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Board 39: Student Opinions on Example Problem 'Solution Walkthroughs' for Civil Engineering Topics

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Student Opinions on Example Problem "Solution Walkthroughs" for Civil Engineering Topics

Abstract

This paper presents the results of a nationwide survey conducted across several universities, specifically examining student perceptions and opinions regarding an innovative problem solution presentation style called a "solution walkthrough." The walkthrough format offers features like a game plan, initially concealed answers and detailed explanations at each step, and insightful solution summaries. This can be summarized as providing significant contextual information and explanation in addition to the components of traditional engineering solutions. The goal is to provide a better student experience with solutions and increase student engagement, presumably, improving learning. Also, better engagement with contextually rich material could help reduce the "plug-and-chug" learning strategy.

Overall, 91% of respondents found the walkthroughs "very helpful" or "helpful." The detailed written explanations at each step were rated as the most beneficial aspect, with 59% rating them "very helpful." Surprisingly, 53% of respondents preferred walkthroughs over video solutions, but noted that walkthroughs would also be a desired supplement to video solutions. Results also indicated that instructors building their own walkthroughs should emphasize the detailed step-by-step explanations rather than initially concealing calculation results. Overall, the findings warrant instructor consideration of walkthroughs as part of a diverse set of learning resources to be provided for civil engineering students.

Introduction

The familiar conventional format of engineering problem solutions typically involves presenting students with solutions that follow a predictable written out format: mathematical setups, a sequence of steps for numerical calculations, and perhaps a visual representation or two. Recognizing the limitations of this traditional format, alternative instructional methods could be explored to promote student understanding and engagement. An alternative method is the so-called "Solution Walkthrough" format which offers a structured approach encompassing example problem setup, planning, step-by-step execution with initially hidden results, and a comprehensive solution summary.

The purpose of this paper is first to present the walkthrough format in concept and structure, as it appears on McGraw Hill's engineering textbook resources website, AccessEngineering [1]. Instructors can develop their own walkthroughs based on the example and discussion provided. The second goal of this paper is to present student perceived effectiveness and student opinions on the approach through the results of a nationwide survey conducted across various universities and four McGraw Hill civil engineering textbooks, [2] through [5]. Specific pedagogical effectiveness is not studied, rather the intention of the walkthrough format is to encourage student engagement with the material which can reasonably be assumed to also increase student learning. However, the latter is not measured here.

Increasing student participation with material, especially context-rich content, should help battle the tendency for students to fall into the "plug-and-chug" habit, [6] and [7].

Solution Walkthrough Format

The "Solution Walkthrough" format, featured in McGraw Hill's online engineering textbook platform and explored in this paper, structurally organizes the problem-solving process into key components: problem objectives, game plans, numbered steps, sub-steps, summaries, and reminders. This organization facilitates students' methodical approach to complex engineering problems while providing context at each step. Notably, solution details are concealed initially, revealed through "show me" buttons, promoting independent engagement before answers are incrementally disclosed. Detailed explanations accompany each step, referencing equations, tables, and textbook sections for clarity on numerical values. The game plan guides students through key steps, while the wrap-up reinforces insights from the solution. Reminders link concepts to additional problems, encouraging further practice using the skills they just practiced.

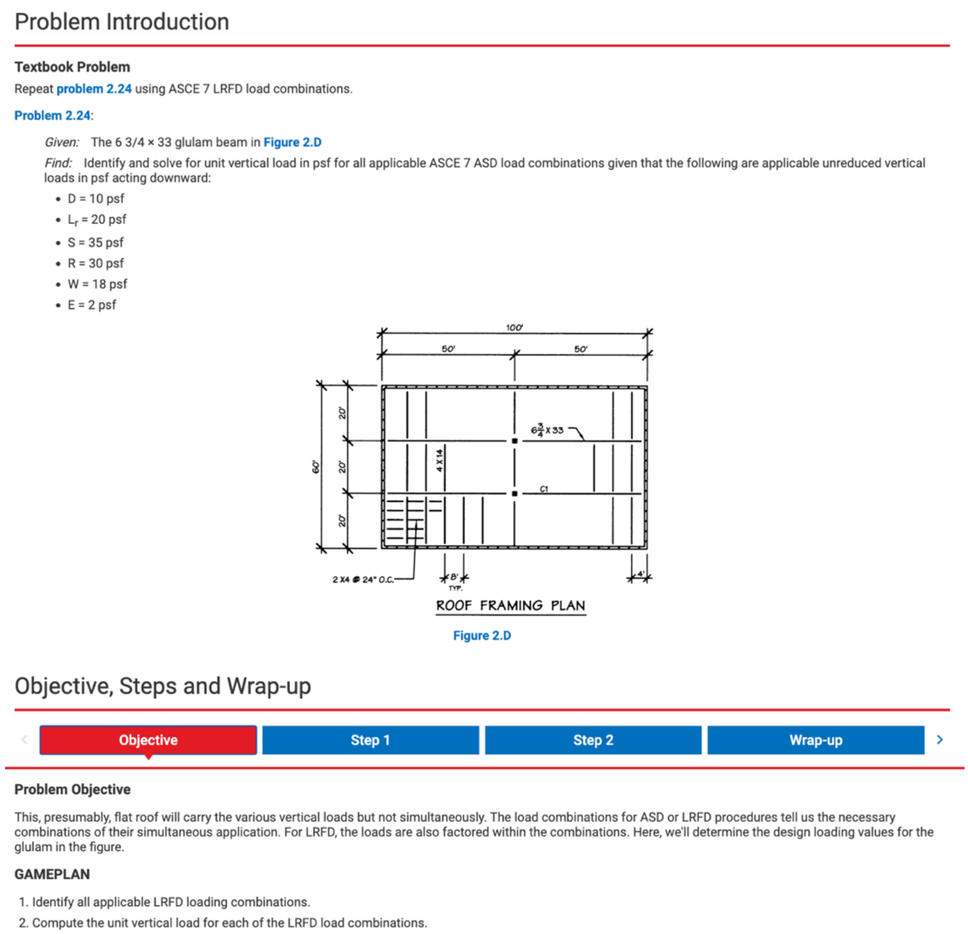
Solution Walkthrough Example and Discussion on the Intent

