Evaluation Theory and Curriculum in the Field of Public Health: The Existing Curriculum Landscape, Views from Course Instructors, and Implications for Public Health Curriculum

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Dedication

I dedicate this work to my husband, Jackson, who has accompanied me through the best and worst of this long, arduous process. It's been said that the Ph.D. is as much a test of endurance as it is intelligence. I could not have endured this the way I did without Jackson's continuous support, encouragement, and love. At the time of this dedication, we have been together for 11 years. Three of those years were spent completing our undergraduate degrees. Two were spent on my Masters. And six were spent writing this thesis. I look forward to many more years of love and companionship unencumbered by school.

Abstract

Evaluation is a critical part of public health programs and has long been identified by public health scholars as a needed skill. As the number of public health undergraduate degrees expands, so does the number of students learning evaluation through a public health lens. Despite the documented need for evaluation in public health contexts and the rapid increase of public health undergraduate degrees, not much is known about the curricular make-up of evaluation courses for undergraduate students. Likewise, no attention has been paid to the presence of evaluation theory in undergraduate public health evaluation courses.

This dissertation examined curriculum for undergraduate public health degrees accredited by the Council on Education for Public Health in the United States and interviewed 10 instructors who teach undergraduate evaluation coursework. Courses were categorized based on their evaluation content and presence of evaluation theory. Instructors were asked about their experiences teaching evaluation to public health undergraduate students and evaluation theory. Evaluation courses were not common in undergraduate public health curriculum. When evaluation courses appeared, they often were limited in scope and focused on evaluation as a specific tool rather than a larger process. The interviews revealed three themes: Teaching evaluation to undergraduate students is challenging, evaluation instruction is important, and there is a lack of evaluation theory at undergraduate levels. More comprehensive evaluation education is necessary to answer calls from the field of public health for more rigorous evaluation. Evaluation scholars can provide resources to help augment evaluation curriculum for undergraduate public health students.

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Chapter 1: Introduction to Evaluation, Public Health, and Evaluation Theory

1.1: What is Evaluation?

Evaluation is a systematic process to determine merit, worth, value, or significance (American Evaluation Association, 2023). Evaluation can provide evidence to help answer questions about programs, such as to what extent the program works or how a program can be improved (Patton, 1997, p. 23). There are many ways evaluators conduct their craft. From rigorous clinical trials to enlightening qualitative focus groups and interviews, the range of tools in an evaluator's arsenal can cover the entire methodological spectrum. Likewise, the contexts in which evaluation can occur are diverse and numerous such as education, public policy, or healthcare. During the course of an evaluation project, the evaluator may draw upon theories and methods from many different fields such as educational psychology, organizational development, and public health. Some common conceptual threads linking evaluations across sometimes vast differences in method and context include: generating knowledge for a specific program or client, empirical inquiry that answers questions for stakeholders, and a critical concern of how the evaluation is used (Wanzer, 2021).

Most people evaluate every day. From weighing options for weekend plans to picking out the most appropriate outfit to wear, evaluation occurs when people weigh various criteria, such as price, quality, and context in order to make a decision (American

Evaluation Association, 2023). Despite evaluation activities occurring since the beginning of time, the formalized field of evaluation in the United States has developed only recently, getting its start from the rapid growth of federally funded social programs in the 1960s (Shadish et al., 1991, p. 22). In 1978, two professional evaluation societies were formed: the Evaluation Research Society and the Evaluation Network. These two societies merged in 1986 to become the American Evaluation Association (AEA), currently the United States' largest evaluation professional organization. Since its formation, the AEA has served as a home for evaluation practitioners and scholars and has provided several guiding documents like the AEA Evaluator Competencies and Guiding Principles for Evaluators.

The distinction between evaluation and research is often blurry. Many evaluators imagine evaluation and research to intersect like a Venn diagram, whereas many researchers understand evaluation to be a subcomponent of research (Wanzer, 2021). As opposed to traditional research, which is conducted for the benefit of other researchers, evaluation is aimed at providing information for stakeholders. Evaluation often pays more attention to the use of their findings (Wanzer, 2021). As such, the practice of evaluation is concerned with the utility of both its processes and results, making evaluation use an integral and grounding feature in the field of evaluation (Alkin & King, 2016). These qualities are especially necessary in the field of public health, which relies on evidence that is often embedded in social contexts that are influenced by political, economic, and cultural forces (Brownson et al., 2009).

Evaluation is also critical in public health since it can advance public health science and the understanding of applied public health interventions by examining successes and failures (Steckler & Linnan, 2002). Evaluation can help to bridge the gap between research and the implementation of research findings (Schulberg & Baker, 1968). Furthermore, evaluation is crucial in public health to ensure that ineffective or harmful interventions are not implemented (Sanson-Fisher et al., 2014). Regardless of field, evaluation can provide robust, rigorous evidence for decision-making, which in an ever-polarizing world, is critical for coming to the defense of successful programs and calling to disrupt ineffective ones.

1.2. What is Public Health?

The fields of public health and evaluation are similar in that there are many different contexts where they claim relevancy, and both often reach into other fields in the execution of their duties (Goodman et al., 2014; Scriven, 1991a). This quality is unlike that of other fields such as medicine, which has strict legal and professional codification of boundaries. In the field of medicine, only licensed individuals may practice; no such infrastructure exists for evaluators.

Just as evaluation occurs in a variety of contexts, public health also has many different domains. Within the field of public health, there are numerous sub-fields such as biostatistics, epidemiology, public policy, environmental health, and community health (Riegelman, 2015, p. 179). Furthermore, these domains of public health are applied in

many diverse scenarios, from community health programming to advising public policy decisions. One definition of public health is the science of preventing disease, prolonging life, and promotion of health through the organized efforts and informed choices of society, organizations, communities, and individuals (Winslow, 1920). More contemporary definitions, such as the one presented by the American Public Health Association (APHA), emphasize the population-level application, stating that public health is the "science-based, evidence-backed field that promotes and protects the health of all people and their communities" (American Public Health Association, 2024).

There are 10 essential public health services outlined by the CDC (Centers for Disease Control and Prevention, 2023):

1. Assess and monitor population health status, factors that influence health, and community needs and assets.
2. Investigate, diagnose, and address health problems and hazards affecting the population.
3. Communicate effectively to inform and educate people about health, factors that influence it, and how to improve it.
4. Strengthen, support, and mobilize communities and partnerships to improve health.
5. Create, champion, and implement policies, plans, and laws that impact health.
6. Utilize legal and regulatory actions designed to improve and protect the public's health.

7. Assure an effective system that enables equitable access to the individual services and care needed to be healthy.
8. Build and support a diverse and skilled public health workforce.
9. Improve and innovate public health functions through ongoing evaluation, research, and continuous quality improvement.
10. Build and maintain a strong organizational infrastructure for public health.

Reflecting the diverse contexts of the field of public health, the public health workforce is also made up of a broad group of people from different backgrounds. An inclusive definition engaged by Gebbie and colleagues defines public health workers as all those responsible for providing the essential public health services regardless of the organization in which they work (Gebbie et al., 2002). A later definition that includes formal education considerations is people who hold a degree (bachelor's, master's, or doctorate) in public health, physicians or nurses who have specialized in public health, or other people engaged in long-standing public health activities at a relevant level of expertise (Otok et al., 2018). This paper will focus on those who hold or are seeking degrees in public health and who have undergone formalized education in the field through a university or other institution of higher education.

The need for an increase in the size of the public health workforce has been growing for the past few decades and has only magnified in the wake of the COVID-19 pandemic. For instance, one research brief predicts state and local public health departments need a workforce increase of 80% to provide a minimum set of public health services to the people they serve (De Beaumont Foundation, 2021). Another study

estimates at least 80,000 new public health professionals are needed at state and local levels (Leider et al., 2023). Partly reflecting this need is a large increase in educational programs in public health at degree-awarding institutions, especially at the undergraduate level. In fact, in 2020, more undergraduate degrees were awarded in public health (18,289) than master's degrees (18,044) - the first time since recordkeeping began (Leider, Resnick, et al., 2022). The increase in formal public health education programs represents a growing amount of public health evaluation teaching and practice.

1.3 Evaluation in Public Health

Regardless of which context public health is operating in, the field of public health requires sound data which is often the result of quality evaluation. The importance of evaluation has been recognized by the field of public health for decades and is reflected in the 10 essential public health services where public health functions are to be improved through ongoing evaluation (James, 1962). Evaluation is explicitly stated as a component of the ninth essential function of public health and could be applied to the other functions as well. As such, evaluation is one of the critical skills public health practitioners of the future will require (Erwin & Brownson, 2017). Evaluation is also a common feature of most public health graduate programs and found in the standards used to accredit university-based public health undergrad and graduate programs (Council on Education for Public Health, 2024a; Joly, 2019). Furthermore, evaluation is usually required by most organizations that fund public health programs (Tremain et al., 2007). The CDC defines the purpose of evaluation as determining the effectiveness of a specific

program or model in order to understand why a program may or may not be working (Centers for Disease Control, 2023).

Evaluation in public health spaces has often taken a wide-ranging approach in order to encompass multiple areas, partly as a response to the many interrelated contexts in which public health professionals practice. This approach is indicative of the foundational principles of public health where, unlike clinical medicine, public health is focused on populations instead of individuals, public service rather than individual service, and a broader perspective on the factors contributing to disease (Riegelman, 2015, p. 185). Reflecting this system-level approach, the CDC's evaluation framework, first introduced in 1999, discusses the applicability of their framework in public health contexts to include "almost any organized public health activity, including direct service interventions, community mobilization efforts, research initiatives, surveillance systems, policy development activities, outbreak investigations, laboratory diagnostics, communication campaigns, infrastructure building projects, training and educational services, and administrative systems" (Milstein & Wetterhall, 1999). The CDC framework has been applied in many contexts from infectious disease control (Jacenko et al., 2023; Logan et al., 2003) and student retention programs (Witsel & Markwell, 2023) to environmental change interventions (Honeycutt et al., 2015) and stress reduction through spiritual healing in veterans (Freeman et al., 2019).

As documented by Leider and colleagues (2022), the rapid increase of formal public health education programs over the past few decades represents a parallel growth in the number of public health students encountering evaluation teaching and practice. As

more and more people are formally trained in public health programs, it is imperative to better understand the quality of existing public health evaluation courses as well as the interplay between current public health practices and the development of new public health evaluation ideas and theories. Failure to do so could result in bad evaluation which, at its best, is ineffective and at its worst can cause harm to program stakeholders.

This dissertation investigated the current state of evaluation education in public health instructional settings with special attention paid to evaluation theory. Specifically, this dissertation examined evaluation courses taught in public health schools and programs. Additionally, interviews with instructors of undergraduate evaluation courses in public health schools and programs were conducted. It is important to note that throughout this dissertation, evaluation is discussed as a process rather than as a specific inquiry method. The process of evaluation could contain various methods such as focus groups or statistical analyses; however, the process of evaluation is larger than individual components. Evaluation theory can often frame practice and guide which methods are used over the course of an evaluation (Christie & Lemire, 2019; Shadish, 1998).

1.4. What is Evaluation Theory and Why Does it Matter?

Theories are general accounts of phenomena that can provide explanations, predictions, and generalizations (Scriven, 1991a). These are different than models where models are less general and narrower in scope (Scriven, 1991a). Theories can be linear and causal. Theories can be nebulous and diffuse. Theories can provide foundations to

entire fields of thought. While theory can be a very broad term, it is not without limit. Sutton and Staw (1995) specify that references, data, variables, diagrams, and hypotheses are not theory by themselves, despite being presented as such in various publications (Sutton & Staw, 1995). Instead, Sutton and Staw contend strong theory is about the underlying processes to understand and predict the underlying systemic reasons for a particular occurrence or non-occurrence. Despite these boundaries, the term theory is still often too large for mutually assured, cross-disciplinary understanding. Some scholars have tried to clarify theory by focusing on theory in the field of evaluation. For example, building on earlier works by Riemer and Bickman (2011), Lemire, Christie, and Nielsen (2020) presented three kinds of theory that often interact with each other in evaluation practice: social science theory, program theory, and evaluation theory. During the course of an evaluation, an evaluator might use program theory to describe the program, social science theory to analyze change or lack thereof, and evaluation theory to guide the sequence of events and facilitate use of the evaluation findings.

Social science theory is reflective of the accumulated knowledge in disciplinary fields and can be viewed as coherent sets of propositions and concepts that serve to describe, explain, and model specific phenomenon (Lemire et al., 2020). Social science theories attempt to provide generalizable and verifiable knowledge about the principles that shape social behavior and while relevant to evaluation, they are not especially concerned with methods for evaluators (Donaldson & Lipsey, 2006). Examples of these theories include theories of planned behavior (Ajzen, 1991) and minority stress theory (Meyer, 2003).

Program theory represents the thinking and assumption of the way in which a particular program works (or doesn't) and is often illustrated through logic models (Lemire et al., 2020). More modest than social science theory, program theory focuses on the nature of the program, intervention, or policy being evaluated (Donaldson & Lipsey, 2006). Rossi (2004) breaks down program theory into three components: the organizational plan, the service utilization plan, and the impact theory. The organizational plan concerns resource configuration and deployment as well as program activity organization (Rossi et al., 2004). The service utilization plan pulls into focus critical assumptions about how and why the program that is the focus on the evaluation will engage its intended recipients. The impact theory component of program theory is the cause-and-effect sequence between specific program activities and the specific social benefits they are to eventually produce.

Lastly, evaluation theory represents the ontological and epistemologically informed prescriptive approaches for how to best conduct an evaluation and is one focus of this paper (Lemire et al., 2020). Said differently in other scholars' words, evaluation theories answer the question of how to conduct evaluations in an adequate and efficient way (Leeuw & Donaldson, 2015). Generally, evaluation theory is prescriptive as it seeks to guide practice (Donaldson & Lipsey, 2006). There are many different evaluation theories that each specify different ways to conduct an evaluation as well as what counts as knowledge for an evaluation. Some examples of evaluation theories are Utilization-Focused Evaluation and Goal Free Evaluation (Patton, 1997; Scriven, 1991b). Briefly, Utilization-Focused Evaluation was developed by Michael Quinn Patton and emphasizes

use of evaluation findings. Through a series of enumerated steps, Utilization-Focused Evaluation guides the evaluator to focus on specific uses and users of its findings. To do this, the primary intended users are identified and engaged in the evaluation early on. This is a different approach than Goal Free Evaluation in which a program's goals or objectives are not known to the evaluator. In Goal Free Evaluation, the evaluator is not hyper-focused on use and does not engage with upstream program stakeholders (Youker & Ingraham, 2014). Unlike Utilization- Focused Evaluation, Goal Free Evaluation does not contain many specific steps to follow, a quality which some scholars have called methodologically neutral (Scriven, 1991a; Youker & Ingraham, 2014).

Many evaluation scholars have tried to make sense of these differing evaluation theories which specify varying ways to conduct an evaluation. In a review of seven different evaluation theorists, evaluation scholars Shadish, Cook, and Leviton (1991) write about some commonalities of evaluation theories. They state that an ideal, but never achievable, evaluation theory would describe and justify why certain evaluation practices lead to particular kinds of results across situations that evaluators confront. They go on to describe five theoretical basis that evaluation theory can address: social programming, knowledge construction, valuing, knowledge use, and evaluation practice. Social programming is the way social programs and policies develop, improve, and change. Knowledge construction refers to the ways researchers learn about social action. Valuing is the way value can be attached to program descriptions. Knowledge use refers to the ways social science information is used to modify programs. Lastly, evaluation practice is the tactics and strategies evaluators follow in their professional work. Different

evaluation theories touch on these different theoretical bases to different degrees. For example, Utilization-Focused Evaluation focuses on the knowledge use component of theory whereas Goal Free Evaluation thoroughly addresses the valuing component. However, a better theory of evaluation touches on all five components (Shadish et al., 1991).

Evaluation theory is important because it provides a common language and identity for evaluators, provides a recognizable signature of the field of evaluation to those outside of it, and represents the topics with which the field of evaluation is concerned (Shadish, 1998). This is especially relevant in the field of evaluation which is young now and was even younger when Shadish made his remarks in 1998. It is important to note that the rationale for why theory matters to the field of evaluation can also be generalized to other fields of scholarship.

Evaluation theory is often developed by evaluation scholars and other academics. Many of those who developed evaluation theories have held or hold academic posts. It is in these academic spaces where much evaluation theory is developed, critiqued, peer-reviewed, published, and disseminated in classroom spaces such as formal evaluation classes. Likewise, when those outside the field of evaluation attempt to build their own evaluation coursework, they might look to those peer-reviewed evaluation scholars for resources. Thus, in order to understand how public health students acquire knowledge of evaluation theory and topics, one must look to formal educational spaces.

