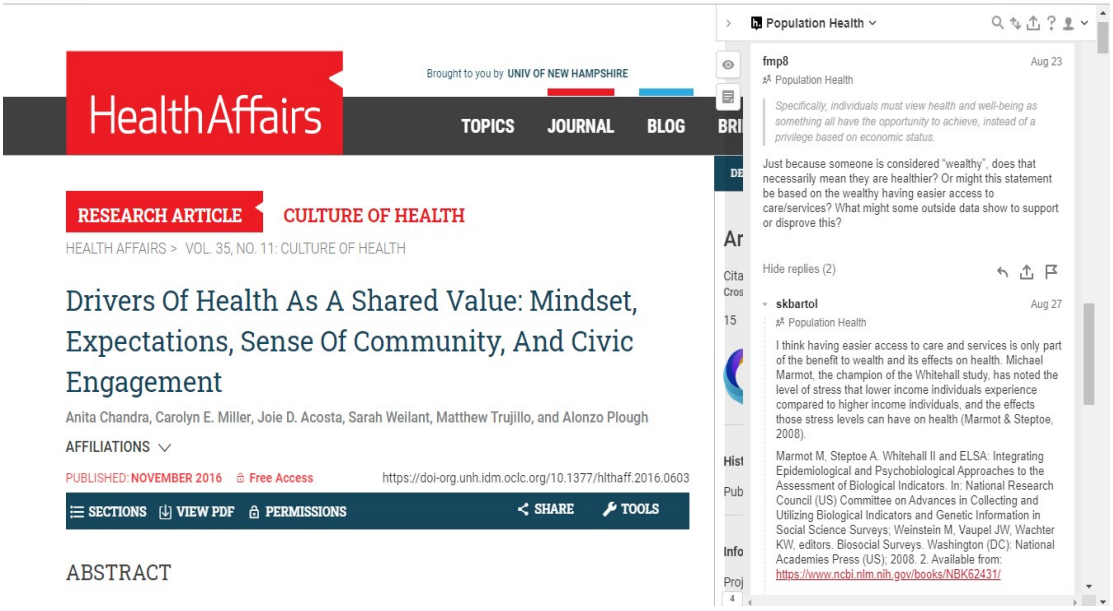
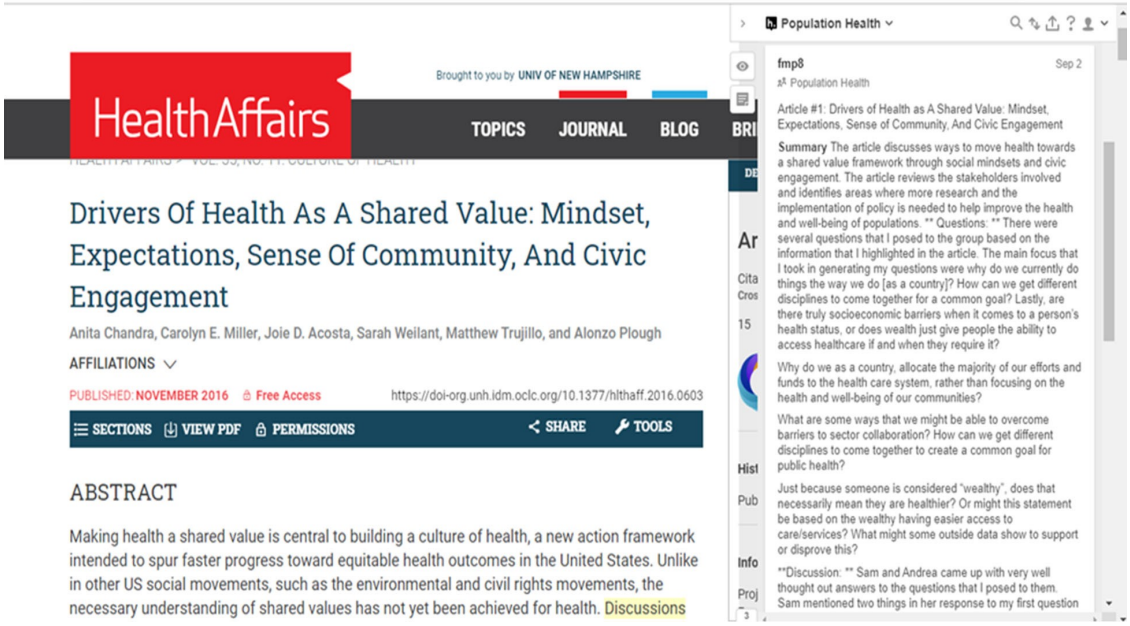


