The Importance of Health Literacy: A Student-Led Workshop on Lay Communication

A Senior Project
presented to
the Faculty of the Department of Kinesiology and Public Health
California Polytechnic State University, San Luis Obispo

In Partial Fulfillment
of the Requirements for the
Bachelor of Science Degree in Public Health

By

Sarah Jean Kamp
Student

Dr. Jafrā Thomas
Senior Project Advisor

March 2022

Acknowledgments

The successful completion of this experiential senior project and the subsequent manuscript

would not have been possible without the remarkable support of Dr. Jafrā D Thomas. His

encouragement and compassion throughout these past six months have not gone unnoticed. I am

grateful for his confidence in me as a leader and for allowing me to take a self-motivated

approach to this project. A special thanks is also extended to Sarah Carney (Administrative

Support Assistant, Department of Kinesiology and Public Health, Cal Poly), and the Cal Poly

PULSE Programs for providing logistical support and assistance in promoting the event.

Abstract

The purpose of this experiential senior project workshop was to advance the knowledge and practice of health communication by (a) delivering a training workshop to Cal Poly undergraduate students and (b) by exploring the relationship between health literacy and effective communication through completion of a rapid review of the literature. The reviewed literature served the purpose of helping the student further design the workshop to elicit a foundational understanding of the elements of effective communication of health information as well as the history and evolution of health literacy as a concept. The workshop revised and delivered by the student was first developed by Dr. Jafrā Thomas (2020) with the stated goal to provide undergraduate students with an awareness of health literacy, the role of plain language in promoting health literacy, and to equip students with practical skills for effectively communicating health information to a lay adult audience. This submission presents the student reflection on their experiential project, the rapid review of literature produced by the student, the elements identified for a successful workshop on the topic, evaluation and analysis of participant pre-and post-workshop surveys, and finally, suggestions for ways to improve the workshop which was guided by the student's review of literature and experiential reflection. After the conclusion of the workshop, student participants were successfully able to define health literacy and identify at least two tips for effective communication of health information. Some proposed improvements for future workshop revisions include the addition of personal anecdotes and health-related case studies.

Contents

Introduction

For this experiential senior project, I was assigned the responsibility of delivering a 50-minute workshop on effective communication of health information that was to be adapted from a previously created workshop. The tasks involved with this project included reviewing literature on the topic, adapting materials from a previous workshop, delivering the workshop to a group of peers, and reflecting on the experience as a whole as well as providing suggestions for future workshops on this topic. This manuscript begins with a reflection component detailing my experience followed by the literature review, method of the workshop execution, an evaluation of pre-and post-workshop survey results, and a discussion reflecting on the delivery of the workshop and suggestions for improvement.

Reflection on Experience

I was drawn to this topic because of the way it offered an intersection between public health concepts and educational programming and was multifaceted in that it offered me the opportunity to learn about the material as well as how to facilitate others through the process of learning the material in an evidence-based way. This experiential senior project called for independent leadership development, a tenacious work ethic, and an immense amount of organization, among other skills, all of which were identified and described in the Senior Project Contract (see Appendix B). These are also detailed in the personal skill set development goals in Table 1 and Table 2. I feel I have achieved and surpassed each of these skill set development goals throughout the experiential process and through the execution of the identified student project-specific learning objectives. Areas where I have had the most growth are under the umbrellas of the first, fourth, and fifth student-identified project learning objectives (see Table 2). More specifically, the relationship between synthesizing relevant concepts in "the spirit of

empirical inquiry" and the processes that go into developing an education-based workshop was something I found myself learning about in a more meaningful way than I had originally anticipated when entering this term. As per the associated project components PC[3] and PC[4] detailed in Table 1, this workshop was adapted from previous workshop materials. The original presentation this workshop was adapted from, titled "Communicating in Plain Language," by Dr. Jafrā Thomas (2020) had a strong foundation in the effective communication of health information by concentrating on readability and plain language guidelines in written formats. These concepts were key components of this workshop as they provided the basis for effectively communicating health information in a written format. To build on this topic, it was my original intention to include elements of effective communication in verbal modes of communication which led me to look into factors that influence effective communication across populations. This sparked an interest in the topic of health literacy and how communicating across literacy levels is vital to effectively communicating health information in all formats. That said, the title of the final workshop presented for this experiential senior project was titled "The Importance of Health Literacy." After a deep dive into the literature on the topic of health literacy and effective communication, I found myself almost drowning in the abundance of information available on the topic, wanting to include it all; my empirical inquiry had led me down rabbit holes. Within the constraints of a 50-minute workshop, it would be impossible to cover the amount of content included in the first draft of my presentation which called for a continuous process of scrutinizing and revising the material; these were the processes associated with developing the education-based material at play.

One of my greatest personal difficulties throughout this experiential project was self-motivation to tie up loose ends on small tasks. I have found this to be a difficulty in many areas

of my academic and professional work, but this project has proven useful in overcoming this obstacle through the accountability that came from weekly check-ins with Dr. Thomas, this project's faculty advisor, and a pre-established timeline (see Appendix C). The timeline was created as the first step in this project as a method of best practices that provided specific goals and checkpoints intended to sum to the required minimum 3-hour weekly time commitment. The first and third identified student learning objectives (see Table 2) pertain to time management, planning, and organized decision making, all of which apply to how essential it was to remain on a tightly followed schedule throughout the execution of this workshop. Once the official date for the workshop was set, there was a concrete deadline to have all materials prepared and ready for presentation. After the workshop, I found it difficult to focus on some of the essential tasks that come with the evaluation of such a project, but again, having a preset timeline with weekly goals has allowed me to give myself grace while also staying on task through the completion of the term. Through the completion of this experiential senior project, I can confidently say I have gained an in-depth understanding of the importance of health literacy and effective communication of health information, but also the need for a curriculum on these specific topics.

Table 1

Personal Skill Set Development Goals

1. The student should have experience being a project lead or behaving like a leader to independently manage projects outside of the classroom.
2. The student should have an open mind, a tenacious work ethic, and be a self-starter.
3. The student should have good skills in organization and record-keeping (or willing to develop in these areas).