1.5 Definitions of Programs and Curricula

There are many definitions of curriculum. Some definitions are very broad such as that by Akyea and Nenad (2024), who write that curriculum includes all forms of learning in all contexts, and Zajda (2024), who conceptualizes curriculum as an umbrella term denoting the totality of the learning experience in schools (Akyea & Radakovic, 2024; Zajda, 2024). Others offer more narrow definitions. Stenhouse (1975) states curriculum is an attempt to communicate the essential principles and features of an educational proposal in such a form that is open to critical scrutiny and capable of effective translation into practice. He continues to state that curriculum, at a minimum, should provide a basis for planning a course (Stenhouse, 1975, p. 5). In simpler terms, curriculum is the what and the why of learning (Strauss et al., 2023) and is a formal structure for organizing it.

In his widely cited 1995 paper, Cuban specifies four types of curricula: official, taught, learned, and tested. Official curriculum is the curriculum set forth and approved by institutions and government. Taught curriculum is what instructors actually choose to teach—choices derived from their own worldviews, like or dislike of the subject, skills, knowledge, and attitudes. The learned curriculum is what learners experience in their learning environment. Lastly, the tested curriculum reflects what learning is assessed or tested (Cuban, 1995). Cuban's definition limits itself to the classroom; that is, he does not consider the application of the curriculum by students beyond testing. Conceptualizing how curricula relate to larger programs, Strauss et. al. (2023) write that the goal of

program design is to create engaging learning environments in which curriculum can be delivered effectively within the bounds of constraints.

LaVelle and Donaldson (2010) use a more operationalized definition of a program in their empirical assessment of university-based evaluation training programs. They define an evaluation program as consisting of multiple courses, seminars, and so on designed to teach evaluation principles and concepts (LaVelle & Donaldson, 2010). In 2021, LaVelle and Donaldson modify their definition and specify an evaluation program as a series of two or more courses with evaluation in the title and an explicit evaluation focus (LaVelle & Donaldson, 2021). Their definition can easily extend to the field of public health where a public health program is a collection of courses that are designed to teach public health principles and concepts. Schools of public health offering degrees in public health must contain public health programs.

With these definitions in hand, public health evaluation courses can be identified by the inclusion of evaluation principles in their official course curriculum. When multiple public health evaluation courses are present, a program of public health evaluation can be discerned. Adding evaluation theory to the mix creates another layer of interaction between curricula which is housed within programs.

It is not clear what evaluation courses are present in public health programs, especially regarding courses that teach evaluation theory. Empirical study of curriculum is necessary to foster an understanding of the landscape of individual courses within larger programs. This is a critical first step for future attempts to influence public health programs should there be room for improvement.

Chapter 2: Existing Literature on Evaluator Education, Public Health Education, and Evaluation in Public Health Education Programs

2.1. Introduction: Existing Scholarship on Public Health Evaluation Theory and Practice

The field of public health does not have scholars that have taken their study of evaluation in public health and gained similar name-recognition as Michael Scriven or Michael Quinn Patton in the field of evaluation. This may be partly due to the government-centric nature of public health services such as health departments and initiatives, whereas numerous evaluators, including private contractors, contend for a finite number of competitive contracts (Picciotto, 2011; Tulchinsky & Varavikova, 2014). That is, whereas the field of evaluation includes many private practitioners that compete for work, much public health work has historically been conducted and/or funded by government organizations instead of private groups or individuals (Himmelstein & Woolhandler, 2016). Reflecting this, public health scholars have often focused on methodological characteristics of evaluations (e.g., statistical power, study designs) rather than treating evaluation as a larger complex process with a beginning, middle, and end (Bernal et al., 2017; Rychetnik et al., 2002). Many organizations that work in public health contexts have generated their own evaluation guides or based their work on guides developed by agencies such as the CDC, leading to the existence of a wide variety of resources.

A 2017 systematic review of academic and grey literature identified 48 guides to public health evaluation. Researchers then categorized the content of the guides into four domains: background, pre-evaluation preparatory work, evaluation processes, and type of evaluation (Denford et al., 2017). The evaluation background domain included content on assessing evidence, common evaluation challenges, and using theory in evaluation. The pre-evaluation preparatory work domain included content on planning the evaluation, pilot testing, and involving stakeholders. The evaluation processes domain included content on defining questions, research design, and collecting data. Lastly, the type of evaluation domain included content on process evaluation, outcomes evaluation, and fidelity. The inclusion criteria for Denford and colleagues' study were that 1) documents must be specific to public health and 2) developed by or for an organization such as the CDC or National Science Foundation. A subsequent qualitative study from Densford and colleagues found that many public health practitioners do not use the guidance documents and/or do not find them useful (Denford et al., 2018). Denford and colleagues suggest this lack of use might be because of the complexity of public health evaluations, the inaccessibility of current guides, as well as misunderstandings about the purpose, content, and audiences of the guides (Denford et al., 2017). Moreover, many of the guides were specific to certain contexts, such as tobacco control interventions, asthma programs, or other chronic disease prevention programs, meaning the guides may not generalize well to other contexts, or that readers might interpret them as not generalizing well to other contexts.

It is important to note the number of evaluation practitioners working in public health is high, with approximately 40% of members of the American Evaluation Association working in public health contexts (Gargani & Miller, 2016). The large number of people working in both fields is not surprising, as one of the 10 essential public health services outlined by the CDC is to improve and innovate public health functions through ongoing evaluation (Centers for Disease Control and Prevention, 2023). Another example of this overlap is represented in the American Journal of Public Health (AJPH). In the first ever contribution to a new section on evaluation methods in AJPH, Spiegelman (2016) illustrated examples of multiple professional communities engaging in overlapping evaluation work of public health programs. Specific examples included health economists conducting impact evaluations and public health program implementers conducting program evaluations (Spiegelman, 2016). This high degree of practitioner crossover speaks to the importance of investigating contexts where these two fields intersect, such as in classrooms where evaluation theory is being taught to public health students so that successful instructional methods and program designs can be shared, and pitfalls avoided. Examining how evaluation principles and concepts are taught in the fields of evaluation and public health can lead to conclusions which can be shared to increase the synergy between both fields.

2.2: Conceptualizing Formal Evaluation Education and Its Limitations

Formalized evaluation education is a relatively recent development that coincided with the professionalization of the field. LaVelle et al. (2023) note that the term "education" can often mean different things depending on the assumptions of the person

using it and offer a more refined definition incorporating LaBelle's 1982 work. LaVelle and his team (2023) define education as a process for lifelong learning with a continuum of three broad categories: informal, nonformal, and formal (La Belle, 1982; LaVelle et al., 2023). Informal education refers to the lifelong process of acquiring knowledge from daily experience. Non-formal education refers to systematic education activities outside of formal frameworks to provide specific types of learning to specific groups of the general population, such as a community recreation class. Lastly, formal education is institutionalized education systems such as schools and universities, both of which are sanctioned by the state (La Belle, 1982). This paper focuses on the formal, university-based evaluator education.

Formal evaluation education can take place at the undergraduate and graduate levels. Formal evaluation education tends to occur in a structured learning environment, such as a classroom, using a faculty-designed syllabus organized around specific learning goals (Tisza et al., 2020). When multiple courses of evaluation are present, in addition to other activities such as seminars, practicums, and so on, an evaluation program is formed (Altschuld, 2002).

In these formal education contexts, evaluation certificate and master's programs experienced the greatest growth from 1980 to 2017 relative to Ph.D. or Ed.D. programs (LaVelle, 2020). In an analysis by LaVelle and colleagues (2020), about 50% of universities in the United States offed evaluation-related courses for undergraduate students. However, as of 2021, LaVelle and Donaldson state it does not appear that any universities award an undergraduate degree with a specialization in evaluation (LaVelle

& Donaldson, 2021). An empirical review of evaluation instruction in undergraduate curriculum in the US found that 72 out of a sample of 80 (92%) universities offered at least one undergraduate course in evaluation with an average of seven courses (LaVelle, Sabarre, et al., 2020). The authors caution that while the raw number of evaluation courses is a good sign for the field, given the tens of thousands of courses offered at these institutions, the overall proportion of evaluation courses remains small and the content of these courses differs vastly between departments. The same review found that the most common focus of the evaluation courses was evaluating programs, followed by policies and products. While it was beyond the scope of the study to do an in-depth review of each course, it appeared that not all courses handled evaluation as a process but instead approached evaluation as an assessment tool; those that did tended to be in schools of education and social science.

Formal graduate evaluation education most often takes the form of master's degrees, though there are also a number of doctorate degrees with a specialization in evaluation. The data suggest that trends in evaluator education are similar to public health degrees in that more universities are offering evaluation-focused advanced degrees than any time in history (LaVelle, 2018; LaVelle & Donaldson, 2021). LaVelle & Donaldson's 2021 research is consistent with their earlier curricular review which found a dramatic increase in the number of evaluation training programs from 2006 to 2008 (LaVelle & Donaldson, 2010).

LaVelle (2020) distinguishes between the master's and doctorate degrees, suggesting that while there is little current differentiation, there are important reasons to

focus master's degrees on the practice of evaluation and doctoral degrees on expanding the knowledge and research base of the field. Indeed, LaVelle and Donaldson (2021) note the importance of evaluation-specific research and theory courses for doctoral students so they can expand the knowledge base of the field via empirical study, a consensus that runs congruent with earlier evaluation scholars such Mark and Christie (Christie, 2003; Mark, 2008).

Moving from examining curriculum prevalence to how the content is taught ex vivo, LaVelle et al. (2020) identified several pedagogical considerations for teaching evaluation including clarifying learning objectives, ensuring students have appropriate prior knowledge (to avoid assumptions), tailoring the course content to the students, engaging students in generating answers (versus only lecture methods), and distributing learning over time (LaVelle, Lovato, et al., 2020). Other pedagogical considerations to teaching evaluation include cooperative learning (a group-based instructional method where students work together to maximize the collective learning experience), and active learning (a strategy that includes opportunity for student reflection through dialogue). Furthermore, for graduate courses in evaluation, self-directed learning is appropriate (Oliver et al., 2008). In regard to the content of the courses, aligning evaluator education programs to the most recent AEA Evaluator competencies can serve to clarify expectations among evaluation professionals and those who are affected by the evaluation work they conduct (LaVelle & Galport, 2020). This approach carries many benefits such as helping to communicate evaluation skills and knowledge to those outside the profession (LaVelle & Galport, 2020).

Strengths of the previous empirical research on formal evaluation education programs, namely LaVelle and Donaldson (2010) and LaVelle et al. (2020), include the methods of the large-scale reviews of curriculum from many different universities and programs. In both 2010 and 2020, LaVelle led a team of authors in conducting reviews of evaluation training programs in the United States. In 2010, they created a sample of all university-based evaluation training programs from 1980 to 2008 and then collected data using Boolean search terms. Following data collection, LaVelle et al. (2020) applied a definition of "evaluation program" that was operationalized as two or more courses with the world "evaluation" in the course title. Then, a deductive analysis process was employed to include programs before descriptive statistics were generated. Building on part of his 2010 work, in 2020, LaVelle and his team employed a similar strategy with the key change of limiting their search to the top 40 private and public schools in the United States (n=80). They used a similar website-based search strategy to identify evaluation courses by searching for keywords like "evaluation" in course descriptions and titles. Their 2020 analysis was more in-depth than LaVelle's 2010 work, since his team also analyzed the intent as it relates to evaluation of the courses they identified in the previous step. This is an asset of LaVelle and colleagues' 2020 paper, specifically, as it provides a method for discerning between evaluation-specific courses and courses that only treat evaluation as a topic within a broader course. Differentiating between the two is important because both may include similar keywords yet have very different treatment of evaluation in the course. In both cases, the large sample frame of the studies serves as a major strength to the validity of their findings.

One limitation of LaVelle and Donaldson (2010) is restricting keyword searches to course titles. Limiting the keyword search to course titles may rule out courses on evaluation that do not include "evaluation" in the course title as well as falsely include courses with the term "evaluation" in their title that do not actually address evaluation in the classroom. In 2020, LaVelle and colleagues addressed this limitation by expanding their keyword search beyond the course title. However, they also used a similar source of data: publicly available university and college bulletins. Additional methods such as a syllabus analysis or interviews with faculty would serve to further understanding of course content (LaVelle, Sabarre, et al., 2020). Finally, LaVelle and Donaldson (2010) only document the presence of evaluation theory as opposed to diving into what type of theory educators teach, and LaVelle et al. (2020) do not measure evaluation theory at all. While not an empirical research study, LaVelle does document the presence of evaluation theory courses in his 2018 directory of evaluation programs (LaVelle, 2018).

2.3: Evaluation Education and Theory

LaVelle and Donaldson (2021) and other scholars (Chouinard et al., 2017; LaVelle & Galport, 2020) identified several opportunities and challenges for university-based evaluation education programs and instructors. One such opportunity is the consistent revisitation of core evaluation program courses. Among other topics such as research on evaluation, they reiterate the importance of courses on evaluation theory as part of the core curriculum because of the integral nature of theory and practice (LaVelle & Donaldson, 2021; Shadish, 1998). Another area identified as an opportunity for growth

is the alignment of curriculum with AEA standards (LaVelle & Galport, 2020). LaVelle and Donaldson (2021) point out that unlike other fields such as law, medicine, or epidemiology, formal evaluation education programs do not design their courses around the competency framework recognized by the largest professional evaluation association in the United States, the American Evaluation Association, despite strong arguments to do so (LaVelle & Galport, 2020). Unfortunately, solely relying on bringing current curriculum in alignment with AEA standards would not likely serve to increase the prevalence and depth of evaluation theory. For example, the word "theory" is only mentioned in the AEA Professional Practice domain where a competent evaluator selects evaluation approaches and theories appropriately, and in the AEA Methodology domain where a competent evaluator uses program theory as appropriate (King & Stevahn, 2020). There is no further explicit discussion of evaluation theory, perhaps because evaluation theory might be more of a conceptual framework than an observable competency in this context.

The absence of explicit evaluation theory in the AEA standards is perhaps reflected in the content of formal evaluation courses where LaVelle's 2020 review of 87 colleges and universities in the United States offering evaluation education programs revealed a diverse evaluation educational landscape with programs housed in multiple departments with a majority focusing on quantitative methods (LaVelle, 2020). LaVelle's review examined courses by title and grouped the courses into thematic content areas. Courses in statistical analysis, experimental, and quasi-experimental design were also common. Less common, however, were courses on evaluation theory. It is possible that

evaluation theory was covered in courses without its explicit mention in the course titles. LaVelle does not offer an explicit definition of evaluation theory in his review and instead examined courses where the keyword of evaluation theory was mentioned but not defined.

In a 2019 situation analysis of evaluator education by Gullickson et al., formal evaluation education programs that serve to prepare individuals for evaluation practice or scholarship were subject to Stufflebeam's Context, Input, Process, Product (CIPP) model (Gullickson et al., 2019; Stufflebeam, 2003). In their analysis, they identified many areas that could be improved. Writing about evaluation theory specifically, Gullickson et al. (2019) found inconsistent definitions in evaluation competency sets and noted that theory may be more emphasized in evaluation-specific programs than other programs with an evaluation component, such as public policy or education. They conclude with a message that improving evaluation education can help improve the integrity of evaluation as an emerging profession (Gullickson et al., 2019).

Evaluation theory is important, though it is not immediately apparent if the hiring organizations' understanding of theory is similar to how it is conceptualized in the field of evaluation. For example, Dewey et al. (2008) surveyed evaluators looking for work as well as employers hiring evaluators and investigated gaps between evaluator education and desired skills from employers. Regarding evaluation theory, 43% of employers sought candidates with evaluation theory skills while 15% of employers indicated evaluation theory to be a major gap in applicants. A possible explanation for this discrepancy identified by Dewey is that employers may value knowledge of theory on a

practical, method-centric standpoint rather than an academic one. Dewey notes that evaluation theory was taught to less than half of the job seekers surveyed, though it is possible this has changed over the years (Dewey et al., 2008). Additionally, it is not clear if Dewey and colleagues provided a definition of theory when reaching out to participants, thus opening the door for different conceptualizations of evaluation theory among employers. More recently, LaVelle (2014) found that employers requested specific approaches to evaluation, such as a participatory method, which may be considered as a demand for a specific theory (Gullickson et al., 2019; LaVelle, 2014).