Figure 1.
Hypothesis assignment: Collaborative annotation, query, and response tool

C. Student's summary of article discussion (part 1 of 3):



D. Student's summary of article discussion (part 2 of 3):

Figure 1.
Hypothesis assignment: Collaborative annotation, query, and response tool

E. Student's summary of article discussion (part 3 of 3):

POPULATION HEALTH AS A PUBLIC GOOD: PADLET ASSIGNMENT

Communicating information about the essential service of public health and the role for the healthcare system is an important way to educate the public about health promotion and disease prevention efforts. The act of communicating effectively is a science and an art that stands at the center of the work of health professionals. Each group identified a population health issue about which to inform the public. Padlet, an online collaborative tool, allows for a great deal of information to be displayed and shared via a template (https://padlet.com/features). Padlet was used to allow students to collaborate and collect peer-reviewed research on their identified population health issue. The students then posted their Padlet to Twitter to communicate important population health issues with the public. Representative hashtags for this assignment included: course hashtag, #PHP985; hashtag, #population health, hashtag, #UNH MPH Program; and a hashtag that mentioned the Padlet's main focus, for example, #lead poisoning, or #antibiotic resistance, to allow for the health professions community to review and respond.

Each student group's Padlet consisted of the following researched and cited information:

- Background of the population health issue (e.g., population needs, assets and capacities, etc.)

- Quantitative and qualitative data collection methods that have been used or are appropriate to study this population health issue
- Current state of research on this public health issue used to inform policy or practice
- The organization, structure, and function of healthcare, public health, and/or regulatory systems across national and/or international settings responsible for working on this population health issue
- Proposed strategies to identify stakeholders and build coalitions and partnerships for influencing population health outcomes
- Design of a population-based policy, program, project, or intervention
- Communication of audience-appropriate public health content

All interactions for this assignment took place in the free version of Padlet. The students presented their Padlet via Zoom at the end of the assignment period. Figure 2 illustrates a representative Padlet.