Table 2

Project Specific Learning Objectives

Student-Identified Project Learning Objectives	Project Component (PC)	Achieved
1. Acquire an understanding of the time management, planning, and processes that go into developing, administering, and evaluating an education-based workshop on health-related material. 2. Identify and summarize the elements of effective communication in different modes	Deliver a 50-minute workshop on lay communication to kinesiology and/or public health majors (PC[1]).	A week-by-week timeline was established three months prior to workshop execution; the workshop was delivered on January 26, 2022, from 7:10-8 pm
3. Make decisions in a reasoned, organized, and efficient manner, delegating work when applicable	This project entails scheduling the workshop, practice in facilitating the workshop, marketing the workshop, and recruiting workshop participants (PC[2]).	Collaboration with KPH Department's Administrative Support Assistant Sarah Carney to schedule and reserve a space; mass emails sent to various student groups with advertising materials for the workshop (see Appendix D); RSVP survey utilized to track interest and gauge attendance (see Appendix E); follow-up email correspondence to RSVP respondents (see Appendix F)
4. Synthesize relevant concepts, theories, and evidence from empirical research to justify the need for and importance of a research or creative project.	This project includes adapting previous workshop material developed by Dr. Thomas or his students, by improving/adding activities or updating examples (PC[3]).	Adaptation of Dr. Thomas' BEACoN presentation as a starting point; inclusion of plain language activity as well as SMOG readability formula activity

5. Analyze primary or secondary data or information in the spirit of empirical inquiry.	This project includes the execution of a rapid literature review of original research published within the last 5 years, then summarizing the results as an annotated bibliography (PC[4]).	Literature review to supplement existing material
6. Reflect on project-related experiences in a way that encourages growth and sustainability.	Upon completion of the workshop, the student is expected to write a brief reflection on ways to improve the workshop (1-2 paragraphs) (PC[5]).	Reflection included in this document along with analysis of participant learning objectives and compilation of pre-and post-workshop survey responses

Note. Each student-identified learning objective is informed by each of the identified project components

Literature Review

The literature review aspect of this experiential senior project is laid out in this next section. Per the project directive within the project's announcement (Department of Kinesiology and Public Health, personal communication, August 20, 2021), a rapid review of the peer-reviewed research literature was performed (Hockert et al., 2021). The focus of the rapid literature review was to expand understanding as to the importance of workshops in lay communication for pre and/or current health-related professionals, such as college students pursuing the baccalaureate degree in kinesiology or public health. A total of 12 sources were evaluated within the confines of this rapid review focused on the communication of health information using a health literacy perspective. Following the development, expansion, and revision of the workshop material focused on effective communication with lay audiences, this literature review is organized thematically as I transitioned the content to a broader scope concentrated on the importance of health literacy. Following the identified personal learning objectives for the project, the revision and expansion of the workshop material also entailed the transition from a focus primarily on effective communication using written formats to the inclusion of verbal formats. Under the larger concept of health literacy, source material that conceptualized different forms of health literacy and key suggestions for educating undergraduate students using perspectives in health literacy education were also included within the confines of this rapid literature review.

Effective Communication

The importance of effective communication of health information and ensuring the suitability of written materials is to promote readability, encourage desired health behaviors, and improve individual knowledge, self-management, and self-regulation as it relates to health

outcomes (Smith & Thomas, 2020). A summary by Love et al. (2021) also pointed out that a majority (80%) of the population feels overwhelmed with the amount of information available and fails to follow any guidance due to confusion with guidelines or information overload. This summary highlights the need to follow guidelines for effective communication to promote healthy behaviors and positive health outcomes. A critical interpretive synthesis published by Thomas et al. in 2021 discussed the importance of plain language and readability when conveying health information to the general public equitably in a written format, finding that most materials on health information are not suitable for audiences with basic or below basic health literacy. The synthesis emphasized the need for a curriculum on how to effectively craft public health messaging so that it can be understood by the general public. The original presentation "Communicating in Plain Language" (Thomas, 2020) which I revised and expanded upon through this experiential senior project (Kamp & Thomas, 2022), as well as other related literature from Dr. Thomas, provided insight into the importance of plain language and readability in the written communication of health information. Tips for communicating in plain language provided by Thomas (2021) include reducing the number of polysyllabic words, using shorter sentences, using direct and active verbs and writing style, limiting the use of technical language, and including graphics and headings as needed.

Verbal Communication

The suggestions for improved written communication of health information prompted an interest in existing parallel guidelines that exist when communicating the same health information in verbal formats. A class offered by the Network of the National Library of Medicine (NNLM) in 2021 identified several tips for effectively communicating health information in verbal formats. These tips included using plain language when speaking,

mirroring the patient's own words and vocabulary, slowing down, limiting the amount of content spoken and repeating important information, being as specific as possible, showing graphics or demonstrations where applicable, and listening carefully to clarify when necessary (NNLM, 2021).

Health Literacy

The term health literacy was first used in the 1970s to refer to how competent an individual is at promoting and maintaining individual health (Liu et al., 2020). In recent decades, health literacy has become a growing area of interest in disciplines of health, education, communication, and medicine and low health literacy has even been identified as a social determinant of health and a worldwide public health problem (Liu et al., 2018). People with low health literacy are more likely to be at higher risk of mortality and be burdened with increased costs associated with poor health outcomes (Liu et al., 2020). Several core elements of health literacy stress the importance of providers of health information having the ability to effectively communicate health information to the general population. This means that health information intended for the general public should be easily understood regardless of the delivery format and health literacy level of the intended audience (Thomas et al., 2022).

The 2003 National Assessment of Adult Literacy conducted the first-ever assessment of adult health literacy in the US and found that only 12% of adults had a proficient level of health literacy (Kutner et al., 2006). The definition of reference for the 2003 assessment comes from the Healthy People 2010 definition of health literacy as "The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions" (Kutner et al., 2006). Despite the growing recognition of the importance of health literacy, there is still no formal definition for the concept with over 250

definitions existing in existing academic literature (Liu et al., 2020). The most all-encompassing definition of health literacy used for the purpose of this workshop was a combination of the Healthy People 2030 definition and the definition from the National Library of Medicine which defines individual health literacy as "the degree to which individuals have the capacity to find, evaluate, understand, communicate[1], and use health information and services to inform health-related decisions and actions for themselves and others" (Santana et al., 2021; House Office of the Legislative Counsel [HOLC], 2010) (see Appendix A).