Compounding the challenge, evaluation theory is not very prevalent and can be difficult to teach. For example, rather than reviewing curriculum directly, King and Ayoo (2020) conducted a review of literature on evaluation curriculum from 1978 to 2018. They grouped research articles into five categories: students, curriculum, instruction, assessment of learning, and evaluation of programs. In their review of 64 articles, they only explicitly mention evaluation theory when they refer to Chouinard et al.'s 2017 work on translating theory to practice in the classroom (King & Ayoo, 2020). In her 2017 work, Chouinard's team documented the theory-practice gap perceived by students. They identified a false binary relationship between evaluation theory and practice which made teaching evaluation to new evaluators difficult (Chouinard et al., 2017). While King and Ayoo (2020) do not specifically mention evaluation theory in their review beyond Chouinard's work, many of their 64 included articles do explicitly mention evaluation theory. For example, King and Ayoo (2020) include an article by Christie, Quinones, and Fierro (2013) which examined evaluation course curriculum content. Christie's team

found that participants' completion of introductory evaluation theory courses was prevalent, but fewer than 25% of participants completed theory-specific courses (e.g., Theory-Driven Evaluation, User-Focused Evaluation, Empowerment Evaluation) (Christie et al., 2013).

Regarding pedagogical aspects of evaluation theory specifically, LaVelle et al. (2020) discussed several educational strategies including role-playing specific theorists, engaging in simulated debates on theories, and exploring differentiation of evaluation theory from methodology. LaVelle and colleagues also discussed assessment techniques where students would be asked to compare and contrast multiple evaluation theories and then reflect on which best match their values and worldviews (LaVelle, Lovato, et al., 2020). Other ways to teach evaluation theory include using logic models to compare different evaluation theories or exploring the evaluation theory tree, a visual depiction of the backgrounds of evaluation theory (Alkin & Christie, 2004; Mark, 2008).

While not focused on how to educate about evaluation theory specifically, Mason's (2022) online study on communication about evaluation in general had several findings that could generalize to classrooms where evaluation theory is taught. Mason (2022) found that using well-known examples of social programs and relevance statements about the purpose of an evaluation served to increase layperson understanding of evaluations. Said differently, an explanation of what program evaluation is that includes information about purpose as well as an example is more effective than a simple definition (Mason, 2022). Mason (2022) writes that instructors of evaluation courses should include activities designed to increase the communication-about-evaluation skills

of students. However, Mason (2022) did not explicitly explore evaluation theory; nonetheless, the importance of communication about evaluation can be extended to communication about evaluation theory. Thus, communicating evaluation theory and including information about purpose plus an example may be more accurate than just positing a theory definition.

Strengths of the existing body of literature on evaluation theory include the variation in approaches, both empirical and philosophical, to its study. Many different approaches exist such as writings on pedagogical considerations of teaching evaluation (Chouinard et al., 2017; LaVelle, Lovato, et al., 2020), Dewey et al.'s (2008) work examining demand-side factors of evaluation theory skills, and LaVelle and Galport's (2020) paper investigating how AEA standards could impact formal evaluation education programs. Furthermore, King and Ayoo (2020) conducted a review of evaluation education programs and contributed more evidence about the limited presence of evaluation theory in the classroom and the literature.

Taken together, these works allude to the demand and challenges of teaching evaluation theory to evaluators in university-based evaluation preparation programs, along with the relative lack of stand-alone evaluation theory classes. It is worth noting that theory may indeed be embedded in coursework at levels not apparent from an analysis of the course description. Additionally, there are many variations on what evaluation theory means. For example, in Dewey and colleagues' (2008) investigation of what evaluator competencies are taught and sought, they borrow words from Shadish, Cook, and Leviton (1991) and describe evaluation theory as prescriptive evaluation

models. Chouinard et al.'s (2017) examination of evaluation theory instruction used a more expansive definition of evaluation theory where evaluation theory can mean different things and does not provide predictive certainty. Instead, they posit that evaluation theory's value to evaluators lies in its prescriptive and descriptive potential. LaVelle, Lovato, et al. (2020) draw upon Shadish (1998) to describe evaluation theory as the activities in which evaluators engage, the value judgments made in practice, and the professional identity of evaluators. Although none of these definitions are drastically different from the others, the slight variations within present opportunities for ambiguity in measurement of the scope of what counts as evaluation theory.

While applicable in many evaluation education contexts, none of the works above investigate evaluation education in public health programs specifically, let alone at a multi-institutional level.

2.4 Public Health Evaluation Education: Existing Research and Limitations

Public health is a growing discipline with more undergraduate and graduate public health degrees awarded now than at any point in history with more than 500 institutions offering public health degrees (Leider et al., 2023). In 2020, undergraduate degrees in public health surpassed master's degrees as the most conferred public health degree in the United States (Leider, Burke, et al., 2022). In 2016, Doctor of Philosophy (Ph.D.) degrees constituted 62% of doctorate level degrees conferred in 2016, with Doctor of Public Health (DrPH) degrees, which are more practice-focused than a

traditional Ph.D., made up nearly 15% (Leider et al., 2018). Many Master of Public Health (MPH) degrees have specializations in areas such as epidemiology, biostatistics, or global health (Foster et al., 2018; Leider et al., 2018).

The Council on Education for Public Health (CEPH) is the accrediting body for schools and programs of public health, including degree programs at the bachelor's, master's, and doctoral levels (Foster et al., 2018). In 2018, 83% of public health degree conferrals were from institutions accredited by the CEPH (Leider et al., 2018). CEPH accreditation is important practically because certain fellowships, grants, and employment opportunities are only open to students who have graduated from CEPH-accredited programs (Council on Education for Public Health, 2024b). Every five years, the CEPH updates and outlines foundational competencies for the public health schools and programs they accredit and requires institutions to map required courses to their competencies as part of the accreditation process (Foster et al., 2018). One of the reasons behind accreditation, Foster and colleagues write, is to ensure compliance with current standards and keeping the field up to date via what they call encouraging excellence through continuous quality improvement (Foster et al., 2018).

Bachelor's Degrees

The CEPH began accrediting standalone bachelor's degree programs in public health in 2016, making accredited bachelor's degree programs a recent phenomenon. As of 2024, there are 28 accredited bachelor's programs in public health (Council on Education for Public Health, 2024c). Prior to 2016, undergraduate public health degrees were only conferred by CEPH-accredited graduate schools (Leider et al., 2023).

Resnick et al. (2018) writes, “undergraduate education typically aims for students to recognize and gain a basic understanding of the underlying concepts in a selected discipline. A bachelor’s degree also provides foundational skills, introduces students to possible career trajectories, and prepares them for graduate studies or professional training, if warranted.” This basic understanding is reflected in both the number and the content of the CEPH foundational competencies for bachelor’s degrees. There are two foundational competencies: 1) to communicate public health information, in both oral and written forms, through a variety of media and to diverse audiences and 2) to locate, use, evaluate, and synthesize public health information (Council on Education for Public Health, 2024a). The second competency explicitly mentions evaluation in the context of evaluating health information, although it is not clear whether this constitutes evaluation as a holistic process or as a limited activity. These competencies are supported by ten foundational domains ranging from basic statistics to concepts of population health. Evaluation is mentioned in one of the ten foundational domains where requirements for a public health major must include courses on the fundamental concepts of project implementation including evaluation.

Master’s Degrees

Unlike bachelor’s degrees in public health, MPH degrees have been the dominant public health degree for more than a century (Riegelman, 2022). The MPH degree as it’s known today was first developed in the early 20th century by an APHA committee that was formed in 1919 to standardize public health education (Leider et al., 2018). Different at the graduate level is a more narrow focus on specialized higher-level skills sets, often

in subareas of a larger discipline such as environmental health, within a larger school of public health (Resnick et al., 2018). This is reflected in the CEPH competencies for MPH degrees. Where there are two competencies for bachelor's students, there are 22 for master's students.

Of the 22 foundational competencies, two mention evaluation. To graduate, MPH students must have competency in selecting methods to evaluate public health programs and evaluating policies for their impact on public health and health equity. Unlike bachelor's degrees, evaluation is acknowledged to have different methods (i.e. strategies). Additionally, MPH students must complete an Integrative Learning Experience (ILE) that demonstrates synthesis of foundational and concentration competencies. The CEPH specifies a program evaluation report as an eligible ILE final written product.

Doctoral Degrees

Doctoral degrees in public health began with the same APHA committee that established early standards for MPH degrees (Leider et al., 2018). At a doctoral level, the CEPH treats DrPH and Ph.D. degrees separately. Whereas Ph.D. degrees are considered academic degrees, DrPH degrees are focused more on public health practice. Doctorate level public health degrees are distinguished from master's level degrees by the completion of doctorate-level coursework and the production of an advanced research project at the end of their program.

Between the DrPH and Ph.D. degrees, the DrPH contains more explicit references to evaluation than the Ph.D.. Evaluation is mentioned in the *Data Analysis* section of the

DrPH foundational competencies, which require that DrPH students to "explain qualitative, quantitative, mixed methods and policy analysis research and evaluation methods to address health issues at multiple levels", "design a qualitative, quantitative, mixed methods, policy analysis, or evaluation project to address a public health issue", and "explain the use and limitations of surveillance systems and national surveys in … evaluating policies and programs" (Council on Education for Public Health, 2024a). For Ph.D. degrees, the CEPH makes no explicit mention of evaluation in the required foundations or domains. The closest it comes in the competence is requiring the identification of the 10 essential public health services, of which evaluation appears in number 9. Additionally, evaluation is alluded to in the competency that requires Ph.D. students in public health to explain the critical importance of evidence in advancing public health knowledge, where evidence is generated by evaluation.

Evaluation Topics Across the Degree Tracks

Across the foundations and competencies for bachelor's, master's, and doctoral public health education, evaluation is not uniformly required nor its own independent competency or foundation. Further compounding the issue, the role of evaluation theory is not clear, especially when an understanding of different evaluation methods appears in MPH and doctorate-level competencies. Reflecting this, the scholarly conversations about evaluation beyond use as a methodological tool are sparse.

While there has been some early literature on how to teach evaluation in public health spaces such as Kronenfeld's 1981 article about educating public health administrators, her paper is more concerned with holistic investigations of entire public

health programs (Kronenfeld, 1981). Likewise, more contemporary scholars have published articles containing teaching approaches and syllabi for public health evaluation (Davis, 2006; Joly, 2019) and case studies of an evaluation fieldwork component of an MPH course (Hurley et al., 2005) but have not taken a program-level approach that spans multiple institutions.

Fierro and Christie's (2011) work represents one of the first investigations into how evaluation is taught in public health programs across institutions. Fierro and Christie's (2011) study included a curriculum review of over 1000 required courses for Master of Public Health (MPH) degrees across 51 institutions that granted MPH degrees from 2006 to 2009. They analyzed the prevalence of specific evaluation topics in evaluation courses taught in schools of public health and found a wide array of evaluation topics covered in courses. The coverage of the topics they identified ranged from 100% of courses covering writing evaluation plans and ethics to less than 60% of courses covering conflict negotiation and meta-evaluations. Their research did not go into more detail as to what specific topics contained. For example, while the authors report that 80-89% of courses include evaluation theory, which specific theories or theorists that are covered was not captured. Additionally, they state that the extent to which MPH students are exposed to evaluation topics is out of alignment with existing competencies requested in public health professional competency sets at the time. Lastly, they found in their survey of textbooks used in evaluation courses for MPH students that many courses use evaluation textbooks whose authors reside within public health academy. The content of these textbooks is an area the authors identified for future research. That is, an analysis of

textbooks could provide insights about which theories students are learning about, even if they are not explicitly described as theories.

Later, Hobson et al. (2019) replicated elements of Fierro and Christie (2011) by examining evaluation course offerings in schools of public health. They expanded upon the previous research by utilizing an additional method: online instructor surveys. Hobson's team (2019) examined evaluation education in schools of public health in 2016-2017. They reviewed 652 evaluation course offerings taught at the MPH level from 156 CEPH-accredited schools and programs, and determined if courses were evaluation courses by searching for the term "evaluation" in titles or course descriptions found on websites and online syllabi. After eliminating courses that were based outside of the United States, did not have English websites, or were found not to focus on program or intervention evaluation, 580 courses were left for final analysis.

Hobson's team (2019) sent surveys to the instructors of the 580 courses included in their review. Of the 580, 128 instructors responded. The purpose of the survey was to determine which evaluation competencies enumerated by Stevahn (2005) were covered in the courses. The competencies were grouped into six domains: professional practice, systematic inquiry, situational analysis, project management, reflective practice, and interpersonal competence. The only explicit mention of theory occurs in the systematic inquiry domain where a single competency about specifying program theory exists. However, this theory is limited in scope as Stevahn defines program theory as the logic model or explanation of the mechanisms believed to make a program effective (Stevahn

et al., 2005). The same vagueness is also found in her later work, see King and Stevahn, 2020.

Through multiple rounds of code assignment combined with the information gained from their instructor surveys, Hobson's team found that many evaluation competencies were introduced. Specifically, professional practice was addressed the most, and reflective practice competency the least; however, depth of coverage is still difficult to ascertain, and may be dependent on the instructor's discretion. In their discussion, Hobson et al. (2019) noted that improved collaboration between the fields of public health and evaluation could help to improve the alignment between existing public health coursework and what skills and knowledge are demanded from professional evaluators. The limitations of Hobson's work include a lack of data from undergraduate programs of public health, the low (22%) response rate from instructors surveyed, and not explicitly addressing the role of evaluation theory in the course offerings. Furthermore, information about textbooks used in courses was collected but not reported.

Hemingway, Douville, and Fierro (2022) examined how academic training prepared MPH graduates for evaluation work by surveying 89 public health practitioners and conducting 17 in-depth follow up interviews. All interview participants indicated that evaluation is a critical function of public health practice, with 92% of survey respondents reporting completion of at least one course with a partial focus on evaluation (Hemingway et al., 2022). Their study suggested a gap between the preparation of MPH graduates and actual evaluation practice (Hemingway et al., 2022). Specifically, some interview participants expressed frustration about the disconnect between their academic

training and practical experience where their courses included content such as clinical trials that were not tenable in community-based evaluation contexts (Hemingway et al., 2022). The findings of Hemingway et al.'s (2022) study align with those of Fierro and Christie (2011) and Hobson et al. (2019) in that all three draw conclusions about an apparent disconnect between evaluation within the field of public health and the broader field of evaluation, most namely, the AEA (Fierro & Christie, 2011; Hemingway et al., 2022; Hobson et al., 2019). Hemingway's (2022) study does not examine curriculum itself at one point in time; rather, curriculum is recalled by the participants. Despite this limitation, the results of this study demonstrate areas that current curriculum can improve upon.

More recently in 2024, Hemingway, Balingit, and Donaldson implemented an evaluation training course for current and recently graduated MPH students from accredited US universities. Using a pre-post survey design, they assessed knowledge, attitudes, and self-efficacy of evaluation skills on a Likert scale (Hemingway et al., 2024). They found a lack of ubiquity of evaluation courses. In their sample only 32% (44 of 138) of MPH students reported taking a program evaluation course, with participants in some specializations (biostatistics, environmental health, and global health) reporting no program evaluation courses. Informed by their findings that 88% of participants had not heard of the AEA, Hemingway and colleagues noted a divide between the disciplines of public health and program evaluation (Hemingway et al., 2024). They did not include questions about evaluation theory, a limitation shared with previous scholarship.

Taken together, these studies paint a picture of possible misalignment between existing public health evaluation curriculum content, public health evaluation practice needs, and the evaluation community outside of public health. This could be partially due to the lack of information about evaluation theory in both MPH and undergraduate curricula. It is important to address this discrepancy now because of the proliferation of public health programs, notably at the undergraduate level, and due to the important role they play in developing and implementing public health interventions. A key factor that limits further research on this gap is the lack of contemporary public health evaluation curriculum review across the ever-increasing number of formal public health education programs, especially in undergraduate areas and in regard to the role and conceptualization of evaluation theory in curriculum (Leider, Burke, et al., 2022).

2.5 Public Health Evaluation Education: Next Steps

Thus far, this paper has examined how the fields of evaluation and public health interact, particularly regarding evaluation theory. A review of evaluation theorists and existing models of public health evaluation suggests the benefit of a synergistic approach to teaching evaluation in public health contexts, especially where theory is concerned; however, the lack of evaluation theory content is concerning.