Conclusion

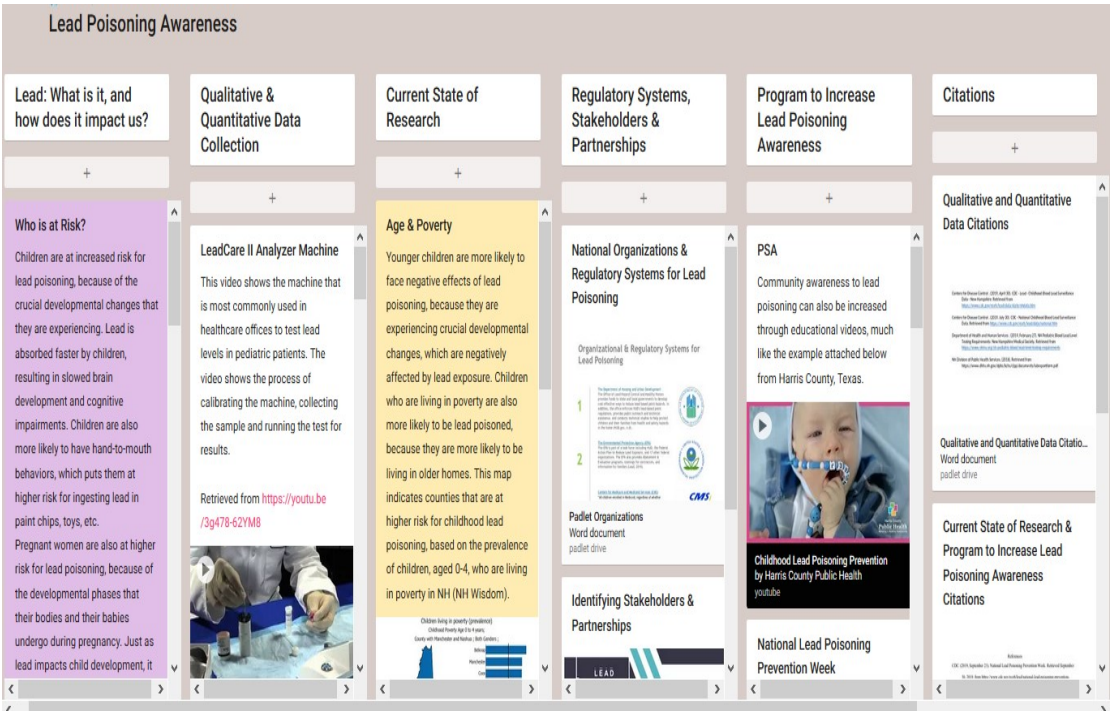
The Association of Schools and Programs of Public Health developed a task force titled "Framing the Future," which conducted a broad review of public health education in the United States. The Framing the Future Task Force, composed of educators from CEPH-accredited schools and programs and public health practitioners, provided guidance "for an overall reframing of the MPH degree" (ASPPH, 2019). Their work resulted in the revised accreditation criteria put forth by the CEPH in 2016 that altered the emphasis from core curricula, or knowledge, public health graduates should have to core competencies, or skills, these graduates should possess at the completion of their programs (Krisberg, 2017).

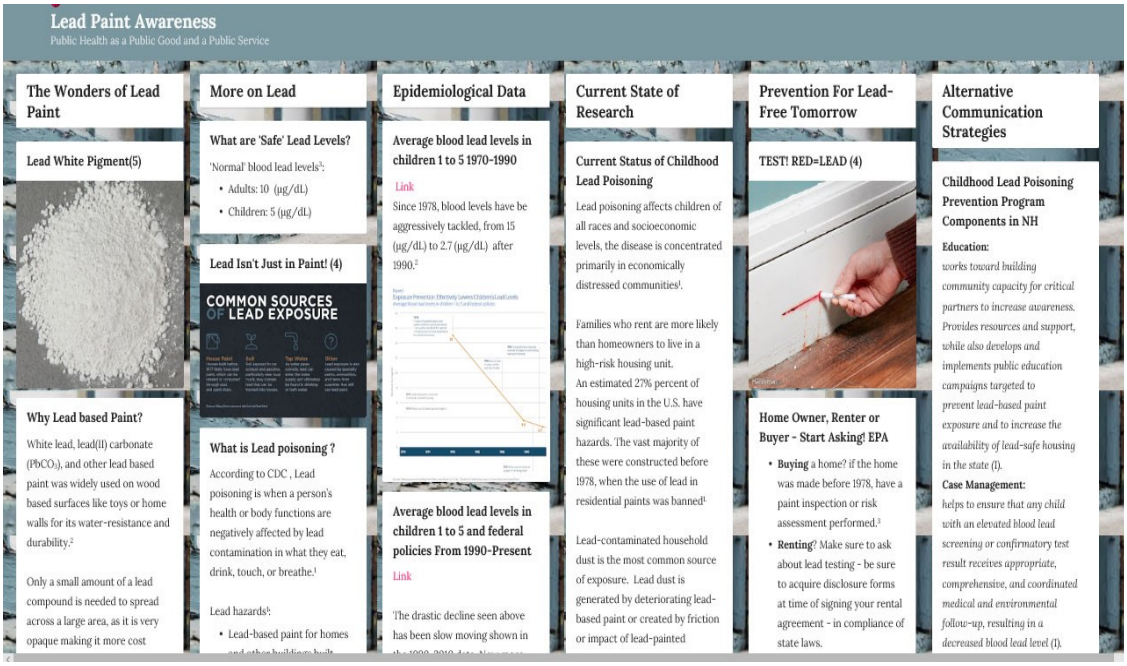
The revised accreditation criteria will require all MPH students to attain 22 competencies across eight domains: evidence-based approaches to public health, public health and health care systems, planning and management to promote health, policy in public health, leadership, communication, interprofessional practice and systems thinking. Within those domains are competencies such as analyzing quantitative and qualitative data using biostatistics, informatics, computer-based programming and software; explaining basic principles and tools of budget and resource management; evaluating policies for their impact on public health and health equity; and selecting communication strategies for different audiences and sectors. Under the revised criteria, every MPH student must be assessed on each of the 22 competencies at least once (Krisberg, 2017).