Organizational Health Literacy

Organizational health literacy is defined as "the degree to which organizations equitably enable individuals to find, understand, and use information and services to inform health-related decisions and actions for themselves and others" (Santana et al., 2021). The concept of organizational health literacy has been a growing area of interest within organizations to better reach populations with poor health outcomes and low levels of health literacy to bridge the gap between low health literacy and poor health outcomes (Laing et al., 2020). Health literacy as a social determinant of health is rooted in the interaction of an individual's level of health literacy and the social influences in that person's life-impacting their understanding of health materials and services (Farmanova et al., 2018). Organizational health literacy also emphasizes the responsibility of organizations and healthcare providers within participatory health care, which requires engaging the public to take an active role in their individual healthcare decisions, regardless of health literacy level (Farmanova et al., 2018).

---

[1] The inclusion of the word communicate in the definition of health literacy first appeared in Title V of the Patient Protection and Affordable Care Act of 2010 as an updated definition under the newly passed healthcare reform (HOLC, 2010)

Health Literacy Curriculum

In agreement with suggestions from Thomas et al. (2021) on the need for a curriculum on crafting written messaging of health information, there is also an additional need for a curriculum on verbal communication so that necessary health information can be equitably understood by the general public regardless of health literacy level. Despite the high percentage of Americans that have less than a proficient level of health literacy, as of 2019, there is still no formal curriculum addressing health literacy (Saunders et al., 2019). A systematic review of past health literacy training workshops in health professions education published by Saunders et al. (2019) identifies several components of a successful conceptual framework for curriculum on health literacy for undergraduate students working toward a career in the health professions. Saunders et al. (2019) proposed several suggestions for ways to design health literacy education curricula in health-focused undergraduate degree programs,: (a) use a multidimensional approach that includes competencies in communication in written and verbal modes, cultural competency, and self-awareness; (b) use a classroom-based setting; (c) use didactic instruction during class sessions interspersed with interactive discussion and reflective activities; (d) use real-world examples and case studies; and (e) a student peer-led format (Saunders et al., 2019). Some activities suggested to be most beneficial were literacy level assessments and assessing the readability of information pamphlets using existing validated appraisal instruments (Saunders et al., 2019).

Method

The focus of this experiential senior project was to successfully convey to an audience of undergraduate students the meaning and importance of health literacy as it relates to the effective communication of health information. Through a rapid literature review, components necessary to include in education-based workshops specifically for this demographic were identified. These components consisted of peer-led, classroom-based, didactic instruction sessions that included reference to multiple modes of communication in addition to interactive and reflective activities to elicit participant understanding. Each of aforementioned components and activities were included in the present workshop, "The Importance of Health Literacy" (Kamp & Thomas, 2022). On January 26, 2022, the workshop, "The Importance of Health Literacy" was presented to a group of 38 Cal Poly undergraduate students. The workshop was 50 minutes in length from start to finish. The following participant learning objectives and workshop components (Table 2) were addressed and included within the content of the workshop. To gauge the effectiveness of the workshop in promoting participant achievement of the articulated learning objectives, pre- and post-workshop surveys were administered within the designated 50-minute time block using paper questionnaires (see Appendices G and H). As the focus of the surveys was to gauge the effectiveness of the workshop, and not to generalize beyond workshop participants, the Internal Review Board for the California Polytechnic State University, San Luis Obispo, waived review of the protocols used to evaluate learning by participants.

Table 3

Participant Learning Objectives

Learning Goal	Workshop Components	Achieved

1. Workshop participants will be able to define health literacy	Provide a working definition of health literacy and opportunities for participants to share personal applications	Create a handout of the plain text version of slides for each participant; include synthesized definitions of individual and organizational health literacy from various outlets and pieces of literature
2. Workshop participants will be able to understand the importance of health literacy	Include real-life examples and anecdotal evidence	Provide examples of poor health outcomes related to low health literacy
3. Workshop participants will be able to list at least two tips for effective communication of health information	Supply participants with tips for verbal and written communication	List several tips for both verbal and written communication and elaborate on context for using each tip
4. Workshop participants will be able to understand if selected material will have elements of effective communication	Utilize activities for plain language and readability guidelines to facilitate understanding and encourage participant application of topics	Sample articles were distributed for participants to practice using the SMOG[a] formula and provide plain language alternatives to phrases identified as being technical within the articles

Note. Each participant learning objective was identified within the workshop and the above workshop components were also included

[a]SMOG stands for Simple Measure of Gobbledygook, which is a reading grade level formula developed by McLaughlin (1969). The simplified guidelines provided by the National Literacy Trust (2008) were used in the present workshop.

Results

After evaluating the pre-and post-workshop survey responses from participants (see

Tables 4a-4d), it can be reasonably concluded that each of the four identified learning objectives

was achieved to a meaningful degree. Participants were successfully able to demonstrate an

understanding of the concepts discussed throughout the workshop. When it came to defining

health literacy in the post-workshop survey (see Table 4a), 27 of the 37 workshop participants

(73.0%) were able to provide a definition that included two of the original definition's six[2] verbs,

with 30 (81.1%) of the responses including some reference to informed action as it pertains to

decision making and health. The verbs that were most frequently included in participant

definitions of health literacy were to utilize, communicate, and understand. Additionally, several

responses included mention of different organizational levels within their definition of health

literacy, which was another conceptual definition[3] provided within the workshop presentation.

Table 4b details the participant responses to the prompt addressing the third participant

learning objective of being able to identify at least two tips for effective communication. Pre-

workshop surveys included a wide variety of suggestions ranging from community service to

cultural competency. Throughout the workshop, there were 14 total tips provided for effective

communication with 8 tips for verbal communication and 6 tips for written communication. In

the post-workshop survey, all but two respondents (5.4%) were able to provide at least two tips

for effective communication of health information that were also provided in the workshop's

material. Post-workshop survey responses provided an average of three tips per respondent, with

---

[2] These verbs were provided in the definition of individual health literacy as "the degree to which individuals have the capacity to find, evaluate, understand, communicate, and use health information and services to inform health-related decisions and actions for themselves and others."