One specific example is summarized here to demonstrate the solution walkthrough format. Screenshots (used with permission) from the online interactive solution walkthrough tool on McGraw Hill's website are shown with the summary below. However, only a few portions are displayed for the sake of brevity and so that the key characteristics of the format can be observed. The full solution is provided in the **Appendix A**, but it is in a fully expanded static form where no steps are concealed.

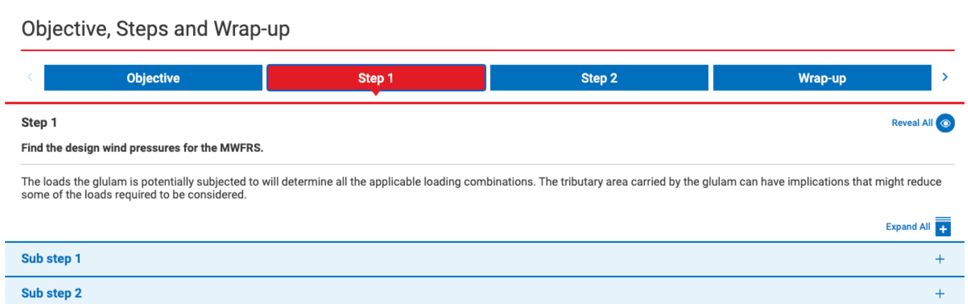
In **Fig. 1**, the example solution covers a problem from *Design of Wood Structures*, [2], that tasks students with identifying and calculating unit vertical loads for a glulam beam using LRFD load combinations. The glulam beam carries various unreduced vertical loads including dead load, live load, rain load, snow load, roof load, and earthquake load. In **Fig. 1a**, the format is displayed showing the problem statement (which largely remains during engagement with the system) along with the Problem Objective and Game Plan. These provide the student some guidance without showing any work and without immediately or explicitly pointing out to the student specifically what to do. In **Fig. 1b**, Step 1 is revealed, as are two sub step buttons, indicating to the student some additional work will be required to complete Step 1.

In **Fig. 2a**, Sub step 1 is expanded and two "Show me" buttons can be observed. This is one of the primary and unique features of the walkthrough format. The text gives the student context and an idea of what to do, but keeps the work hidden until the student has the chance to try it for themselves. Further, in **Fig. 2b**, the first "Show me" button is expanded allowing the student to check their attempt. Then in **Fig. 2c**, there is some reflection on the prior steps, an explanation about how they fit into the current step, and more hints about the how to move forward. This is also an important feature of the walkthrough format, at each step students are carefully guided through the problem without simply giving the answer away immediately.

The last stage of the interactive walkthrough format is shown in **Fig. 3**, with the Wrap-up, connection with other similar problems, and various references displayed together. These sections provide the student the resources needed to reflect on the solution and reduces the decision friction of finding another similar problem to use for practicing.