Although elective courses are exempt from having to map competencies to their program's mission, the exercise of developing competencies to the MPH elective course described in this article is presented to demonstrate how two

Figure 2.
Padlet assignment: Collaborative, research-based, communication tool

Two different Padlets for the same population health issue are shown.
Representative sections of the Padlet are demonstrated due to space limitations.





specific collaborative online tools may be used to attain select competencies for a graduate program (CEPH, 2019b).

The purpose of the work described here is to present two online collaborative tools that can be used to teach graduate public health students how to critically assess practical research in this area and creatively communicate their research on evidence-based practice. First, to analyze research that informs practice and to further progress the field by developing new questions to answer, Hypothesis is described. Second, the act of communicating effectively is a science and an art that stands at the center of our work as health professionals; thus, Padlet is described. Further, the online tools described in this article possess utility in other health-oriented and non–health-oriented graduate courses with competency requirements.

Two key objectives of this course are: (1) distilling a great deal of information pertaining to evidence-based practice via the peer-reviewed literature; and (2) communicating public health messaging in a coherent manner that is constructed from evidence-based research and practice, thus emphasizing the connection between evidence-based research and evidence-based practice. The students used the online, collaborative tools (which they were unfamiliar with prior to this course) to curate, analyze, and query information; prepare comprehensive, referenced questions; and present, concisely and effectively, their researched public health messages—thus contributing to our MPH program's instructional goal of preparing "public health professionals to enter multidisciplinary sectors with the knowledge, skills, and values to improve the population's health" (UNH MPH Program, Self-Study, 2019).

Transferring research-based knowledge into practice is an essential skill for public health professionals. As today's health professions students come to our educational programs from diverse professional backgrounds with varying levels of expertise, understanding how research and practice inform each other and how this relationship affects their daily work is an essential element that can be transported from one health position to the next over the course of a career (Caron, 2019). It is imperative that faculty develop assignments that engage students in becoming competent in the requisite skills. Table 3 illustrates a crosswalk for the Hypothesis and Padlet tools, assignments, their related CEPH competencies, and how these online collaborative tools help develop required skills for the health professional.

Because the majority of students in the class had no experience with either Hypothesis or Padlet, at the conclusion of each assignment, they were asked to reflect on their experience. A few select student comments follow:

- "Hypothesis is a tool that helped me to efficiently annotate research articles. It is an effective tool that I have also started to use in my pro-

Table 3.
Crosswalk of Hypothesis and Padlet Tools, Assignments, CEPH Competencies, and Health Professional Skills

Online Tool	Assignment	CEPH Competencies	Health Professional Skills
Hypothesis	• Evaluate the peer-reviewed literature • Student developed questions and responses • Examine the strength of the research, limitations, implications for policy and/or practice, and recommendations for future work. • Hypothesis allowed for student discussion to occur online, asynchronously and collaboratively.	Evidenced-based Approaches to Public Health • Interpret results of data analysis for public health research, policy, or practice Planning and Management to Promote Health • Assess population needs, assets, and capacities that affect communities' health Policy in Public Health • Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes Communication • Select communication strategies for different audiences and sectors	• Evaluate, Analyze, Critique, Question, Conjecture, Develop, Relate, Interpret, Discuss, Explain, Defend, Communicate
Padlet	• Researched and cited information on a population health issue: • Background of the population health issue (e.g., population needs, assets and capacities, etc.) • Quantitative and qualitative data collection methods that have been used or are appropriate to study this population health issue • Current state of research on this public health issue used to inform policy or practice • The organization, structure, and function of healthcare, public health, and/or regulatory systems across national and/or international settings responsible for working on this population health issue • Proposed strategies to identify stakeholders and build coalitions and partnerships for influencing population health outcomes • Design of a population-based policy, program, project or intervention • Communication of audience-appropriate public health content	Evidenced-based Approaches to Public Health • Interpret results of data analysis for public health research, policy, or practice Planning and Management to Promote Health • Assess population needs, assets, and capacities that affect communities' health • Design a population-based policy, program, project, or intervention Policy in Public Health • Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes Communication • Select communication strategies for different audiences and sectors • Communicate audience-appropriate public health content, both in writing and through oral presentation	• Evaluate, Analyze, Critique, Query, Conjecture, Develop, Relate, Interpret, Discuss, Explain, Design, Communicate