[3] The definition of organizational health literacy provided reads: "the degree to which organizations equitably enable individuals to find, understand, and use information and services to inform health-related decisions and actions for themselves and others."

a range of one to four. Identification of the use of plain language as a tip for effective communication was the most mentioned, appearing in 26 of the 37 responses (70.3%). As per suggestions from the literature, there were two distinct interactive activities included within the workshop that focused on the concepts of readability and plain language. The inclusion of these activities and the high frequency of plain language mentioned in post-workshop surveys may suggest these activities were effective in solidifying participant understanding of the importance of these concepts in the context of health literacy and effective communication of health information. From the feedback provided in the post-workshop surveys, 25 of the 37 participants (67.6%) made a positive comment about the activities used to facilitate their learning (see Table 4d).

Table 4a

Prompt*:* Define "health literacy" in your own words. Please be specific.

Pre-Workshop Survey (n = 38)	Post-Workshop Survey (n = 37)
"Health literacy is the concept of knowing, managing, and sustaining health practices effectively in order for the health community and the overall health of the population to benefit." (Response 5)	"The ability for someone to find, use, evaluate, and communicate health-related information on an individual, community, organizational, and federal level." (Response 1)
"How well you know health well enough to explain and put it to practice" (Response 10)	"Health literacy is the extent to which we encounter, understand, apply, & communicate knowledge & resources pertaining to health." (Response 4)
"awareness and understanding of different, diverse health complexes, and accessibility of information to inform and support community" (Response 12)	"Health literacy is how you [take] health information and turn it into action in order to make health-related decisions" (Response 8)
"an individual's ability to understand, analyze, and make decisions regarding their health, their needs, the health system. (Like insurance, protocols, and procedures)" (Response 13)	"The ability to communicate, use, and effectively understand health information on a personal or interpersonal level" (Response 16)
"Health literacy is reading & comprehending medical information & interpreting it for everyday use." (Response 23)	"The ability to find, understand, communicate, and utilize health information that will inform health behaviors and actions." (Response 19)
	"Health literacy is the ability to find, evaluate, communicate and understand health information and transform this knowledge into action." (Response 22)

"I think health literacy refers to the language/phrased used surrounding health topics and how it plays a role in the communication piece of medicine" (Response 26) "communicating about health effectively to patients, the public, peers, etc." (Response 29) "The ability to effectively both communicate and understand health information and behaviors/attitudes needed to attain positive health outcomes" (Response 35)	"An individual's ability to obtain, evaluate, understand, communicate, and implement health information" (Response 36) "the way in which people and organizations understand, evaluate, communicate, and use health information" (Response 29)

Table 4b

Prompt: List a few tips for effectively communicating health information.

Pre-Workshop Survey (n = 38)	Post-Workshop Survey (n = 37)
"educating others on certain topics that are relevant; community service or giving back to the community through health literacy" (Response 1) "using accessible language; acknowledging that "healthy" comes in different forms for different people; providing tips on healthy living; being open to & accessible for questions" (Response 3) "To communicate health information effectively, individuals should be specific when talking about diseases, treatments, medicine, etc." (Response 9) "It is essential to be thorough, descriptive, and to be credible" (Response 16) "making the health information easily accessible & available in a variety of formats" (Response 24) "studying different culture's health practices; learning to talk to people of all ages; being knowledgeable enough to answer questions" (Response 30)	"use plain language; use similar language as the patient; tell the 'need to know' not the 'nice to know'" (Response 1) "use plain language; use simple messages; try to make the thing [you are] saying understandable to someone who has no understanding of the topic" (Response 5) "steer away from technical language; use short sentences for absorption and metaphors/imagery/graphics for comprehension" (Response 12) "simplify language used to less than 3 syllables; communicate the info someone NEEDS to know; clarify rather than repeat" (Response 18) "use visual aids; use "plain" language; ensure understanding; assume that your audience has low health literacy" (Response 24) "use plain language, short sentences, words shorter than 3 syllables" (Response 36)

Table 4c

Prompt: What is at least one aspect of the workshop that the presenter could improve to make it more effective for learning? Please be specific.

Post-Workshop Survey (n = 37)

"explain the activity a little better. I was a little confused and took longer to do it which took time away from the presentation" (Response 4)

"It was really effective for learning but maybe an anecdote or story for why health literacy is important would have been helpful/engaging" (Response 6)

"the handout should have things for us to write answers in" (Response 9)

"get timing of participation, provide more than just information written on slides (or add less on slides and be able to expand verbally)" (Response 12)

"Maybe showing some visuals, like charts and graphs, as some evidence for better understanding and interpretation" ((Response 17)

"using specific case studies to show how health literacy is used effectively in a health-related setting" (Response 18)

"I really liked the workshop. I think people may have felt more comfortable interacting in the very beginning if there was something like a casual discussion w/ neighbors at the beginning." (Response 31)

"Use public health articles instead of one about cats. People can then hone a realization about what is too complex to read. i.e. use a pamphlet about hip replacement, COVID-19, or diabetes." (Response 32)

Table 4d

Prompt: What is at least one aspect of the workshop that you feel the presenter has done well to help facilitate your learning? Please be specific.

Post-Workshop Survey (n = 37)

"The exercise about word length was a good way to emphasize the importance of plain language" (Response 3)

"something that was helpful was the group activities and discussions; I also appreciated the captions under the PowerPoint" (Response 8)

"the activity effectively make me realize how important communication and using "plain words" are to get info across" (Response 14)

"The thinking exercises and 3+ syllables and sentence length activity we did. The workshop activities we did were interesting and helped facilitate my learning." (Response 17)

"Obviously spent lots of time researching and preparing, was well thought out and organized, slides were easy to read and understand. Presenter demonstrated good use of health literacy while explaining the topic." (Response 19)

"I think that the hands-on activities at the end helped reinforce the material in a way that you can't get without being hands-on." (Response 33)

"I understand what health literacy is now. Great job breaking it down. Activities were super helpful" (Response 35)

"I liked all of it. I think it was great to actually practice using SMOG together. It was definitely eye-opening AND very important right now." (Response 36)