Since Fierro and Christie (2011) conducted their data collection on evaluation training in schools of public health in 2009, the number of institutions awarding degrees in public health has doubled and the number of undergraduate degrees awarded has

ballooned from under 4,000 to over 17,000 as of 2020 (Leider, Burke, et al., 2022). Updated research on the content of these new courses is overdue, especially from an evaluation theory lens. Building on Fierro and Christie's (2011) and Hobson et al.'s (2019) earlier scholarship of evaluation courses in public health programs, it is important to investigate the curricular context in which public health students learn and become acculturated to public health evaluation theory. While both Hobson's (2019) and Fierro and Christie's (2011) work addressed the prevalence and content of the evaluation curriculum, more focus is needed on evaluation theory content specifically. That is, while Fierro and Christie's (2011) work found that 80-89% of public health evaluation courses cover "evaluation theories," it did not explore which kind of theories were expressly taught in those courses. Additionally, they did not address if theory represented methods courses masquerading as theory courses by not actually covering theory, or if theory was a sub-topic in a larger course (Fierro & Christie, 2011). Methods courses masquerading as theory courses may result in an over-count of the actual presence of evaluation theory as methods courses are more ubiquitous than evaluation theory courses. A potential overcount could lead scholars to incorrectly assume theory was covered adequately in curriculum.

In sum, there is much to learn about the state of evaluation theory in public health education settings, especially since 2009, even if no new measures were developed. Furthermore, neither study included undergraduate programs of public health. Likewise, while LaVelle and colleagues reviewed undergraduate evaluation curriculum in 2020, they did not examine public health schools and programs specifically. They also did not

include additional methods beyond a curriculum analysis (LaVelle, Sabarre, et al., 2020). This limits their work by eliminating opportunities to gain insight into how instructors interact with the curriculum.

Lastly, between Fierro and Christie (2011), Hobson et al. (2019), and LaVelle (2020), only two studies sought input from instructors of the courses they analyzed and none of them did so using interview methodology. Combining methods and topics from evaluation scholarship (see LaVelle, 2020) and public health scholarship (Fierro and Christie, 2011; Hemingway et al., 2019) yields a fertile area of inquiry as well as previously unfilled gaps in knowledge and method.

An analysis of the existing literature highlights several opportunities for new scholarship. Specific research questions addressed in this dissertation are:

- 1A: To what extent is evaluation taught in public health programs at the undergraduate level?
- 1B: What are the characteristics of evaluation courses in public health programs?
- 1C: To what extent is evaluation theory taught in evaluation courses in public health programs?
- 2A: How do instructors of evaluation courses in public health programs conceptualize evaluation?
- 2B: What perspectives regarding the role of evaluation and evaluation theory in public health evaluation courses do instructors of public health evaluation courses hold?

Chapter 3: Methods

In order to answer the aforementioned research questions, I conducted a study adapting methods from various authors (Fierro & Christie, 2011; Hobson et al., 2019; LaVelle, 2020; McAdaragh et al., 2020). Specifically, I used a curriculum categorization analysis process followed by online interviews with instructors. This study builds from previous work through its focus on evaluation theory and undergraduate programs in public health. This dissertation was determined to meet criteria for exemption from IRB review September 16th, 2024 by the University of Minnesota's IRB (STUDY00023181).

The following sections will detail how the research questions were analyzed, the sample, and the source of data among other methodological information. Displayed below, Table 1 shows the research questions and methods side-by-side.

Table 1

Data-Sample-Method-Analysis: Trustworthiness for Research Questions

Research Question	Data Source	Sample	Method	Analysis	Trustworthiness of data and its analysis
1A: To what extent is evaluation included in public health programs? 1B: What are the characteristics of evaluation courses in public health programs?	CEPH-accredited public health school/program websites; publicly-available course titles and descriptions on program pages and/or provost/registrar webpages.	There is no sample. The entire population of CEPH accredited courses meeting inclusion criteria were included in this study.	Online document analysis.	Deductive analysis of course titles and descriptions. Descriptive statistics of the number of courses offered per institution and across institutions.	Triangulation was established by working with a second individual for category construction.

1C: To what extent is evaluation theory taught in evaluation courses in public health programs?					
2A: How do instructors of evaluation courses in public health programs conceptualize evaluation? 2B: What perspectives regarding the role of evaluation and evaluation theory in public health evaluation courses do instructors hold?	Instructors of CEPH-accredited public health school/program courses.	10 instructors of CEPH-accredited public health school/program evaluation courses that are categorized within the "evaluation as a process" group (independent general evaluation + general evaluation in public health context)	Semi-structured one-on-one interviews.	An inductive, multi-cycle coding scheme will supply themes to provide information regarding how evaluation is conceptualized, including: - Perspectives of evaluation - Challenges of evaluation - Other thematic insights	Credibility of interviewees is established by ensuring they are instructors at universities with CEPH-accredited public health programs. Confirmability was established by engaging a second code reviewer.

3.1 Research Questions 1 (Curriculum Review)

The first research question sought to determine the extent evaluation is taught in public health programs at the undergraduate level.

Population

A population-level data list was taken from the CEPH website in August of 2024 (Council on Education for Public Health, 2024c). The population was all CEPH-accredited standalone undergraduate programs, programs, and schools of public health. Each listed program and school of public health was viable and explored when they fit the inclusion and exclusion criteria.

Sample

Sampling was not a part of this research question; data were collected from the entire population which fit the inclusion criteria.

Inclusion criteria: Schools of Public Health and Public Health Programs were included if they were housed in colleges and universities located in either 1) the United States or 2) United States territories such as Puerto Rico. Schools and programs had to have English-language websites and had course catalogs and/or registrar lists of classes that were publicly accessible online. Schools and programs also had to offer a CEPH-accredited undergraduate degree.

Schools or programs that offer only graduate degrees including dual graduate degrees (e.g., MD/MPH or JD/MPH) were excluded. Programs that offered joint/accelerated baccalaureate and master's degrees (BS/MS) were also excluded because of the cross listed course structures and how CEPH considers MS degrees to be conceptually separate entities from baccalaureate ones that lead to predominantly technical and specific job functions like data science or laboratory technician roles (Council on Education for Public Health, 2023).

Methodology

The data collection method to answer this question relied on online document search and analysis procedures based on the publicly available listing from CEPH. Once the list of programs was compiled, each program was listed in an Excel document where the major characteristics of the programs were recorded, such as institution name, direct link(s) to degree page listed by CEPH, and degree(s) offered. The CEPH classifies the programs it accredits as either belonging to a standalone-bachelors program, a program of public health, or a school of public health. This classification was also recorded.

From there, a check occurred to determine if the school or program still housed a CEPH-accredited undergraduate program. Many program websites hyperlinked to their CEPH-accreditation. For those with ambiguous webpages, the CEPH database was queried to determine accreditation. Once a school or program was determined to fit all the inclusion criteria, then gathering the actual curriculum information took place.

For each CEPH-accredited undergraduate degree program, specific degree requirements were accessed and recorded directly from the program website via the "copy" function (Ctrl + C); these data were further augmented by similar information found via the registrar's office or most recently available undergraduate course catalog. Syllabi were not collected because they were rarely publicly available online.

Additionally, specified electives were also reviewed and captured. To be reviewed electives had to have specific names and not generalized such as "any 24 credits outside the school of Public Health". In many cases, these electives were specifically listed by

name and number as approved and recommended electives for Public Health students. Lastly, general education courses were not included in review because although their content could be helpful in public health education, they were not specific to satisfying the requirements of public health degrees. An electronic find command (Ctrl + F) search function technique was employed to search for the term "evalu-"in the course titles and descriptions of required classes and specified electives. This captured conceptually similar terms such as "evaluation," "evaluate," and "evaluating." For all courses that contained an "evalu-" keyword, the course name, course description, course number, and elective status were recorded in the Excel database.

Analysis

A directed, deductive content analysis process was used to identify several salient characteristics from the course titles and descriptions via in vivo key words to categorize the evaluation courses. Adapting methods from LaVelle (2020) and Fierro and Christie (2010), courses were deductively analyzed to categorize it into one of six groups: independent general evaluation, general evaluation in a public health specific field, public health courses that include but do not emphasize evaluation, evaluation of a specific-non-policy or non-program, and an "other" category.

The Independent General Evaluation category represented courses that are evaluation courses first. They were focused on evaluation without strong attachment to another subject. Examples include introduction to evaluation courses or an evaluation methods course. This was often signified in the title of course.

The General Evaluation in a Public Health-Specific Field category included courses that emphasized evaluation methods, theories, perspectives and are attached to a specific field. For example, a course titled "public health evaluation" would fall into this category. The focus of the course still teaches on evaluation and evaluation techniques, just situated in the context of a specific field like public health. Course descriptions may acknowledge multiple types of evaluations and recognize evaluation is not a singular method. Additionally, different keywords associated with evaluation as a process like logic models, goals, stakeholder engagement may also appear. Many of these courses had the word "evaluation" or "program" in their title.

The *Public Health Courses that Include but not Emphasize Evaluation* category included courses that mentioned "evaluation" in their course description, however, upon reading the entire description wholistically, evaluation is not the main emphasis or point of the course. Evaluation may be used interchangeably with research in many of these descriptions. Courses that included evaluation in a litany of other topics fall into this category.

The *Evaluation of a Specific Health Policy or Program Within a Field* category included courses that include evaluation but are narrowly limited to evaluating a specific policy or program. A course on nutrition that includes evaluation of weight management programs would fall into this category. Evaluation is not the focus of the course but is included in the title or description. What evaluation that does occur will be focused on an individual, specific policy or program or aspect of such. Oftentimes in this category, the word evaluation is used as a verb rather than a noun/process.

The *Evaluation of a Specific non-Policy or non-Program* category included courses that include evaluation but in the context of a non-policy or program. For example, a course where students will evaluate literature or evaluate test results fall into this category. Like the preceding category, oftentimes the word evaluation is used as verb rather than a noun/process.

The other category contains courses that did not fall into the previous five categories. Miscellaneous courses that contain evaluation but not in the field of Public Health fell into this category. For example, a course that evaluates music theory would fall into this category.

When mentions of theory are present in the course title or description, an additional round of coding occurred where theory was categorized as social science theory, program theory, evaluation theory, other, or not actual theory. A list of deductive codes is listed below in Table 2. Once codes were established, the distribution of codes was examined across elective status.

Table 2

Curriculum Categories

Keyword	*Brief Description*	*Illustrative Example*
Independent General Evaluation	As close to a pure evaluation course as there is. About evaluation in general without attachment to another specific field.	Fundamentals of **Evaluation**: The course provides students interested in pursuing an undergraduate public health degree with the fundamentals of planning and **evaluation**. Course covers overview of the

		field of **evaluation**, the integrated theory of **evaluation** and logic modeling.
General Evaluation in a Public Health-Specific Field	Evaluation courses that are about evaluation in general public health contexts	Program **Evaluation**: Provides students with foundational knowledge and skills needed to **evaluate** public health programs, interventions or policies. Covers concepts and methodologies of **evaluation** including formative and summative **evaluation**, logic models, research/**evaluation** designs, measurement, and data
Public Health Course that Include but not Emphasizes Evaluation	Public health courses that include evaluation among other topics	Program Design in Public Health: A survey of program design principles, including theoretical foundations, planning, marketing, delivering and **evaluating**.
Evaluation of a specific health policy or program within a field	Public health courses that are about evaluation a specific policy or program. Narrow in focus.	Drugs and Public Health: Examines drug policies and laws, as well as contemporary advocacy efforts impacting drug use, misuse and prevention from a public health perspective. Motivational factors that influence the use of licit and illicit drugs are explored and the psychological, socio-cultural and pharmacological/ biochemical risk factors for abuse or dependence are identified. Systems providing effective drug education and prevention are also **evaluated**
Evaluation of a specific non-policy or non-program	Courses that contain the word "evalu-" but not about evaluation as a noun/process.	Strategies for Weight Control: This course is designed to address the strategies used to assist in reversing the obesity epidemic. Students gain an understanding of the trends of obesity, risk factors associated with being overweight, and chronic disease patterns. Further, strategies of proper weight management are explored on an individual and societal level,

		looking at current diet trends and **evaluating** their health
Other including non-public health, non-evaluation courses	All other courses including non-public health courses.	GIS Applications I: Students are introduced to vector-based geographical information systems (GIS). Topics include overviews of geospatial technologies, spatial analysis, GIS data, system operation, the interpretation of results, and professional practices. The course comprises a weekly lecture and laboratory. Students are **evaluated** with tests, laboratory assignments, and on the basis of a substantial project.
Theory Keywords		
Program Theory	Program theory represents the thinking behind and assumptions of the way in which a particular program works (or doesn't) and is often recognized when logic models are used.	Health Services Administration: Reviews and studies the functions of health services administration across delivery systems. Organizational theory and design are discussed and evaluated. The course provides an overview of the planning, organizing, staffing, influencing, and controlling functions of health services management
Social Science Theory	Social science theory is reflective of the accumulated knowledge in disciplinary fields and can be viewed as coherent sets of propositions and concepts that serve to describe, explain, and model specific phenomenon (Lemire et al., 2020). Examples of these theories include theories of planned behavior (Ajzen, 1991) and	Health Behavior Theory: This course provides an understanding and application of health behavior theory and models that can be applied to behavior change, program planning, and evaluation. Students are exposed to skills and competencies necessary to understand how health behavior theories and models are used in health promotion research and practice.

	minority stress theory (Meyer, 2003).	
Evaluation Theory	Evaluation theory represents the ontological and epistemologically informed approaches and models for how to best conduct an evaluation (Lemire et al., 2020). Said differently in other scholars' words, evaluation theories answer the question of how to conduct evaluations in a thorough and efficient way (Leeuw & Donaldson, 2015).	Fundamentals of Evaluation: The course provides students interested in pursuing an undergraduate public health degree with the fundamentals of planning and evaluation. Course covers overview of the field of evaluation, the integrated theory of evaluation and the logic modeling.
Other Theory Mention	Courses that contain "theory" but not applicable to the above categories.	Air Quality Assessment Lab: This course provides lab-based instruction to students on the technical aspects of conducting air quality exposure assessments. This course covers theory and application of sampling methods used to evaluate chemical, biological, and physical exposures; interpretation of sampling results; and identification of appropriate control strategies to prevent hazardous exposures.

Interrater Reliability

Reliability of course categorization and keyword application was established through correspondence between the author and their advisor at the time of analysis, John LaVelle. Dr. LaVelle has extensive experience researching evaluation theory and

curriculum (LaVelle, 2014, 2018, 2019, 2020). After an initial list of categories was developed and applied, the author met with their advisor to discuss the process, its limits, and future directions. Next, the author constructed additional categories to fill identified gaps, restructured existing categories to ensure non-duplicity and relevance, and recategorized all courses until this final categorization scheme.

3.2 Research Question 3 (Instructor Interviews)

The second step in this research process was to engage with the instructors of the identified evalu- courses to gain a deeper understanding of the curriculum and how it is taught, with a particular focus on how instructors view evaluation, barriers to teaching evaluation, and evaluation theory. Research question 3B, "what perspectives regarding the role of evaluation and evaluation theory in public health evaluation courses do instructors of public health evaluation courses hold", aims to dig into the theory aspects of evaluation education in public health. Specifically, which, if any, evaluation theories are included in courses help inform the gap between evaluation theory and evaluation practice in public health contexts.

Population

The population to answer this research question is all instructors that teach evaluation-specific courses in CEPH-accredited schools or programs of public health that are in the United States that were identified in Phase 1 of this study. This population includes tenure-track, teaching-stream, and adjunct faculty.

Sample

The sample was drawn from the population of educators that teach an evaluation course identified in Phase 1 that was classified as independent general evaluation and general evaluation in public health-specific field.

A sample of 26 courses from the first two evaluation course categories was purposively selected from the list of undergraduate courses. Courses were continuously sampled until 10 interviews occurred. Courses that were identified as evaluation-centric courses by categorization into the top two course categories were reached out to first. For every identified course, multiple attempts were made to determine the instructors of these courses and schedule an interview. When not listed online, emails to department or division heads occurred to request information about current instructors.

In total, 26 courses were selected, and the instructors were contacted during January and February. Of the 26 contacted, 18 responded. Of the 18 who responded, 14 agreed to an interview conversation or to pass on my info to their colleagues. From 14 receptive course instructors, 10 resulted in interviews. Initially, 15 course instructors were contacted and resulted in seven interviews. An additional five were contacted netting one additional interview. A final batch of five additional courses were contacted to result in the final two interviews bringing the total to 10.