fessional work not only for research articles but also health websites and education materials."

- "I enjoyed learning new tools that will not only help me in other courses in my degree program but also in my everyday work."
- "Both of these tools were useful to not only learn for the benefit of the assignment, but I also really appreciated how we used them to communicate the work we were doing in this course to a broader audience from a diverse educational background."
- "I was nervous about learning new computer-based tools as I have been out of the classroom for a while. However, these tools were easy to learn to the point that I am using them in my other courses."

The faculty instructor's summation following the experience of using two online, collaborative tools in one course that is qualitative in nature, is that it allowed for: (1) a sustainable engagement with the course material in a community of learners who possessed varied educational backgrounds and professional experience, (2) an increase in interaction among peers and communication with the instructor while delving into the current research that informs practice in this field, and (3) an exposure of students to online tools that they can use when they are practicing in the field. Employers and graduate program accreditors expect our graduates to be proficient in the skills utilized in the field. To achieve this foundational approach for students who come to our programs with varied public health experience, the utility of Hypothesis and Padlet can help teach the skills required of the next generation of public health practitioners.

Acknowledgment

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References

Association of Schools and Programs of Public Health (ASPPH). (2019). *Teach and research, framing the future*. Retrieved December 17, 2019, from https://www.aspph.org/ftf-reports/the-mph/

Bennett, C. J., & Walston, S. L. (2015). Improving the use of competencies in public health education. *American Journal of Public Health*, *105*(S1), S65–S67.

Caron, R. M. (2019). Journal Club revisited: Teaching evidence-based research and practice to graduate students in a professional degree program. *Journal of Health Administration Education*, *36*(3), 275–286.

Centers for Disease Control and Prevention (CDC). (2019). *The public health system & 10 essential public health services.* Retrieved December 17, 2019, from https://www.cdc.gov/publichealthgateway/publichealthservices/essentialhealthservices.html

Council on Education in Public Health (CEPH). (2019a). *About: Guiding statements*. Retrieved December 17, 2019, from https://ceph.org/about/org-info/

Council on Education in Public Health (CEPH). (2019b). *FAQs: 2016 criteria—Competencies*. Retrieved December 17, 2019, from https://ceph.org/constituents/schools/faqs/2016criteriafaq/competencies/#9

Council on Education in Public Health (CEPH). (2016). *Accreditation criteria: Schools of public health and public health programs*. Retrieved December 17, 2019, from https://ceph.org/about/org-info/criteria-procedures-documents/criteria-procedures/

Council on Education in Public Health (CEPH). (2006). *Competencies and learning objectives*. Retrieved December 17, 2019, from https://media.ceph.org/wp_assets/Competencies.pdf

Hypothesis. (2019). *About*. Retrieved December 17, 2019, from https://web.hypothes.is/about/

Krisberg, K. (2017). New criteria for accreditation to chart updated course for public health education: Bolstering students. *The Nation's Health*, *46*(10), 1–10.

Padlet. (2019). *About*. Retrieved December 17, 2019, from https://padlet.com/features

University of New Hampshire, Master of Public Health Program, Self-Study. (2019). Retrieved December 17, 2019, from https://chhs.unh.edu/sites/default/files//unh_ceph_self_study9-2017.pdf