Discussion

While the participant learning objectives were each achieved to a meaningful degree and there was largely positive feedback, there were also areas identified for improvement. The content on plain language and readability from the "Communicating in Plain Language" workshop (Thomas, 2020), were included in the "The Importance of Health Literacy" workshop (Kamp & Thomas, 2022), along with the inclusion of new content on verbal communication and historical perspectives towards health literacy. For any future adaptations of the present workshop materials, it is important to note post-workshop survey responses to the prompt for points of improvement in the workshop (see Table 4c). Some of these suggestions include: (a) allowing more time to go over the material and to complete activities, (b) adding more graphics and fewer words on slides, (c) providing personal anecdotes, and (d) including health-related case studies. Seeing as the first two suggestions for improvement are logistical or formatting suggestions, it is the latter two that should be focused on for future workshop adaptations. Asking participants to think about a personal anecdotal experience related to the topic and pair with a peer before sharing with the larger group would be successful in abbreviating periods of silence following discussion-prompting questions. Some potential discussion questions to include in the form of an icebreaker or a think-pair-share activity could be found in various pieces of literature from Dr. Thomas. I believe the inclusion of this type of activity asking for personal anecdotes relating to the subject matter would be a strong point for the improvement of this workshop. Moreover, the inclusion of health-related case studies would provide students with real-world examples of health literature and more relevant material for applying the learned concepts like plain language substitutions and minimizing polysyllabic words.

Conclusion

The purpose of this experiential senior project was to facilitate a workshop for kinesiology and public health students on the topic of lay communication of health information, which was revised from existing material created by Dr. Thomas. Through completion of the present experiential senior project, the student met the identified project expectations and student learning objectives, demonstrated competency in the Kinesiology Program Objectives for the Bachelor of Science degree in Public Health, as well as demonstrated achievement of the University learning objectives for senior project (see Appendix B). Through a rapid literature review on topics of readability and plain language in the context of lay communication of health information, the student developed an understanding of these concepts for how they relate to health literacy. The review of literature elucidated three additional ways the revised workshop was in accordance with a conceptual model for teaching undergraduate students how to effectively communicate health information: these were (a) peer-led instruction, (b) reference multiple modes of communication, and (c) use of reflective exercises (e.g., discussion questions). Analysis of results from the pre-post workshop survey evidenced participants realized to a meaningful degree the workshop learning objectives (e.g., define health literacy, and list tips for effective communication). The senior project student identified several ways to improve the workshop using two sources of information: (a) reflection on her experience in organizing and delivering the revised workshop, and (b) feedback provided by workshop participants. Overall, findings of this experiential senior project showed ways designing and participating in a health literacy promotion workshop could be educationally valuable for pre-health professional college students. Ways to improve upon the present workshop materials were presented and discussed.

References

Farmanova, E., Bonneville, L., & Bouchard, L. (2018). Organizational health literacy: Review of theories, frameworks, guides, and implementation issues. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, *55*, 1-17. https://doi.org/10.1177/0046958018757848

Hockert, R. F., Thomas, J. D., Cutner, E. L., & Vega, R. A. M. (2021). Direct measure of how well end-users understand physical activity promotion material: A road less traveled in kinesiology: Preliminary findings of a rapid systematic review [Abstract]. *Western Society for Kinesiology & Wellness 66th Annual Conference Program*, 19. Virtual Conference: Western Society for Kinesiology & Wellness. https://www.wskw.org/past-conferences/

House Office of the Legislative Counsel [HOLC], U.S. House of Representatives. (2010, May 1). *Compilation of patient protection and affordable care act: As amended through May 1, 2010, including Patient Protection and Affordable Care Act health-related portions of the Health Care and Education Reconciliation Act of 2010*. http://housedocs.house.gov/energycommerce/ppacacon.pdf

Kamp, S. J., & Thomas, J. D. (2022, January 26). *The importance of health literacy*. [Student-led presentation and workshop]. Experiential Senior Project (HLTH 460), Department of Kinesiology and Public Health, College of Science and Mathematics, California Polytechnic State University, San Luis Obispo.

Kutner, M., Greenberg, E., Jin, Y., and Paulsen, C. (2006). *The Health Literacy of America's Adults: Results From the 2003 National Assessment of Adult Literacy* (NCES 2006–483).

U.S. Department of Education. Washington, DC: National Center for Education Statistics

https://nces.ed.gov/pubs2006/2006483.pdf

Laing, R., Thompson, S. C., Elmer, S., & Rasiah, R. L. (2020). Fostering health literacy responsiveness in a remote primary health care setting: A pilot study. *International Journal of Environmental Research and Public Health*, *17*(8). Article number 2730. https://doi.org/10.3390/ijerph17082730

Liu, C., Wang, D., Liu, C., Jiang, J., Wang, X., Chen, H., Ju, X., & Zhang, X. (2020). What is the meaning of health literacy? A systematic review and qualitative synthesis. *Family Medicine and Community Health*, *8*(2). https://doi.org/10.1136/fmch-2020-000351

Liu, H., Zeng, H., Shen, Y., Zhang, F., Sharma, M., Lai, W., Zhao, Y., Tao, G., Yuan, J., & Zhao, Y. (2018). Assessment tools for health literacy among the general population: A systematic review. *International Journal of Environmental Research and Public Health*, *15*(8), 1711. https://doi.org/10.3390/ijerph15081711

Love, B. C., Smith, C. N., & Thomas, J. D. (2021, April 26). Video summary of "*how credible is online physical activity advice? The accuracy of free adult educational materials.*" [Video]. Department of Kinesiology and Public Health, College of Science and Mathematics, California Polytechnic State University, San Luis Obispo. https://digitalcommons.calpoly.edu/kinesp/14/

McLaughlin, G. H. (1969). SMOG grading—A new readability formula. *Journal of Reading*, *12*, 639-646. http://www.jstor.org/stable/40011226

National Literacy Trust. (2008). *Readability – how to test how easy a text is to read*. http://aspiruslibrary.org/literacy/SMOG%20Readability%20Formula.pdf

Network of the National Library of Medicine [NNLM]. (2021). *Effective Health Communication and Health Literacy: Understanding the Connection. NNLM Training Office.* https://nnlm.gov/training/class-catalog/effective-health-communication-and-health-literacy-understanding-connection.