Table 3

Course Selection Flow

	Number
Course Instructors Contacted	26
Responses Received	18
Affirmative Responses	14
Interviews	10

Methodology

Qualitative narratives of teaching and learning about evaluation were collected via a semi-structured interview approach. The curricular review about the broad topics covered in the evaluation courses as well as specific questions about how, if at all, theory is discussed in the course informed the interview questions. The interviewer also asked questions about the presence of theory, evaluation, and challenges of evaluation instruction. Additionally, the interviewer provided a brief anecdote about the challenges of moving from a school of public health to a school of evaluation where terminology and theories heavily differed. The anecdote had two purposes: to acknowledge the differences in language and thought between the fields of evaluation and public health, and to segue into larger conversations about theory. If interviewees were not familiar with evaluation theory, the interviewer provided a brief definition and example such as Utilization- Focused Evaluation to gauge if any sounded familiar. Interview questions are listed below in Table 4. Interviews took place February and March of 2025 on Zoom. Interviews were recorded in Zoom. Recording started after introductions and a verbal affirmation of consent to recording. The recorded portion of the interviews ranged in time

from 17 to 42 minutes and averaged 24 minutes in length. Zoom provided a transcript which was cleaned and analyzed further in Nvivo14.

Table 4:

Interview Script

Questions
1. Introductory questions: a. Name/department b. Educational background i. Are you primarily in teaching, research, both equally? c. Courses taught i. How long? ii. Course titles? iii. What students attend these courses (e.g. graduate students, undergraduate students, students seeking a certification, etc.)? 2. Were you able to choose to teach evaluation courses? a. If so, why did you choose to teach evaluation? 3. What's your previous experience with evaluation practice (conducting evaluations)? 4. How would you define evaluation? 5. Evaluation and Research a. How, if at all, are evaluation and research different? b. How, if at all, are evaluation and research similar? c. How, if at all, do evaluation and research interact? 6. What are some challenges in teaching evaluation? a. Any challenges specific to the material vs other logistical challenges? 7. Do you discuss theory in your evaluation courses? 8. In your evaluation courses, do you discuss evaluation theory, specifically? Some evaluation theories are utilization-focused evaluation, empowerment evaluation, theory-driven evaluation. a. If yes: What kinds of theories do you use? Why them? b. If no: Why not? 9. What future directions of evaluation instruction in public health courses do you see? 10. Is there anything else you would like to add?

Analysis

An initial round of a combination in vivo and description coding occurred in March of 2025. For the in vivo coding, specific phrases and words that capture and represent the essence of participant responses were noted in the participants direct words (Saldaña, 2013). For the descriptive coding, basic topics of interview data passages were summarized as short phrases or words (Saldaña, 2013, p. 88). Once descriptive code categories were identified in partnership with in vivo codes, subsequent review and coding of the transcripts resulted in assignment of more participant quotes to descriptive categories. After first-cycle coding took place, codes were mapped to larger emergent categories. Finally, a pattern coding approach resulted in the development of themes from many of the codes (Miles & Huberman, 1994; Saldaña, 2013, p. 210).

Interrater Reliability

Reliability was established through working with a second reviewer. First, a deidentified, uncoded transcript was shared with a second reviewer to check to see if similar codes arose inductively. Several of the first reviewer's codes were identified by the second reviewer albeit in different words. Next, a list of all in-vivo quotes and the codebook developed by the first reviewer was shared with the second reviewer. The second reviewer was instructed to assign codes to the in-vivo codes as guided by the codebook. Interrater percentage agreement was 72%. The Cohen's Kappa value was 0.57 indicating moderate and close to substantial agreement.

Data Displays

From both rounds of coding, themes were synthesized and presented with illustrative in vivo quotes for each theme identified.

Chapter 4: Results

4.1 Curriculum Review Results

Almost all data collection occurred from August to December of 2024. During an audit, another program was added in February of 2025. The CEPH accredits 66 schools, 162 standalone programs, and 29 standalone bachelor's degree-only programs in public health. Two programs are double-listed as both programs and standalone bachelor programs; they were categorized as standalone bachelor programs for this analysis and removed from the program list. A small number (9) of these schools and programs are located outside the United States and were not included in analysis. Of the accredited schools, 45 of 66 (68%) had accredited bachelor's degree programs in public health. Of the accredited programs, 46 of 162 (28%) had accredited bachelor's degree programs in public health.

Table 5:

Inclusion/ Exclusion Flow

	Total	Excluded (Not a state)	Excluded (no bachelor's degree)	Excluded (no accredited bachelor's degree)	Excluded (Other)	Sample Total
Total Schools	66	3	16	1	1	45
Total Programs	162	6	98	7	5	46
Total Standalone Bachelors	29	0	0	0	0	29
Total CEPH Accreditation	257	9	114	8	6	120

Reviewing course titles descriptions for the "evalu-" keyword yielded 431 individual courses. The most common category is "Evaluation of non-programs/non-policies," making up 38% (162) of all courses. "Evaluation of niche/specific programs/policies" follows closely, representing 22% (94) of courses. "PH Courses that include Evaluation" make up 21% (90) of courses. "Evaluation-Emphasis PH Courses" account for 8% (35) of courses. The smallest category, "Independent General Evaluation," represents only 1% (3) of courses. The "Other" category comprises 11% (47) of courses. Overall, 47% (203) of the 431 courses are electives. The breakdown of course categories and elective status is presented in Table 6.

Of the 120 schools and programs of public health, a total of eight (five schools, two programs, and one standalone bachelor's degree program) did not have any required or specified electives that contained an "evalu-" keyword.

Table 6:

Course Categories by Elective Status

Course Categories	Number	% of Total	Elective	% Elective
Independent General Evaluation	3	1%	2	67%
Evaluation-Emphasis Public Health Courses	35	8%	10	29%
Public Health Course that Include but not Emphasizes Evaluation	90	21%	32	36%
Evaluation of Niche/Specific Programs/Policies	94	22%	47	50%
Evaluation of non-Programs/non-Policies	162	38%	87	54%
Other	47	11%	25	53%
Total	431	100%	203	47%

Course content verbosity and richness varied significantly among the course descriptions. Some course descriptions were single sentences and others were multiple paragraphs. The minimum course description contained 6 words. The maximum contained 420 words. The average was 60 words and the median was 50. For reference, this paragraph contains 51 words.

Of the 431 courses, 42 had the word "theory" in their course description and 9 had the word "theory" in their title. Deduplicating resulted in 48 courses mentioning the word "theory" in either their title, description, or both. Reflected as a percentage and excluding

the first category due to small numbers, theory mentions were most common in the Public Health Courses that Include but not Emphasize category with 16% of the courses in this category containing the word “theory”. The least common category for theory mentions was the Evaluation-Emphasis Public Health Courses (6%).

Table 7:

Theory Mention Count by Course Category

Course Categories	Number	Theory Mention	%
Independent General Evaluation	3	1	33%
Evaluation-Emphasis Public Health Courses	35	2	6%
Public Health Course that Include but not Emphasizes Evaluation	90	14	16%
Evaluation of Niche/Specific Programs/Policies	94	13	14%
Evaluation of non-Programs/non-Policies	162	12	7%
Other	47	6	13%
Total	431	48	11%

Of the 48 mentions of theory, most theory mentions fell into the “other” category. That is, theory mentions that were not program, social science, or evaluation theory. Of the three previously identified theory categories, social science theory was the most common with 29%, program theory was present in 10%, and evaluation theory the least common in 8% of the 48 theory mentions.

Table 8:

Theory Category

Course Categories	**Number**	**%**
Program Theory	5	10%
Social Science Theory	14	29%
Evaluation Theory	4	8%
Other	25	52%
Total	48	100%

When broken down across course categories in table 9, the distribution of theory mentions is differentially distributed. For instance, evaluation theory is found in the first two course categories (which represent more evaluation-courses) more than in the other four course categories (which do not represent evaluation-centric courses). Conversely, the "other" theory category is found exclusively in the bottom four course categories and is not present in the top two course categories.

Table 9:

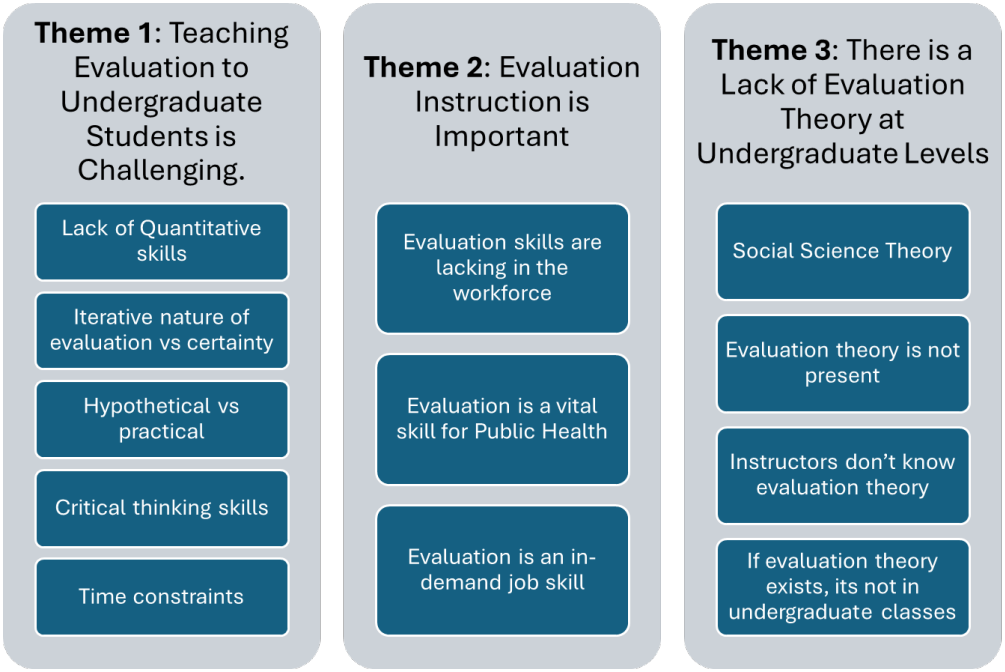
Theory Category by Course Category

Course Categories	Program	SS	Eval	Other	Total
Independent General Evaluation	0	0	1	0	1
Evaluation-Emphasis Public Health Courses	0	0	2	0	2
Public Health Course that Include but not Emphasizes Evaluation	3	4	0	7	14
Evaluation of Niche/Specific Programs/Policies	2	6	1	4	13
Evaluation of non-Programs/non-Policies	0	1	0	11	12
Other	0	3	0	3	6
Total	5	14	4	25	48

4.2 Interview Results

Three important themes composed of 12 codes were generated from analyzing the ten interviews: 1. Teaching evaluation to undergraduate students is challenging, 2. Evaluation instruction is important, 3. There is a lack of evaluation theory in undergraduate level courses. Figure 1 displays themes and constituent codes.

Figure 1: Codes and Themes



4.2.1: Theme 1: Teaching Evaluation to Undergraduate Students is Challenging.

The first theme is teaching evaluation to undergraduate students is challenging. Major issues, specifically, are math, the iterative nature of evaluation, critical thinking skills, and time.

In response to an interview question asking about challenges, many expressed that a lack of quantitative skills in their students posed a barrier to evaluation instruction. One instructor noted, "*I think at least based on what I see is [undergraduate students] struggle with [evaluation] is from a research methodology perspective. Also, from a biostats perspective* (I9)". Similarly, another instructor said, "*getting them to kind of*

relax about the math, I think can be a challenge. (I0)". In more detail another instructor remarked on their desire to embrace this challenge, "*This is our traditionally, our students, who are least quantitative or quantitative, averse. Not that they don't have the skill set and when they give me an opportunity to teach something quantitative to this style of student. I was interested because I think a lot of them think evaluation is feel good stories and so forth. But I wanted to bring in the statistical side of it the study design side of it. The idea of metrics, key performance indicators, goals, all of it rather than just drawing a logic model and saying, we're doing great things.* (I5)". It is worth noting that many of the evaluation courses occur in tracks where quantitative skills are not emphasized as opposed to preclinical tracks that have a heavier quantitative load.

Another challenge is the iterative nature of evaluation. Many undergraduates desire certainty that is not often found in evaluation. One instructor identified how for evaluations, "*the answers aren't that clear* (I 10)" and elaborated, "*There was one that we have a survey that they said, how many days a week do you, you know, engage in moderate exercise. And somebody wrote Jumping Jacks. I was like, Okay. so you got, you know, what's your decisional rule like, are you gonna make that a 0, or are you gonna make it? Are you gonna throw that person out? And I'm like there's no wrong answer. But as a research team, you guys need to come up with these rules and be consistent. And it's like giving them the freedom they're so they're so prescriptive, or they want us so prescribed.* (I 10)". Another instructor was more explicit and stated, "*I think for students, because of the uncertainty of starting evaluation at the very beginning of the planning process and the fact that it does, it is iterative. creates, challenges for them that go*

against their desire for certainty. (I 9)". Even simpler, the same instructor said, *"[undergraduate students] need for certainty creates challenges that they struggle with* (I 9)".

Balancing the hypothetical with the practical in evaluation instruction arose as a further challenge to teaching evaluation to undergraduates. In discussing this tension, an instructor said, "*The trickiest piece of this for the undergrad is that the cart is kind of in front of the horse. We're telling them. We want you to learn how to evaluate a program. We're going to show you all the steps to do it. But we're not really partnering them with a true organization, or someone who has a true evaluation that needs to be done. So it's tricky to show them the merit in a hypothetical.* (I 5)". As another instructor described, "*I think the connecting this, the from the abstract to this, is a real thing for students to realize they're learning tangible hard skills and soft skills is probably the biggest challenge of teaching this course rather than the content* (I 2)". With special reference to undergraduate students, "*It becomes very theoretical. But how can you make it practical. And I think that is the challenge in teaching undergraduates evaluation* (I 6)".

The development of critical thinking skills was also highlighted as a difficulty for teaching evaluation to undergraduates. As one instructor remarked, "*I think that flexibility and just becoming truly independent thinkers is very new to [undergraduate students]* (I 10)". Another instructor said more plainly, "*I think the lack of critical thinking skills has also been a challenge, right? The evaluation along with research, really relies on those critical thinking skills, not just one determining what to evaluate and what makes sense for a given project. But then, how to evaluate it? How do you say? Okay, this is what*

we're going to evaluate. This is our objective. How do we collect the data to answer that question? (I9)". It is reasonable to assume that this issue may be common with many undergraduate students who continue to develop as scholars through their academic careers.

Lastly, time constraints were a common issue highlighted as a challenge for teaching undergraduate students evaluation. The end of the semester approaches very quickly for some instructors. One instructor noted, "*we run out of time really quickly in one semester doing an evaluation course, especially because we have to spend so much time kind of reviewing evaluation concepts and then getting them through pretest and the implementation. And it's like, by the time they're finishing implementation and doing their post test. And we're teaching them how to write up results and conclusions. It's like, okay, guys, it's almost May. You gotta finish this up* (I 10)". Other instructors have trouble fitting all the content into one semester: "*I don't think it's really feasible to teach this course in one semester. I mean to teach a course on evaluation in one semester and expect students to get all of the theory*. (I 7)". While there were some courses that were part of a sequence, most courses stood alone.

4.2.2: Theme 2: Evaluation Instruction is Important.

The second theme to emerge from the interviews with instructors is that evaluation education is important. Instructors highlighted how they perceive a lack of evaluation in the field, a need for more evaluation in the field, and how evaluation prepares students for careers after graduation.

Evaluation is a skill that is lacking for undergraduate students as well as outside the classroom in the workforce—a combination which creates a lack of evaluation all around. One instructor said, "*there wasn't really good evaluation mechanisms in place for a lot of the programs that I worked with. In particular, the nonprofits looked at* work (I 8)". Many students sit for a Certified Health Education Specialist (CHES) exam. Two separate instructors touched on evaluation deficits for undergraduate students specifically: "*I know that students who take the certified health education specialist exam which all of our students are eligible to sit for nationally and in our students evaluation is always lowest scored. They always score the lowest in that area.* (I 9)" and "*I do know from one perspective that evaluation is the lowest scoring area of responsibility. For all you know, people nationally taking the [certified health education specialist exam], but also at our university. They pass but they score lower* (I 3)". Taken together, instructors identified how evaluation skills could be improved.

Instructors discussed how evaluation is a skill vital to public health. Discussing how evaluation is necessary for funding, instructors said, "*You know we know that public health is never, never has enough funding. Right? So we're always working with scarce resources. And we need to prove our effectiveness and efficiency. And the only way we can do that is by sharing our evaluation and our data, our research.* (I 10)", and "*You know, some of the other thing is that, and I tell this to my students is that 10 or 15 years ago, programs would get funded and they might not necessarily always be evaluated or not evaluated rigorously. Nowadays, your funding is really attached to evaluation.* (I 8)". Additionally, another instructor similarly put, "*I try to stress it to students that evaluation*

is critical for funding in a funding scarce environment which gets more scarce by the day. Funding for public health. You really have to make the case that it is valuable. Yeah, we do that by showing that we're meeting our objectives. And it is successful. And we are making progress at changing things. (I 9)". The ability of evaluation to help future public health programs was also touched upon when an instructor remarked, "*if we don't evaluate programs, then you know, we're constantly reinventing the wheel. And so I think you know. And you know just kind of reduces our effectiveness. You know, overall.* (I 7)".