Santana, S., Brach, C., Harris, L., Ochiai, E., Blakey, C., Bevington, F., Kleinman, D., & Pronk, N. (2021). Updating health literacy for healthy people 2030. *Journal of Public Health Management and Practice*, *Publish Ahead of Print*. https://doi.org/10.1097/phh.0000000000001324

Saunders, C., Palesy, D., & Lewis, J. (2019). Systematic review and conceptual framework for health literacy training in health professions education. *Health Professions Education*, *5*(1), 13–29. https://doi.org/10.1016/j.hpe.2018.03.003

Smith, C. N., & Thomas, J. D. (2020, September 28). Video summary of "*analyzing suitability: are adult web resources on physical activity clear and useful?*" [Video]. Department of Kinesiology and Public Health, College of Science and Mathematics, California Polytechnic State University, San Luis Obispo. https://digitalcommons.calpoly.edu/kinesp/13

Thomas, J. D. (2020, February 19). *Communicating in plain language.* Cal Poly BEACoN Undergraduate Student Workshop, Department of Kinesiology and Public Health, College of Science and Mathematics, California Polytechnic State University, San Luis Obispo.

Thomas, J. D., & Cardinal, B. J. (2021). Health science knowledge translation: Critical appraisal of online physical activity promotion material. *Nursing and Health Sciences*, *23*(3), 742-753. https://doi.org/10.1111/nhs.12864

Thomas, J.D., Kennedy, W., & Cardinal, B. J. (2022). Do written resources help or hinder

    equitable and inclusive physical activity promotion? *International Journal of Kinesiology*

    in Higher Education, *6*(1), 39-55. https://doi.org/10.1080/24711616.2020.1779628

Thomas, J. D., Uwadiale, A. Y., & Watson, N. M. (2021). Towards equitable communication of

    kinesiology: A critical interpretive synthesis of readability research: 2021 National

    Association for Kinesiology in Higher Education Hally Beth Poindexter Young Scholar

    Address. *Quest*, *73*(2), 151-169. https://doi.org/10.1080/00336297.2021.1897861

Appendix A

Glossary

Efficacy- *the capacity of material [the workshop] for producing the desired result [a basic or intermediate understanding of the material, health literacy]*

Effectiveness- *how well material [the workshop] produces the desired result [a basic or intermediate understanding of the material, health literacy]*

Individual Health Literacy- *The degree to which individuals have the capacity to find, evaluate, understand, communicate, and use health information and services to inform health-related decisions and actions for themselves and others*

Organizational health literacy- *The degree to which organizations equitably enable individuals to find, understand, and use information and services to inform health-related decisions and actions for themselves and others*

Readability- *the degree to which written communication is easily able to be read and understood by large and diverse audiences*

Plain Language- *language used in communication that requires little to no prior knowledge intended to increase user literacy by promoting basic and complete knowledge*

Appendix B

Senior Project Contract (Rev. 12-29-2021)

Student Information
Full Name: Sarah Jean Kamp   Cal Poly Email address: skamp@calpoly.edu
Faculty Supervisor Information
Faculty Name: Jafra D. Thomas   Faculty Email address: jthoma84@calpoly.edu
Enrollment Information
Select: HLTH **460**
Number of units: **1 unit**
Quarter of enrollment: **Winter 2022**

University Senior Project Requirements
   A. commence when, or after, a student has earned senior standing, though completion of preparatory courses and/or research may precede senior standing;
   B. serve as a bridge from the college experience to professional/postgraduate readiness;
   C. include clearly defined student learning outcomes that are aligned with program learning objectives;
   D. have faculty oversight with scheduled meetings for which specific timelines/outcomes are defined;
   E. include a formal proposal and/or statement of intent to be submitted to the faculty advisor;
   F. involve inquiry, analysis, evaluation, and creation;
   G. demonstrate core competencies in critical thinking, written and/or oral communication, information literacy, and quantitative and/or qualitative reasoning;
   H. require a process/production and culminate in a final product as defined at the program level;
   I. include an explicit element of self-reflection;
   J. adhere to discipline-specific norms of academic integrity and ethical practices;
   K. be individually and formally assessed;
   L. include a minimum count of 3 units, or 90 hours of work (1 unit and 30 hours per HLTH 460 requirements), with no maximum;
   M. take no more than three quarters to complete;
   N. be assigned grades consistent with Cal Poly's grading policy.

Project Information
Workshops on Lay Communication

Deliver a 50-minute workshop on lay communication to kinesiology and/or public health majors. This project entails scheduling the workshop, practice in facilitating the workshop, marketing the workshop, and recruiting workshop participants.[1] This project includes adapting previous workshop material developed by Dr. Thomas or his students, by improving/adding activities or updating examples.[2] This project includes the execution of a rapid literature review of original research published within the last 5 years, then summarizing the results as an annotated

bibliography.[3] Upon completion of the workshop, the student is expected to write a brief reflection on ways to improve the workshop (1-2 paragraphs).[4]

Start date: September 27, 2021

End date: March 18, 2022

Total hours to be completed: **30 hours**

Project Expectations
Expectations (for both Student and Faculty Supervisor)
1. Have faculty oversight with scheduled meetings for which specific meeting dates and times are clearly set in advance and any changes to meeting dates or conflicts are communicated clearly in advance.
2. Agree to follow the proposed project timeline and workflow attached to this document.
3. Open communication channels in relation to planning and logistics are maintained.
4. All materials are kept in a central location accessible to all parties.

Student Expectations
1. Adopt a leadership role in the design and execution of a research or creative project.
2. Be prompt, responsible, and self-motivated during all project-related activities.
3. Keep a detailed record of time logged (Minimum of 30 hours of work per unit of enrollment).
4. Maintain a detailed record of documents and project components
5. Deliver an oral presentation of their experiences and/or findings from the project to an appropriate audience (e.g., CSM Undergraduate Research Symposium, local/regional/national conference, community group, other members of the research team, etc.)
6. Fulfill all requirements of the project agreed upon by the student and advisor in the initial contract including any faculty-approved ethics and safety training commensurate with the nature of the data collected or community involvement.
7. Upon completion of the project, submit a 500-1,000-word written document on their experience working on the project (e.g., reflection/literature review/brief report/etc.).
8. Submit the final product to the advisor to be added to the KPH Senior Project Repository.

Student Learning Objectives
Personal Skill Set Development Goals

1. The student should have experience being a project lead or behaving like a leader to independently manage projects outside of the classroom.
2. The student should have an open mind, a tenacious work ethic, and be a self-starter.
3. The student should have good skills in organization and record-keeping (or willing to develop in these areas).

Project Specific Learning Objectives

Student-Identified Project Learning Objectives	Project Component (PC)
1. Acquire an understanding of the time management, planning, and processes that go into developing, administering, and evaluating an education-based workshop on health-related material. 2. Identify and summarize the elements of effective communication in different modes	Deliver a 50-minute workshop on lay communication to kinesiology and/or public health majors (PC^1).
3. Make decisions in a reasoned, organized, and efficient manner, delegating work when applicable	This project entails scheduling the workshop, practice in facilitating the workshop, marketing the workshop, and recruiting workshop participants (PC^2).
4. Synthesize relevant concepts, theories, and evidence from empirical research to justify the need for and importance of a research or creative project.	This project includes adapting previous workshop material developed by Dr. Thomas or his students, by improving/adding activities or updating examples (PC^3).
5. Analyze primary or secondary data or information in the spirit of empirical inquiry.	This project includes the execution of a rapid literature review of original research published within the last 5 years, then summarizing the results as an annotated bibliography (PC^4).
6. Reflect on project-related experiences in a way that encourages growth and sustainability.	Upon completion of the workshop, the student is expected to write a brief reflection on ways to improve the workshop (1-2 paragraphs) (PC^5).

Note. Each student-identified learning objective is informed by each of the identified project components

KPH Department BS Public Health Program Learning Objectives

Learning Objective	Project Component	Explanation
I. Describe the history, philosophy, and core functions of public health in the U.S. and globally.	PC^4	Lay communication and health literacy act as a core function of public health by playing a role in prevention, education of the public, and competence of public health professionals.
II. Analyze factors that affect human health and contribute to health disparities including socio-economic, behavioral, biological, environmental, and systemic factors.	PC^4, PC^5	By conducting a literature review on lay communication and health literacy, the student will be able to develop a deeper understanding of the ways communication of health material and health outcomes are related. The post-workshop reflection on the project experience and the topics covered by this program allow the student to expand on this understanding in a reflective way.
III. Develop, implement, and evaluate public health programs that improve population health outcomes and promote health equity.	PC^2, PC^5	By developing a 50-minute workshop on lay communication the student is able to gain experience in developing, implementing, and evaluating a program on public health concepts and materials. The post-workshop reflection and evaluation is designed and intended to establish "big picture" thinking in how the material relates to the promotion and improvement of health outcomes and health equity.
IV. Apply epidemiological and public health research methods to assess community health needs, assets, and outcomes.	PC^3, PC^4	Development of this workshop from previously administered workshop materials and peer-reviewed literature requires the understanding and application of public health research methods.
V. Communicate public health information in oral, written, and visual forms through a variety of media.	PC^2, PC^5	The format of this workshop allows for the communication of public health materials related to lay communication and health literacy as a concept. The doubled element of communication present in the program allows for a more in-depth understanding of how to communicate public health materials as well as how to design and evaluate effective communication.
VI. Describe the legal, ethical, structural, and economic	PC^4	Through the execution of a literature review, the student is expected to develop an

dimensions of health care and policy, and the role of different governmental entities in public health.		understanding of how these dimensions of public health play a role in lay communication and health literacy of public health-related material.

Note. This table identifies how the student-identified learning objectives and project components map onto and correlate with the KPH Department BS Public Health Program Learning Objectives

University Specific Senior Project Learning Objectives

Learning Objective	Project Component	Explanation
A. Think critically and creatively	PC^3, PC^4, PC^5	The development, facilitation, implementation, and evaluation of the workshop on lay communication of health-related material by using previously administered workshop materials and evidence from peer-reviewed literature followed by a thoughtful reflection on the experience requires critical and creative thinking skills on behalf of the student to tie together multiple components of this workshop in an effective manner.
B. Communicate effectively	PC^2, PC^5	The concepts in this workshop of lay communication of health-related material and health literacy allow the student to effectively communicate their findings but also evaluate the effectiveness of other communication related to public health topics.
C. Demonstrate expertise in a scholarly discipline and understand that discipline in relation to the larger world of the arts, sciences, and technology	PC^3, PC^4	The adaptation of previous workshop materials and scholarly peer-reviewed literature requires an in-depth understanding of the material and the role lay communication of health-related material plays in the larger field of public health.
D. Work productively as individuals and in groups	PC^2	The student is expected to adopt a leadership role in the development, facilitation, and evaluation of this workshop in a self-organized manner while maintaining clear communication and collaboration with the project faculty advisor and other students as necessary.
E. Use their knowledge and skills to make a positive contribution to society	PC^5	The post-workshop reflection requires suggestions on how to improve material for future workshops which creates the opportunity for a positive contribution to

		society by furthering the expansion of knowledge and understanding of the importance of lay communication and health literacy in public health settings.
F. Make reasoned decisions based on an understanding of ethics, respect for diversity, and an awareness of issues related to sustainability	PC^2, PC^3, PC^5	The development, facilitation, and implementation of a workshop on health-related communication requires the consideration of issues related to ethics, diversity, and sustainability and how they relate to effective and ineffective communication. The post-workshop reflection allows for an evaluation of how to improve workshop materials for future uses and maintain workshop sustainability.
G. Engage in lifelong learning	PC^5	The post-workshop reflection allows for personal reflection on the senior project experience as well as how to expand on workshop concepts and continue to place emphasis on the importance of lay communication of health-related material and health literacy.

Note. This table identifies how the student-identified learning objectives and project components map on to and correlate with the University Specific Senior Project Learning Objectives

Evaluation

In accordance with the Cal Poly University Senior Project Requirements, an evaluation will be consistent with [Cal Poly's grading policy](.).

Full completion of all the above tasks by their respective due dates: A
Completion of all of the above tasks past due dates or some incomplete assignments: B
Partial completion of tasks: C
Partial completion of tasks and poor performance: D
No work: W

I have read and understand the expectations and the goals and objectives of this research-based senior project experience.

For this submission, signatures to this contract were removed as a security measure. Signed copies of this contract are retained by student and faculty member.