Evaluation is an in-demand skill and evaluation courses prepare students for jobs in order to make a living applying evaluation skills after they graduate. As one instructor put it, "*I am really interested in trying to equip students with some skills that would help them if they were to get a job right out of undergraduate in the public health field. And so I feel like the program planning and evaluation skills are really practical and something they can put on their resume, and it's something that they'll probably use if they go and work in the field* (I 1)". Another instructor explicitly mentioned compensation and said, "*And so I'm always like, [evaluation] is so important. If you guys want to make money. This is where you need to do it right.* (I 9)". Instructors' perception of evaluation as an in-demand skill fits well with the previously identified perception of evaluation deficits in the field.

4.2.3: Theme 3: There is a Lack of Evaluation Theory at Undergraduate Levels

The final theme relates to the absence of evaluation theory in undergraduate evaluation courses. When theory does exist, it is often social science theory. Evaluation

theory is not present, and some instructors are unfamiliar with evaluation theory in general. Evaluation theory may exist at graduate levels.

When bringing up theory, instructors often bring up social science theory like health theories and behavior change theories. As two instructors said, "*Yeah, we really don't introduce [students] to any kind of theories outside of health behavior change theories* (I 10)" and "*We don't do a lot of theory other than if we're looking at kind of a theory of how like a theory of behavior change* (I 4)". A separate instructor listed the theories they discussed in class: "*Behavior change like your very classic behavior change theory, social cognitive theory, health belief model, theory of planned behavior, transtheoretical model, sociological model and a few extras* (I 3)". All the aforementioned theories would be classified as social science theories, not evaluation theory, by Lemire, Christie, and Nielsen's (2020) theory categorizations.

When prompted about evaluation theory specifically, instructors remarked that it was not covered in their classes. Said simply, "Yeah, we really don't introduce them to any kind of theories outside of health behavior change theories (I 10)" and "*I've encountered some of [evaluation theory], like, just in my own reading purposes for research, but none of it really gets integrated into the course* (I 4)". One instructor doubted the usefulness of evaluation theory: "*I feel like a lot of this is for evaluation researchers not for people who are actually doing evaluation as a day to day function. So. No, [evaluation theory] doesn't really feature much into my undergraduate course* (I 6)". Another instructor remarked on the effect evaluation theory has had on their students when did they attempt it and in response to a question about if they included evaluation

theory said, "*Not so much. I tried [teaching evaluation theory] out initially, and you just see glassy eyes, you know* (I 7)." In summary, evaluation theory was by-and-large not covered in the instructors' courses.

Further complicating evaluation theory in undergraduate courses was an impression that some instructors were unfamiliar with evaluation theory themselves. One instructor stated, "*I honestly, I totally forgot that there are evaluation theories* (I 1)" and "*How many people actually use [evaluation theories]? Because I've taken multiple evaluation classes in public health, and they wouldn't. They never talked about that stuff so* (I 1)". A separate instructor congruently noted, "*I haven't received any [evaluation theory] training like that. And we haven't extended that to our students, either, because we didn't get it* (I 10)". Another instructor discussed differences in language and said, "*I had no idea [about evaluation theory]. I did my undergrad in public health too. So I have, you know, six years of that public health learning. And I've taken a bunch of evaluation courses, but the way that it's kind of talked about and taught is a little different. So very interesting* (I 8)". Without an understanding of evaluation theory themselves, instructors do not pass evaluation theory down to undergraduate students.

Lastly, many instructors remarked that while evaluation theory is not taught in their undergraduate classes, it may exist in more advanced courses for graduate students. As one instructor shared, "*Not at the undergraduate level. In my Ph.D. class, we do talk a little bit, especially Patton, and we're actually reading this week a little bit. We'll talk about process evaluation that comes into play. But not so much at the undergraduate level. Yeah, I don't really get into that with them so much* (I 3)". Some instructors

question if evaluation theory is appropriate for undergraduate students: "*But yeah, the theoretical, I mean, I know what you're saying. It's really fascinating. It's interesting. But is it necessary for an undergraduate? I just don't think so. I don't know. Maybe you could tell me otherwise* (I 7)" and "*In our undergraduate level? No. And again, this is intentional and by design from us* (I 5)". Probing the specifics of the graduate courses was outside the scope of this study partly because many of the instructors did not teach both undergraduate and graduate evaluation courses. Regardless, in the case of undergraduate evaluation courses, evaluation theory was not present.

Chapter 5: Discussion

Evaluation has an inextricable role within public health. Public health relies on sound evaluation to justify resource allocation in an environment where resources are becoming scarcer by the day (Dyer, 2025). The presence of evaluation in public health curricula reflects evaluation as a vital public health skill. As the number of undergraduate public health students skyrockets, so too does the number of undergraduate students who encounter evaluation education through a public health lens. This study took the first steps to describe and understand where and how evaluation education in undergraduate public health spaces occurs with special attention to evaluation theory.

This study took, to the best of my knowledge, the first ever census of undergraduate public health courses that focus on evaluation. As part of this study, I gathered all courses that contained mentions of evaluation in their titles or descriptions

from CEPH-accredited schools and programs of public health. Next, I analyzed the characteristics of public health evaluation courses and categorized them by evaluation content. Lastly, I discerned evaluation theory mentions, or lack thereof, from other mentions of theory within the course titles and descriptions. Not stopping at courses, this study also sought to foster understanding of the instructors behind the courses. In asking what they thought about evaluation and public health, several enlightening themes arose from interviews with instructors of public health evaluation courses. In another first, evaluation theory was discussed in the context of public health undergraduate education.

5.1 Public Health Curriculum

Referring to research question 1A, courses with the word evaluation were highly prevalent in CEPH-accredited undergraduate public health programs. All but 8 of 120 had at least one course with the keyword "evalu-" in its title or description. The high prevalence is not surprising as evaluation is explicitly mentioned in one of the CEPH foundational competencies for public health bachelor's degrees (Council on Education for Public Health, 2024a). The high number of courses that contain evaluation keywords is similar to LaVelle and Sabarre's 2020 work which found 72 (90%) of their sample of 80 colleges and universities to also have at least one evaluation course (LaVelle, Sabarre, et al., 2020). They identified 515 courses that appeared to be evaluation-specific or related across 72 colleges and universities. In this study, 112 (93%) of 120 programs and schools of public health had 431 evaluation keyword courses. Like this study and LaVelle and Sabarre, Hobson (2019) also examined evaluation courses. While both this study and Hobson examined schools and programs of public health, Hobson's focused on MPH

degrees whereas this study exclusively focused on bachelor's degrees (Hobson et al., 2019). Hobson found 580 MPH courses that included "evaluation" in their title or course description across 156 schools and programs which is a similar proportion to this study's finding of 431 courses across 120 institutions. It is important to reiterate Hobson only examined MPH programs whereas this study only examined bachelor's programs. Despite this key methodological difference, the similar findings speak to the prevalence of evaluation in formal public health educational contexts regardless of undergraduate status. To summarize, the high prevalence of courses that include evaluation in their title or course description aligns with previous research.

Addressing research question 1B, the characteristics of the evaluation courses were highly variable and lacking in a comprehensive evaluation focus. Only 9% of the courses were evaluation-centric courses, which suggests many undergraduate public health students are not exposed to formal evaluation education in the classroom. A further 21% of courses did include evaluation but did not center policy or program evaluation in its title or description. The courses in this category (Public Health Course that Include but not Emphasizes Evaluation) did not focus on evaluation and, instead, included evaluation in a litany of other topics such as planning, research design, and statistical analysis. Although all the aforementioned topics have a role within evaluation, evaluation as a larger process is not the main focus of the course. While some evaluation exposure may be better than none, adding this 21% category to the previous 9% still paints an alarming picture where less than a third of CEPH-accredited public health bachelor's degree curricula include evaluation courses.

Eclipsing the previously mentioned evaluation courses with 38% of all courses, the most common type of course were courses that include evaluation of a non-policy or non-program. These courses include phrases such as evaluating literature or evaluating data. In this category, the world evaluation was used primarily as a verb and could be interchangeable with "assess".

In general, this study found evaluation education for public health bachelor's students to be sparse. Because this study is the first examination of undergraduate public health curriculum, there is not much existing literature to situate its findings. Instead, other literature has focused on the content and characteristics of MPH curriculum. Nonetheless, this study's findings align with the previous bodies of literature in many ways. For instance, Christie and Fierro reviewed 946 required courses at 51 education-focused MPH programs. They found only 134 of 946 (14%) courses to have a primary or partial focus on evaluation (Fierro & Christie, 2011). Some years later, Hobson and colleagues examined 580 MPH courses and found 26% to be fully focused on evaluation. Although reporting a higher value of evaluation courses than this study of undergraduate curriculum or Fierro and Christie's 2011 study of MPH curriculum, Hobson's 2019 study of MPH curriculum similarly found less than a third of courses have a focus on evaluation. There were no clear patterns as to which courses were elective or non-elective.

Answering research question 1C, theory in general was not commonly addressed in the courses, and evaluation theory specifically was hardly present. While 11% (n=48) of all courses included the word "theory" in their title or description, only 8% of that 48

(n=4) of the courses that include theory can be categorized as evaluation theory. The most common theory category was “other”, and the most common specific theory mention was social science theory with 29% (n= 14). There was no explicit mention of any discernable evaluation theory or theorist such as Michael Q. Patton’s Utilization Focused Evaluation. The absence of theory aligns with previous research by LaVelle (2020) who found evaluation courses with theory content to be less common than other thematic areas like statistical analysis or experimental design. This finding disagrees with Fierro and Christie’s 2011 study which found 80-89% of MPH evaluation courses included evaluation theory. Notably, Fierro and Christie’s study was limited to MPH curriculum and ascertained the 80-89% number from instructors’ self-report— both drastically different methodological decisions from this study.

5.2 Instructor Interviews

Regarding research question 2A, the interviews suggest that instructors conceptualize evaluation as difficult to teach to undergraduates. This study found a theme that evaluation is a challenging subject. One specific aspect of the challenge was balancing the hypothetical vs the practical in evaluation education. This finding directly corroborates Chouinard’s work where she examined evaluation students and found “frustra[tion] and disillusionment as they wrestled with what they perceived as a disturbing gap between theory and practice” (Chouinard et al., 2017). Like Chouinard’s study, this study also heard from instructors who reported their students having challenges with the hypothetical aspects of evaluation instruction. Using the same words to highlight this challenge, one instructor said, “*it's tricky to show them the merit in a*

hypothetical (I 5)". Similarly, King and Ayoo's 2020 review of 64 evaluation education articles concludes by positing evaluation education can be seen as a glass-half-full situation and a meaningful opportunity waits for understanding effective evaluation education programs. King and Ayoo's findings corroborate this study's finding of the challenging nature of evaluation education. LaVelle et al. (2020) also support this study's finding by deeming teaching evaluation to be a challenging activity. They write the key to making teaching evaluation less challenging is pedagogical preparation (LaVelle, Lovato, et al., 2020). Assuming the converse to be true, a lack of pedagogical preparation would make teaching evaluation more challenging. This is backed up by an instructor who said, "*I haven't received any [evaluation theory] training like that. And we haven't extended that to our students, either, because we didn't get it (I 10)"* .

Despite the challenging nature of evaluation education, this study also found instructors conceptualize evaluation as important for students to learn, both for the field of public health and for their own employment prospects. So much so that one instructor stated, "*I think that more programs need specific evaluation courses (I 10)".* Instructors identified evaluation as a key public health activity. In detail, instructors discussed the need for evaluation for ongoing funding and to determine the efficacy of public health programming. This finding is not surprising as multiple public health scholars have long called for the importance of evaluation (James, 1962; Erwin & Brownson, 2017; Joly 2019). Specifically, the CDC specifically points to evaluation to improve and innovate public health functions as one of the 10 essential public health services (Centers for Disease Control and Prevention, 2023).

Many instructors also emphasized evaluation as an in-demand, money-making skill that would help their undergraduate students find a job. This perception of the marketability of evaluation skills is backed up by Krasna's 2024 study of 70,343 public health job postings. Krasna assigned CEPH-competencies to every job posting. Skills related to competencies explicitly stating evaluation were found in 12,062 of the 70,343 postings. Krasna further subdivided skills and found 48,822 of 70,343 postings to have evaluation-explicit CEPH competencies (Krasna, 2024). Likewise, monitoring and evaluation emerged as a needed skill in a review of 1007 global health job vacancies conducted by another study team (Keralis et al., 2018). Taken together, instructors' perception of the importance of evaluation to the field of public health as well as their perception of evaluation as a lucrative skill for undergraduates is generally supported by existing literature.

Lastly, in reference to research question 2B, instructors do not uniformly teach evaluation theory and perceive its utility differently. When specific theory was present, it was most often social science theory as identified using Lemire et al.'s (2020) theory categorization. Some instructors weren't aware of the existence of evaluation theory as the field of evaluation knows it to be. Instructors cannot teach evaluation theory if they have never been exposed to evaluation theory. Furthermore, several instructors also questioned the appropriateness of any theory, let alone evaluation theory, for undergraduate students. This finding resonates with Christie and colleagues' 2013 survey of evaluation practitioners on their undergraduate and graduate coursework. While 165 the 292 reported taking an introduction to evaluation theory course, only 2.6% reported

taking such a course in their undergraduate course load versus 86.5% in their graduate course load. This study's findings confirm that the field of public health is not exempt from Christie's work that found an absence of evaluation theory coursework for undergraduate students. Further troubling was an instructor who was an American Evaluation Association member who remarked, "*I haven't seen [evaluation theory] offered through AEA, either (I 10)*" which suggests the professional home for evaluators has yet to perfect how to communicate the evaluation theory scholarship it does facilitate.

5.3 Implications

This study's results assert that synergy between the fields of public health and the field of evaluation is not close. While evaluation is present in coursework, it is rarely emphasized or the subject of its own independent course. Moreover, evaluation theory is largely absent. Interviews with instructors reveal that although evaluation is largely valued, evaluation theory is not. While the determination of whether evaluation theory belongs in undergraduate curriculum is beyond the scope of this study, it is clear that evaluation theorists do not hold influence in the curriculum design for undergraduate public health students based on the results of this study.

5.3.1 Implications for the Field of Evaluation

One implication from the results of this study is for the field of evaluation, specifically the American Evaluation Association. More emphasis should be placed on the value of evaluation theory. If evaluation theory is not valued and emphasized in the field of evaluation, such as at American Evaluation Association events, then it is unclear

how its influence would extend beyond the field. The field of evaluation cannot benefit other fields without first exerting an influence. William Shadish (1998) wrote in his presidential address that evaluation theory is who evaluators are. Specifically, evaluation theory provides evaluators with an identity that is different from other professional identities. In the field of evaluation which spans multiple domains, it is more important than ever for a signature of evaluation to be present for the field of evaluation to continue to exist as an independent body of knowledge. Individual evaluation theorists and those who study them must continue to make the case of the importance of evaluation theory to evaluation practice. Demanding the AEA prioritize evaluation theory is crucial for the existential health of the field. In the context of this study and the current state of evaluation theory at the AEA, it is especially condemning that instructors who are aware of the AEA do not believe the AEA has offered evaluation theory resources. Deliberately increasing the visibility of evaluation theory and encouraging more professional education activities aimed at instructors of evaluation courses in other fields could be one such way to increase the knowledge and salience of evaluation theory.

Another implication for the field of evaluation is for evaluation instructors and the students they teach. Increasing exposure to evaluation theory for undergraduate students should be a priority to expose as many students as possible to the ideas and concepts of evaluation theorists rather than gatekeeping the theoretical to graduate students. The amount of formal evaluation education instruction leaves lots of room for expansion. Donaldson and LaVelle (2021) report an absence of evaluation-focused undergraduate degrees and the number of evaluation theory courses in graduate evaluation programs is

far from common (LaVelle, 2018). These findings represent an opportunity for more undergraduate and graduate evaluation theory education to occur. Emphasizing the practical applications of theory in evaluation practice will better prepare undergraduate students to engage in meaningful, rigorous evaluation activities regardless of field. A focus on the practical applications of theory may address many of the comments instructors made about the challenges of teaching evaluation to undergraduates such as one instructor's concern that, "*it's hard for [undergraduate students] to really understand the application side of the content (I 3)*". By emphasizing theory in formal evaluation education, evaluators will be better able to articulate the values of the field of evaluation, share a common language with other evaluators, understand the origins of the deep knowledgebase of field of evaluation, and present a more unified face of evaluation to non-evaluators (Shadish, 1998).

5.3.2: Implications for the Field of Public Health

This study's findings also have implications for the field of public health, especially the Council on Education for Public Health. Given the lack of ubiquity in the focus of evaluation coursework, CEPH should seek to encourage a greater emphasis on evaluation as part of its accreditation for undergraduate students. As the number of students with undergraduate public health degrees constitutes an ever-increasing proportion of total population of any public health degrees, CEPH has a large responsibility to ensure evaluation is given its appropriate emphasis in curricula. Failure to do so will result in a patchwork of evaluation skills in undergraduate students which

can lead to serious adverse effects for all who will come to rely on effective evaluation. Furthermore, in the details of its accreditation process the CEPH should emphasize evaluation as a larger process that ranges from stakeholder engagement, theoretical considerations, assessment, and facilitating use of findings. Instead, evaluation is often used synonymously as assessment and discussed as a method rather than a larger, complex process. Said simply, evaluation as a process is more than just comparing a pre-test to a post-test. To do this, schools and programs of public health may need to revise their curriculum so that evaluation is given its due space and not combined with several other topics in a single course. Shifting more courses from the Public Health Course that Include but not Emphasize Evaluation category to the Independent General Evaluation or General Evaluation in a Public Health-specific Field category would represent a positive change towards more comprehensive evaluation education. Additionally, a multiple semester evaluation course sequence would create more opportunities to introduce theory and potentially mitigate challenges of balancing the theoretical with the practical by providing more time to discuss the interplay of both. Since inadequate research methods and quantitative skills were identified as a challenge to teaching evaluation, evaluation courses should occur after students are familiar with basic statistics. A more rigorous evaluation component of CEPH-accreditation would prompt schools and programs to make this change.

Specific implications for evaluation instruction in public health include integrating more evaluation literature in courses. Public health instructors need not reinvent the wheel when it comes to evaluation instruction. Many practical guides exist to

do just so such as Wright and LaVelle's 2022 work on LGBTQ+ perspectives in evaluation education and McShane and colleagues 2015 work on evaluation training programs for undergraduate students. LaVelle & Lovato (2020) state that ample pedagogical preparation can make teaching evaluation less challenging. By integrating work from other evaluation scholars (like McShane et al., 2015 and Wright & LaVelle, 2022), instructors can reduce the challenge in teaching evaluation. Instructors can also focus on more simple, prescriptive evaluation theories that have clear practical applications in order to alleviate the tension between the hypothetical and practical aspects of evaluation that arose during interviews. Utilization-Focused Evaluation, for instance, has a series of steps that can be followed.

As many instructors reported, evaluation is crucial to public health funding. The need for people with undergraduate public health degrees to have the skills to produce rigorous evidence of not only the effects of their work but also how those effects are nestled into the larger political contexts in which public health efforts exist is clear. Evaluation theory can provide a place to start for students to produce such evidence as well as navigate complex political considerations around use. For example, evaluation theorist Carol Weiss wrote specifically about political considerations evaluators must account for to avoid shock and frustration in their work (Weiss, 1993). Courses that emphasize evaluation theory would equip students with the ability to navigate these difficult questions of use and impact beyond simple assessment techniques.

5.4 Strengths

This study has many strengths which fill gaps in previous literature. The first strength of this study is the novel nature of its approach and sample. No other study has examined evaluation courses with special attention to evaluation theory for undergraduates seeking public health degrees. While Fierro and Christie (2011) and Hobson (2019) examined public health curriculum, they did not include undergraduate courses. While LaVelle and Sabarre (2020) and LaVelle et al. (2020) examined undergraduate courses, they did not hone in on public health schools or programs. Thus, this study is strengthened by how it directly addresses a gap in existing literature and bridges two other bodies of research.

A second strength of this study is this study examined theory beyond only its presence. By employing theory taxonomies such as those by Riemer and Bickman (2011) and Nielson (2020), mentions of theory in course titles and descriptions were categorized into social science theory, program theory, or evaluation theory. This study expanded previous literature like Fierro and Christie (2011) that did not have this ability to discern between different theories or specifically highlight the presence of evaluation theory. In doing so, this study produced a more nuanced capture of which kinds of theory were present. Understanding the different types of theory present will allow future researchers to delve into how different types of theory are presented in the classroom as well as to gauge potential changes in prevalence of theory over time.

A third strength of this study is the iterative multi-method design. The curriculum review informed qualitative interview questions. In-depth qualitative interviews provided

crucial context to understanding evaluation-mentioned patterns in the public health curriculum. While other literature (see Hobson et al, 2019) have also used multi-method approaches, none have done so specifically aimed at theory in undergraduate curricula in schools and programs of public health. Engaging multiple methods was not only feasible for this specific population of curriculum but also led to a more comprehensive study with more valuable findings. On the same topic as method, this study utilized a second qualitative reviewer. While both coders had formal training in schools of public health with backgrounds in developing curriculum, the second reviewer did not have a formal background in evaluation theory instruction or education. Since the second reviewer was outside of the field of evaluation, the external validity of qualitative findings of this study were strengthened.

5.5 Limitations

This study contains three notable limitations. First, this study did not review MPH or Ph.D. program curriculum for evaluation keywords. Reviewing graduate curriculum was outside the scope of this study. Reviewing the totality of the curriculum from a school or program of public health would result in a more complete picture of all evaluation course offerings within the school or program. Future research should seek to examine the presence of evaluation curriculum regardless of undergraduate or graduate level. Limiting course queries to specific schools, such as a school of public health, could aid in feasibility.

Second, this study did not examine syllabi. Without examining syllabi, it is unknown exactly how, if at all, evaluation occurs within a course with evaluation in the

title or course description. Conversely, there could be a scenario where a course addresses evaluation in its design or reading lists but neglects to list evaluation in its title or course description. Similarly, without access to the syllabi, readings and textbooks were unable to be ascertained. A lack of textbook or course material access prevented examinations of instruction of specific methods of evaluation or evaluation theories. The high degree (52%) of evaluation theory classified as "other" might have been reduced if syllabi were analyzed. Syllabi were not readily available online, thus subsequent research would need to establish relationships with instructors sufficient enough to be permitted to access syllabi for a more in-depth analysis of evaluation pedagogy.

Third, this study would have been strengthened by a higher Cohen's kappa coefficient. While the study team believe saturation was reached, an ideal coefficient would have been higher (>0.80) than what was found with the current coding scheme (0.57). Qualitative examination of evaluation instructors in the future should prepare for an extensive qualitative analysis process and engage additional coders in the construction of the study's code book.

5.6 Future Directions

This study can serve as a strong foundation for future lines of inquiry on evaluation education in the field of public health. This is especially important for examining evaluation theory's role in evaluation theory.

One line of inquiry revolves around examining the totality of course offerings within schools and programs of public health for evaluation and theory mentions. A

larger-resourced study could invest the time and staff-power to conduct a larger review of all evaluation courses in schools and programs of public health. Since there are more Ph.D. and MPH programs than there are undergraduate public health programs, there are more evaluation courses to discover and categorize. Additionally, the findings of this study and other non-public health specific literature such as LaVelle (2018) and LaVelle & Donaldson (2021) have hinted at a potential higher concentration of evaluation courses for public health graduate students. Such a study would present a more complete census of all course offerings in schools and programs of public health that seek to train students in evaluation. A more complete census would then allow for a more comprehensive examination of the prevalence of theory in public health evaluation courses.

Another line of inquiry would investigate public health evaluation course syllabi and course materials for both undergraduate and graduate programs. By examining the syllabi and course materials, a future study could not only amass a more thorough search for evaluation terminology but also identify the authors of the course materials. Identifying authors would help future researchers map the fingerprints of evaluation scholars in public health curriculum. For instance, a course on evaluation might contain readings from Michael Q. Patton which would inform evaluation scholars which evaluation theorists have the most appeal in public health formal education contexts. Mapping the influence of evaluation scholars in public health evaluation curriculum would reveal insights about what the field of public health values when it comes to evaluation. If certain styles and methods of evaluation are more prevalent than others, it might represent an opportunity for the AEA to offer more tailored evaluation resources to

those working in public health contexts. Examining syllabi would also provide a window into not just what evaluation is taught, but also how evaluation is taught. Scholars such as Wright and LaVelle (2022) have published methods for evaluation instruction in the classroom. Comparing classroom learning activities garnered through syllabi review with published evaluation methods would paint a picture of how aligned pedagogical theory is with pedagogical practice.

Similar but different, a third line of inquiry relates to evaluation theory and instructors. A baseline level of evaluation theory knowledge can be obtained through a widely distributed survey of public health evaluation instructors. Generating this knowledge would allow evaluation scholars to determine the prevalence of evaluation theory knowledge among instructors. Simply put, instructors cannot teach what they don't know. Thus, determining the landscape of baseline evaluation theory knowledge can inform future professional education efforts for public health instructors. Such a study would also go a long way in establishing common language around theory between evaluation scholars and public health instructors. Understanding differences and similarities in how evaluators and public health instructors talk about evaluation could be a prerequisite to further constructive conversations that could promote an increase synergy between the fields.

Bibliography

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Akyea, T., & Radakovic, N. (2024). *Portraits of Our Practice: Using Black Canadian Feminist Theorizing to Reflect on STEM Curriculum Research and Practice* (Vol. 2322, pp. 927–942). https://doi.org/10.1007/978-3-031-21155-3_60

Alkin, M. C., & King, J. A. (2016). The Historical Development of Evaluation Use. *The American Journal of Evaluation*, *37*(4), 568–579.

Alkin, M., & Christie, C. (2004). An evaluation theory tree. *Evaluation Roots: Tracing Theorists' Views …*. https://doi.org/10.1016/j.stueduc.2008.07.001

Altschuld, J. W. (2002). The Preparation of Professional Evaluators: Past Tense and Future Perfect. *Japanese Journal of Evaluation Studies*, *2*(1), 1–9. https://doi.org/10.11278/jjoes2001.2.1

American Evaluation Association. (2023). *What is Evaluation?*

American Public Health Association. (2024). *What is Public Health?* https://www.apha.org/what-is-public-health

Bernal, J. L., Cummins, S., & Gasparrini, A. (2017). Interrupted time series regression for the evaluation of public health interventions: a tutorial. *International Journal of Epidemiology*, *46*(1), 348–355. https://doi.org/10.1093/ije/dyw098

Brownson, R. C., Fielding, J. E., & Maylahn, C. M. (2009). Evidence-Based Public Health : A Fundamental Concept for Public Health Practice. *Annual Review of Public Health*, *30*(1), 175–201.

Centers for Disease Control. (2023, August 23). *Program Evaluation*. Https://Www.Cdc.Gov/Evaluation/Index.Htm.

Centers for Disease Control and Prevention. (2023). *The 10 Essential Public Health Services*. Centers for Disease Control and Prevention. https://www.cdc.gov/publichealthgateway/publichealthservices/essentialhealthservices.html

Chouinard, J. A., Boyce, A. S., Hicks, J., Jones, J., Long, J., Pitts, R., & Stockdale, M. (2017). Navigating Theory and Practice Through Evaluation Fieldwork: Experiences of Novice Evaluation Practitioners. *American Journal of Evaluation*, *38*(4), 493–506. https://doi.org/10.1177/1098214016667582

Christie, C. A. (2003). What guides evaluation? A study of how evaluation practice maps onto evaluation theory. *New Directions for Evaluation*. https://doi.org/10.1002/ev.72

Christie, C. A., & Lemire, S. T. (2019). Why Evaluation Theory Should Be Used to Inform Evaluation Policy. *The American Journal of Evaluation*, *40*(4), 490–508.

Christie, C. A., Quiñones, P., & Fierro, L. (2013). Informing the Discussion on Evaluator Training: A Look at Evaluators' Course Taking and Professional Practice. *American Journal of Evaluation*, *35*(2), 274–290. https://doi.org/10.1177/1098214013503697

Council on Education for Public Health. (2023). *FAQs: Academic & Highly Specialized PH Degrees*. Council on Education for Public Health.

Council on Education for Public Health. (2024a). *Accreditation Criteria: Schools of Public Health & Public Health Programs*. https://media.ceph.org/documents/2024.Criteria.pdf

Council on Education for Public Health. (2024b). *Benefits of Accreditation*. https://ceph.org/constituents/students/benefits-of-accreditation/

Council on Education for Public Health. (2024c). *List of Accredited Schools and Programs*. https://ceph.org/about/org-info/who-we-accredit/accredited/#baccalaureate

Cuban, L. (1995). The hidden variable: How organizations influence teacher responses to secondary science curriculum reform. *Theory into Practice*, *34*(1), 4–11. https://doi.org/10.1080/00405849509543651

Davis, M. V. (2006). Teaching Practical Public Health Evaluation Methods. *American Journal of Evaluation*, *27*(2), 247–256. https://doi.org/10.1177/0198214006286422

De Beaumont Foundation. (2021). *Staffing Up: Workforce Levels Needed to Provide Basic Public Health Services for All Americans*.

Denford, S., Abraham, C., Callaghan, M., Aighton, P., De Vocht, F., & Arris, S. (2017). A review of Grey and academic literature of evaluation guidance relevant to public health

interventions. *BMC Health Services Research*, *17*(1), 643. https://doi.org/10.1186/s12913-017-2588-2

Denford, S., Lakshman, R., Callaghan, M., & Abraham, C. (2018). Improving public health evaluation: a qualitative investigation of practitioners' needs [Article]. *BMC Public Health*, *18*(1), 190. https://doi.org/10.1186/s12889-018-5075-8

Dewey, J. D., Montrosse, B. E., Schröter, D. C., Sullins, C. D., & John R. Mattox, I. I. (2008). Evaluator Competencies: What's Taught Versus What's Sought. *American Journal of Evaluation*, *29*(3), 268–287. https://doi.org/10.1177/1098214008321152

Donaldson, S. I., & Lipsey, M. W. (2006). Roles for Theory in Contemporary Evaluation Practice: Developing Practical Knowledge. In *Handbook of evaluation: policies, programs and practices*. SAGE Publications Ltd.

Dyer, O. (2025). Relief agencies in shock as Trump cuts 90% of USAID funding. *BMJ*, *388*. https://doi.org/10.1136/bmj.r445

Erwin, P. C., & Brownson, R. C. (2017). Macro Trends and the Future of Public Health Practice. *Annual Review of Public Health*, *38*(1), 393–412. https://doi.org/10.1146/annurev-publhealth-031816-044224

Fierro, L., & Christie, C. (2011). Understanding Evaluation Training in Schools and Programs of Public Health [Article]. *American Journal Of Evaluation*, *32*(3), 448–468. https://doi.org/10.1177/1098214010393721

Foster, A., King, L. R., & Bender, K. (2018). Are Public Health Academia, Professional Certification, and Public Health Practice on the Same Page? *Journal of Public Health Management and Practice*, *24*(3), S47–S50.