Appendix C

Project Timeline and Workflow

Project Timeline & Workflow

Pre-Planning
1. Fall Quarter Weeks 10/4-10/11
   a. Finalize Timeline & Workflow
   b. Explore topics and audiences in the coming weeks
   c. Draft expectations and project contract
   d. Meet 10/13
2. Fall Quarter Weeks of 10/18-10/25
   a. Finalize topic and audience
   b. Contract is finalized and agreed upon by all parties
   c. Meet 10/27
3. Fall Quarter Weeks of 11/1-11/8
   a. Overview of HLTH curriculum for potential learning objectives
   b. Begin literature review for relevant literature for the topic
   c. Meet 11/10
4. Fall Quarter Weeks of 11/15-11/22
   a. Pick a range of dates for presentation; seek approval for location reservation
   b. Literature to be reviewed is finalized; review is in progress
   c. Draft learning objectives from extracted HLTH curriculum
   d. Meet 11/24 (Thanksgiving, meet as needed)
5. Fall Quarter Weeks of 11/29-12/6
   a. Finalize date and location for the presentation
   b. Complete draft of literature review for feedback; include appendices
   c. Draft learning materials
   d. Meet 12/8 (Meet as scheduled)
6. Winter Break (Weeks of 12/13-12/20-12/27)
   a. Finalize literature review
   b. Create advertising materials
   c. Email check-in by 12/29

Items to be completed by 01/01/2022:
   ▫ Project Contract and Expectations Completed
   ▫ Topic and Audience Selected
   ▫ Literature for Review Completed
   ▫ Program Learning Objectives Drafted
   ▫ Outline of Materials Drafted
   ▫ Date Selected and Location Reserved
   ▫ Advertising Materials Drafted

Work Period & Execution
1. Winter Quarter Week 1
   a. Finalize learning objectives
   b. Finalize advertising material; begin advertising
   c. Brainstorm incentives/handouts needed for the presentation

        d. Meet 1/03
2. Winter Quarter Week 2
        a. Create an evaluation form specific to the presentation
        b. Social media outreach/advertising
        c. Have any handouts or incentives needed for presentation on hand
        d. Rehearsal of presentation
        e. Meet 1/10
3. Winter Quarter Week 3
        a. Finalize materials
        b. Rehearsal of presentation
        c. Meet 1/17
4. Winter Quarter Week 4
        a. Rehearsal of presentation
        b. Date of presentation 1/26
        c. Meet 1/24

Post-Presentation and Evaluation
1. Winter Quarter Week 5
        a. Review evaluation form responses
        b. Draft points for improvement and presentation sustainability
        c. Meet 1/31
2. Winter Quarter Week 6
        a. Finalize reflection
        b. Meet 2/7
3. Winter Quarter Week 7
        a. Finalize points for improvement and presentation sustainability
        b. Final Presentation of processes to faculty
        c. Meet 2/14
4. Winter Quarter Week 8
        a. Overview of manuscript
        b. Meet 2/21
5. Winter Quarter Week 9
        a. Final Presentation of processes to faculty 2/28
6. Winter Quarter Week 10
        a. Final Meeting and Evaluation
        b. Meet 3/7

Appendix D

Announcement Flier

Appendix E

RSVP Survey

Health Literacy RSVP - HLTH 460 Senior Project

Summary of Responses (n = 69)

Q1: What is your Cal Poly Email Address?

Q2: Are you interested in attending the workshop on health literacy on January 26th at 7 pm in

Building 43A-150?

- Yes (n = 64)

- No (n = 0)

- Maybe (n = 5)

Q3: How did you hear about this workshop?

- Flier (n = 4)

- KPH Department or Faculty (n = 53)

- PULSE (n = 3)

- STS Department (n = 2)

- Honors Program (n = 0)

- Other (n = 7)

Appendix F

Email Correspondence to RSVP Respondents

SUBJECT: Interest in Workshop on Health Literacy

(Sent Monday, 1/24)

Hello and Happy Week 4!

Thank you for RSVPing for the HLTH 460 Workshop on the importance of health literacy and effective communication of health information. This email is intended to serve as a reminder of the event provide some important information:

- The workshop will be *in person* this Wednesday, January 26th at 7:10 pm in Building 43A Room 150 (lower level of the Kinesiology Tower)

- The workshop will be 50 minutes in length

- There will be an opportunity during the workshop to strengthen an assignment or other written material you may be working on that contains health information.

  - If you do have an assignment or material you would like to work on in the context of this workshop, please bring that with you whether that means bringing a laptop, notebook, or another form of technology.

  - If you do not have an assignment in the works, other samples will be provided.

- Remember to properly mask and socially distance

- Snacks will be provided at the end to avoid eating indoors (but they *will* be there 😀)

"The single biggest problem in communication is the illusion that it has taken place." - George Bernard Shaw

Thanks again for your interest,

Sarah

SUBJECT: Interest in Workshop on Health Literacy

(Sent Wednesday, 1/26)

Today is the day!

Thank you for RSVPing for the HLTH 460 Workshop on the importance of health literacy and effective communication of health information. This email is intended to serve as a reminder of the event provide some important information:

- The workshop will be ***in person*** this evening, Wednesday, January 26th **at 7:10 pm in Building 43A Room 150** (lower level of the Kinesiology Tower)

- Please bring an in-progress assignment with you. If you do not have one, a sample work will be provided.

- Remember to properly mask and socially distance. A graphic is attached to this email for how to ensure you are wearing your mask properly.

- Snacks will be provided at the end to avoid eating indoors

See you this evening,

Sarah

Let's work on building a bridge between these two:

Appendix G

Pre-Workshop Survey

Workshop Survey:

HLTH 460 Undergraduate Student Workshop on Health Literacy and Effective Communication

Date: _____

Define "health literacy" in your own words? Please be specific.

List a few tips for effectively communicating health information.

Appendix H

Post-Workshop Survey

End of Workshop Survey:

HLTH 460 Undergraduate Student Workshop on Health Literacy and Effective Communication

Date: _____

Define "health literacy" in your own words? Please be specific.

List a few tips for effectively communicating health information.

What is at least one aspect of the workshop that the presenter could improve to make it more effective for learning? Please be specific.

What is at least one aspect of the workshop that you feel the presenter has done well to help facilitate your learning? Please be specific.