Freeman, R. C., Sukuan, N., Tota, N. M., Bell, S. M., Harris, A. G., & Wang, H.-L. (2019). Promoting Spiritual Healing by Stress Reduction Through Meditation for Employees at a Veterans Hospital: A CDC Framework–Based Program Evaluation. *Workplace Health & Safety*, *68*(4), 161–170. https://doi.org/10.1177/2165079919874795

Gargani, J., & Miller, R. L. (2016). What Is Program Evaluation? *American Journal of Public Health*, *106*(6), e13–e13. https://doi.org/10.2105/AJPH.2016.303159

Gebbie, K., Merrill, J., & Tilson, H. (2002). The Public Health Workforce. *Health Affairs (Project Hope)*, *21*, 57–67. https://doi.org/10.1377/hlthaff.21.6.57

Goodman, R. A., Bunnell, R., & Posner, S. F. (2014). What is "community health"? Examining the meaning of an evolving field in public health. *Preventive Medicine*, *67*, S58–S61. https://doi.org/https://doi.org/10.1016/j.ypmed.2014.07.028

Gullickson, A. M., King, J. A., LaVelle, J. M., & Clinton, J. M. (2019). The current state of evaluator education: A situation analysis and call to action. *Evaluation and Program Planning*, *75*, 20–30. https://doi.org/https://doi.org/10.1016/j.evalprogplan.2019.02.012

Hemingway, B. L., Balingit, R. M., & Donaldson, S. I. (2024). Building Program Evaluation Capacity Through an Online Training for Graduate Students at Schools and Programs of Public Health. *Public Health Reports*, *139*(1), 129–137. https://doi.org/10.1177/00333549231163529

Hemingway, B. L., Douville, S., & Fierro, L. A. (2022). Aligning Public Health Training and Practice in Evaluation: Implications and Recommendations for Educators [Article]. *Pedagogy in Health Promotion*, *8*(4), 324–331. https://doi.org/10.1177/23733799211033621

Himmelstein, D. U., & Woolhandler, S. (2016). Public health's falling share of US health spending [Article]. *American Journal of Public Health (1971)*, *106*(1), 56–57. https://doi.org/10.2105/AJPH.2015.302908

Hobson, K. A., Coryn, C. L. S., Fierro, L. A., & Sherwood-Laughlin, C. M. (2019). Instruction of Evaluation Competencies in Council on Education for Public Health (CEPH)-Accredited Master of Public Health (MPH) Degree Programs. *American Journal of Evaluation*, *40*(4), 590–606. https://doi.org/10.1177/1098214019845510

Honeycutt, S., Leeman, J., McCarthy, W. J., Bastani, R., Carter-Edwards, L., Clark, H., Garney, W., Gustat, J., Hites, L., Nothwehr, F., & Kegler, M. (2015). Evaluating policy, systems, and environmental change interventions: Lessons learned from CDC's prevention research centers. *Preventing Chronic Disease*, *12*(10), E174. https://doi.org/10.5888/pcd12.150281

Hurley, C., Renger, R., & Brunk, B. (2005). Learning From a Challenging Fieldwork Evaluation Experience: Perspectives of a Student and an Instructor. *American Journal of Evaluation*, *26*(4), 562–578. https://doi.org/10.1177/1098214005281323

Jacenko, S., Blough, S., Grant, G., Tohme, R., McFarland, J., Hatcher, C., Goodson, J. L., Papania, M., Pella, D. G., Li, X., & Yee, S. L. (2023). Lessons learnt from the applying the Centers for Disease Control and Prevention (CDC) evaluation framework to the measles incident management system response, USA, 2020–2021. *BMJ Global Health*, *8*(3), e011861. https://doi.org/10.1136/bmjgh-2023-011861

James, G. (1962). Evaluation in public health practice [Article]. *American Journal of Public Health and the Nation's Health*, *52*(7), 1145–1154. https://doi.org/10.2105/AJPH.52.7.1145

Joly, B. M. (2019). Teaching Graduate Students to Evaluate Public Health Programs Through Community-Based Learning. *Pedagogy in Health Promotion*, *6*(2), 119–127. https://doi.org/10.1177/2373379919855094

Keralis, J. M., Riggin-Pathak, B. L., Majeski, T., Pathak, B. A., Foggia, J., Cullinen, K. M., Rajagopal, A., & West, H. S. (2018). Mapping the global health employment market: an analysis of global health jobs. *BMC Public Health*, *18*(1), 293. https://doi.org/10.1186/s12889-018-5195-1

King, J. A., & Ayoo, S. (2020). What do we know about evaluator education? A review of peer-reviewed publications (1978–2018). *Evaluation and Program Planning*, *79*, 101714–101785.

King, J. A., & Stevahn, L. (2020). Presenting the 2018 AEA Evaluator Competencies. *New Directions for Evaluation*, *2020*(168), 49–61. https://doi.org/https://doi.org/10.1002/ev.20435

Krasna, H. (2024). Employer Demand and Desired Skills for Public Health Graduates: Evidence From Job Postings. *American Journal of Public Health*, *114*(12), 1388–1393. https://doi.org/10.2105/AJPH.2024.307834

Kronenfeld, J. J. (1981). Having Students Conduct Evaluations: Merging Field Experience and Academic Learning. *Evaluation News*, *2*(4), 375–378. https://doi.org/10.1177/109821408100200426

La Belle, T. J. (1982). Formal, nonformal and informal education: A holistic perspective on lifelong learning. *International Review of Education*, *28*(2), 159–175. https://doi.org/10.1007/BF00598444

LaVelle, J. M. (2014). *An examination of evaluation education programs and evaluator skills across the world*. ProQuest Dissertations Publishing.

LaVelle, J. M. (2018). 2018 Directory of Evaluator Education Programs in the United States. In *University of Minnesota Libraries Publishing*. University of Minnesota Libraries Publishing.

LaVelle, J. M. (2019). Educating Evaluators 1976–2017: An Expanded Analysis of University-Based Evaluation Education Programs. *American Journal of Evaluation*, 1098214019860914. https://doi.org/10.1177/1098214019860914

LaVelle, J. M. (2020). Educating Evaluators 1976–2017: An Expanded Analysis of University-Based Evaluation Education Programs [Article]. *The American Journal of Evaluation*, *41*(4), 494–509. https://doi.org/10.1177/1098214019860914

LaVelle, J. M., & Donaldson, S. I. (2010). University-Based Evaluation Training Programs in the United States 1980—2008: An Empirical Examination. *The American Journal of Evaluation*, *31*(1), 9–23. https://doi.org/10.1177/1098214009356022

LaVelle, J. M., & Donaldson, S. I. (2021). Opportunities and Challenges Ahead for University-Based Evaluator Education Programs, Faculty, and Students [Article]. *The American Journal of Evaluation*, *42*(3), 428–438. https://doi.org/10.1177/1098214020937808

LaVelle, J. M., & Galport, N. (2020). Using the 2018 AEA Evaluator Competencies for Evaluator Education and Professional Development. *New Directions for Evaluation*, *2020*(168), 99–116. https://doi.org/https://doi.org/10.1002/ev.20437

LaVelle, J. M., Lovato, C., & Stephenson, C. L. (2020). Pedagogical considerations for the teaching of evaluation [Article]. *Evaluation and Program Planning*, *79*, 101786–11. https://doi.org/10.1016/j.evalprogplan.2020.101786

LaVelle, J. M., Neubauer, L. C., Boyce, A. S., & Archibald, T. (2023). Setting the stage for critically defined and responsive evaluator education and training. *New Directions for Evaluation*, *2023*(177), 13–22. https://doi.org/https://doi.org/10.1002/ev.20542

LaVelle, J. M., Sabarre, N., & Umans, H. (2020). An Empirical Examination of Evaluation's Presence in the Undergraduate Curriculum in the United States. *The American Journal of Evaluation*, *41*(2), 297–310.

Leeuw, F. L., & Donaldson, S. I. (2015). Theory in evaluation: Reducing confusion and encouraging debate. *Evaluation*, *21*(4), 467–480. https://doi.org/10.1177/1356389015607712

Leider, J. P., Burke, E., Nguyen, R. H. N., Plepys, C., Kirkland, C., Resnick, B., & Magaña, L. (2022). Trends in Degree Conferrals, Degree-Associated Debt, and Employment Outcomes Among Undergraduate Public Health Degree Graduates, 2001–2020. *American Journal of Public Health*, *113*(1), 115–123. https://doi.org/10.2105/AJPH.2022.307113

Leider, J. P., Plepys, C. M., Castrucci, B. C., Burke, E. M., & Blakely, C. H. (2018). Trends in the conferral of graduate public health degrees: A triangulated approach. *Public Health Reports*. https://doi.org/10.1177/0033354918791542

Leider, J. P., Resnick, B., & Erwin, P. (2022). Educated Citizenry or Workforce Pipeline Development? Questions for the Future of Undergraduate Public Health in the United States. *American Journal of Public Health*, *112*(4), 582–585. https://doi.org/10.2105/AJPH.2022.306742

Leider, J. P., Yeager, V. A., Kirkland, C., Krasna, H., Hare Bork, R., & Resnick, B. (2023). The State of the US Public Health Workforce: Ongoing Challenges and Future Directions. *Annual Review of Public Health*. https://doi.org/10.1146/annurev-publhealth-071421-032830

Lemire, S., Christie, C., & Nielsen, S. B. (2020). Mending the Theory Gap in Evaluation. In M. Palenberg & A. Paulson (Eds.), *The Realpolitik of Evaluation* (1st ed.). Routledge. https://doi.org/10.4324/9781003005162

Logan, S., Boutotte, J., Wilce, M., & Etkind, S. (2003). Using the CDC framework for program evaluation in public health to assess tuberculosis contact investigation programs. *The International Journal of Tuberculosis and Lung Disease*, *7*(12), S375–S383.

Mark, M. (2008). CHAPTER 6 Building a Better Evidence Base for Evaluation Theory Beyond General Calls to a Framework of Types of Research on Evaluation. In *Fundamental Issues in Evaluation* (pp. 111–134). Guilford Press.

Mason, S. (2022). Just Give Me an Example! Exploring Strategies for Building Public Understanding of Evaluation [Article]. *The American Journal of Evaluation*, 109821402110610. https://doi.org/10.1177/10982140211061018

McAdaragh, M. O., LaVelle, J. M., & Zhang, L. (2020). Evaluation and Supporting Inquiry Courses in MSW Programs. *Research on Social Work Practice*, *30*(7), 750–759. https://doi.org/10.1177/1049731520921243

McShane, K., Katona, N., Leroux, E. J., & Tandon, R. (2015). Inspiring Future Program Evaluators through Innovative Curriculum for Undergraduates. *The Canadian Journal of Program Evaluation = La Revue Canadienne d'évaluation de Programme.*, *30*(2), 205–215. https://doi.org/10.3138/cjpe.202

Meyer, I. H. (2003). Prejudice, Social Stress, and Mental Health in Lesbian, Gay, and Bisexual Populations [Article]. *Psychological Bulletin*, *129*(5), 674–697. https://doi.org/10.1037/0033-2909.129.5.674

Miles, M. B., & Huberman, A. M. (1994). Qualitative data analysis: An expanded sourcebook, 2nd ed. In *Qualitative data analysis: An expanded sourcebook, 2nd ed.* Sage Publications, Inc.

Milstein, B., & Wetterhall, S. F. (1999). *Framework for Program Evaluation in Public Health* (C. D. C. E. W. Group, C. for D. C. and P. (U.S.), & O. of P. P. and Evaluation. Centers for Disease Control and Prevention (U.S.), Eds.). https://stacks.cdc.gov/view/cdc/5204

Oliver, D. E., Casiraghi, A. M., Henderson, J. L., Brooks, A. M., & Mulsow, M. (2008). Teaching Program Evaluation Three Selected Pillars of Pedagogy. *The American Journal of Evaluation*, *29*(3), 330–339.

Otok, R., Richardson, E., Czabanowska, K., & Middleton, J. (2018). The public health workforce. In *Organization and financing of public health services in Europe*. European Observatory on Health Systems and Policies.

Patton, M. Q. (1997). Utilization Focused Evaluation: The News Century Text. In *Evaluation Models*. https://doi.org/10.2307/447919

Picciotto, R. (2011). The logic of evaluation professionalism [Article]. *Evaluation (London, England. 1995)*, *17*(2), 165–180. https://doi.org/10.1177/1356389011403362

Resnick, B., Leider, J. P., & Riegelman, R. (2018). The Landscape of US Undergraduate Public Health Education. *Public Health Reports (1974)*, *133*(5), 619–628.

Riegelman, R. K. (2015). *Public health 101 : healthy people--healthy populations* (B. Kirkwood, Ed.; Second edition..) [Book]. Jones & Bartlett Learning.

Riegelman, R. K. (2022). Two Decades of Progress in Undergraduate Public Health: Where Do We Go From Here? *American Journal of Public Health*, *113*(1), 9–11. https://doi.org/10.2105/AJPH.2022.307145

Riemer, M., & Bickman, L. (2011). Using program theory to link social psychology and program evaluation. In *Social psychology and evaluation.* (pp. 102–139). The Guilford Press.

Rossi, P., Lipsey, M., & Freeman, H. (2004). Evaluation: A Systematic Approach. In *Evaluation: A Systematic Approach*. SAGE Publications.

Rychetnik, L., Frommer, M., Hawe, P., & Shiell, A. (2002). Criteria for evaluating evidence on public health interventions. *Journal of Epidemiology and Community Health*, *56*(2), 119 LP – 127. https://doi.org/10.1136/jech.56.2.119

Saldaña, J. (2013). *The coding manual for qualitative researchers.* (2nd ed.). SAGE.

Sanson-Fisher, R. W., D'Este, C. A., Carey, M. L., Noble, N., & Paul, C. L. (2014). Evaluation of systems-oriented public health interventions: Alternative research designs. *Annual Review of Public Health*, *35*(1), 9–27.

Schulberg, H. C., & Baker, F. (1968). Program evaluation models and the implementation of research findings. *American Journal of Public Health and the Nation's Health*, *58*(7), 1248–1255.

Scriven, M. (1991a). Evaluation thesaurus, 4th ed. In *Evaluation thesaurus, 4th ed.* Sage Publications, Inc.

Scriven, M. (1991b). Prose and cons about goal-free evaluation [Article]. *Evaluation Practice*, *12*(1), 55–63. https://doi.org/10.1016/0886-1633(91)90024-R

Shadish, W. R. (1998). Evaluation theory is who we are. *American Journal of Evaluation*, *19*(1), 1. http://10.0.4.153/109821409801900102

Shadish, W. R., Cook, T. D., & Leviton, L. C. (1991). Foundations of program evaluation: Theories of practice. In *Foundations of program evaluation: Theories of practice.* Sage Publications, Inc.

Spiegelman, D. (2016). Evaluating Public Health Interventions: 1. Examples, Definitions, and a Personal Note. *American Journal of Public Health*, *106*(1), 70–73. https://doi.org/10.2105/AJPH.2015.302923

Steckler, A., & Linnan, L. (2002). Process evaluation for public health interventions and research. In A. Steckler & L. Linnan (Eds.), *Process evaluation for public health interventions and research.* Jossey-Bass/Wiley.

Stenhouse, L. (1975). *An introduction to curriculum research and development*. Heinemann.

Stevahn, L., King, J. A., Ghere, G., & Minnema, J. (2005). Establishing Essential Competencies for Program Evaluators. *The American Journal of Evaluation*, *26*(1), 43–59.

Strauss, R., Volz, A., & Lidwell, W. (2023). *The elements of education for curriculum designers : 50 research-based principles every educator should know*. Routledge, Taylor & Francis Group. https://doi.org/10.4324/9780429321283

Stufflebeam, D. L. (2003). The CIPP Model for Evaluation. In T. Kellaghan & D. L. Stufflebeam (Eds.), *International Handbook of Educational Evaluation* (pp. 31–62). Springer Netherlands. https://doi.org/10.1007/978-94-010-0309-4_4

Sutton, R. I., & Staw, B. M. (1995). What Theory is Not [Article]. *Administrative Science Quarterly*, *40*(3), 371–384. https://doi.org/10.2307/2393788

Tisza, G., Papavlasopoulou, S., Christidou, D., Iivari, N., Kinnula, M., & Voulgari, I. (2020). *Patterns in informal and non-formal science learning activities for children–A Europe-wide survey study*.

Tremain, B., Davis, M., Joly, B., Edgar, M., Kushion, M. L., & Schmidt, R. (2007). Evaluation as a Critical Factor of Success in Local Public Health Accreditation Programs. *Journal of Public Health Management and Practice*, *13*(4). https://journals.lww.com/jphmp/fulltext/2007/07000/evaluation_as_a_critical_factor_of_success_in.14.aspx

Tulchinsky, T. H., & Varavikova, E. A. (2014). A history of public health. In *The New Public Health* (pp. 1–42). Elsevier.

Wanzer, D. L. (2021). What Is Evaluation?: Perspectives of How Evaluation Differs (or Not) From Research. *The American Journal of Evaluation*, *42*(1), 28–46.

Weiss, C. H. (1993). Where Politics and Evaluation Research Meet. *Evaluation Practice*, *14*(1), 93–106. https://doi.org/10.1177/109821409301400119

Winslow, C. E. A. (1920). The Untilled Fields of Public Health. *Science (American Association for the Advancement of Science)*, *51*(1306), 23–33.

Witsel, M., & Markwell, K. (2023). The Happiness Project: Using a CDC Framework for Evaluating the Effectiveness of a Student Transition and Retention Program. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.4574535

Wright, M. M., & LaVelle, J. M. (2022). Evaluator education through an LGBTQ+ lens: Interrogating power and privilege in the classroom. *New Directions for Evaluation*, *2022*(175), 153–169. https://doi.org/10.1002/ev.20512

Youker, B. W., & Ingraham, A. (2014). Goal-Free Evaluation: An Orientation for Foundations' Evaluations. *The Foundation Review*, *5*(4), 51.

Zajda, J. (2024). *Curriculum Design and Evaluation in the Global Culture* (Vol. 2322, pp. 783–797). https://doi.org/10.1007/978-3-031-21155-3_23