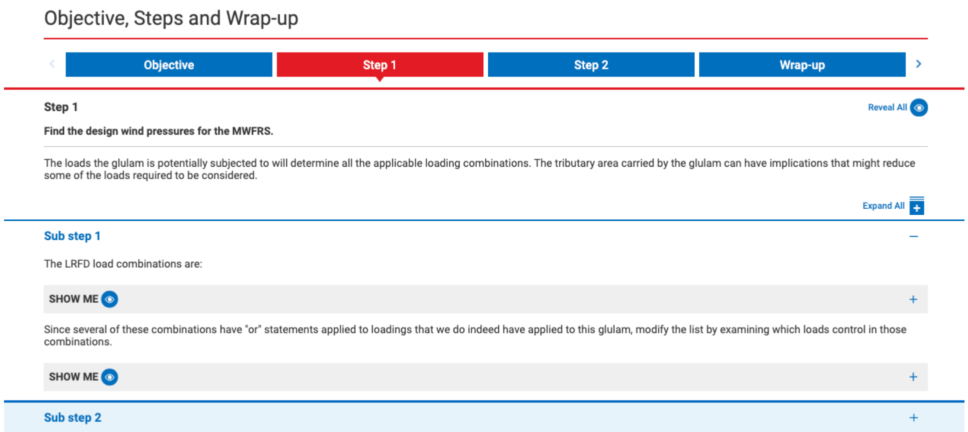


(a) Problem Statement, Problem Objective, and Game Plan

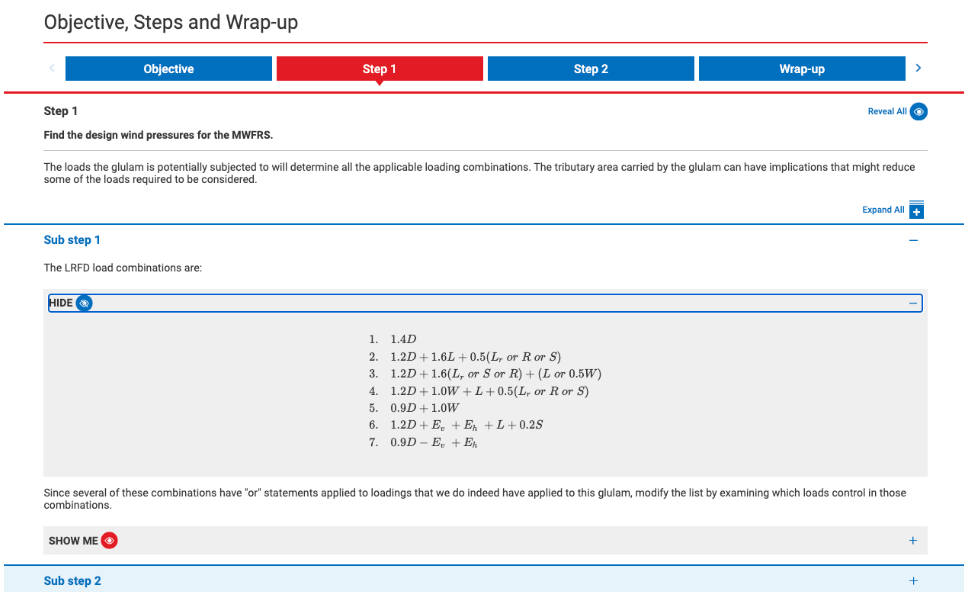


(b) Step 1 and its Sub step buttons displayed

Figure 1 Introduction to example solution walkthrough, [1] and [2] (Images courtesy of McGraw Hill)

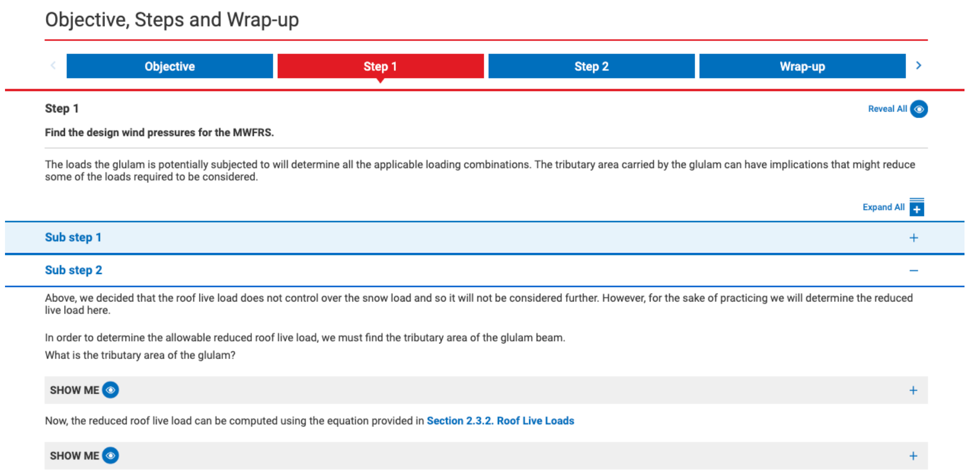


(a) Step 1 expanded showing two “Show me” buttons that hide the portions of the answer.



(b) Step 1 and the first “Show me” button expanded.

Figure 2 Expanded portions of the walkthrough solution.
[1] and [2] (Images courtesy of McGraw Hill)



(c) Sub step 2 expanded, revealing contextual explanation and coaching on next steps.

Figure 2 (cont.) Expanded portions of the walkthrough solution. [1] and [2]

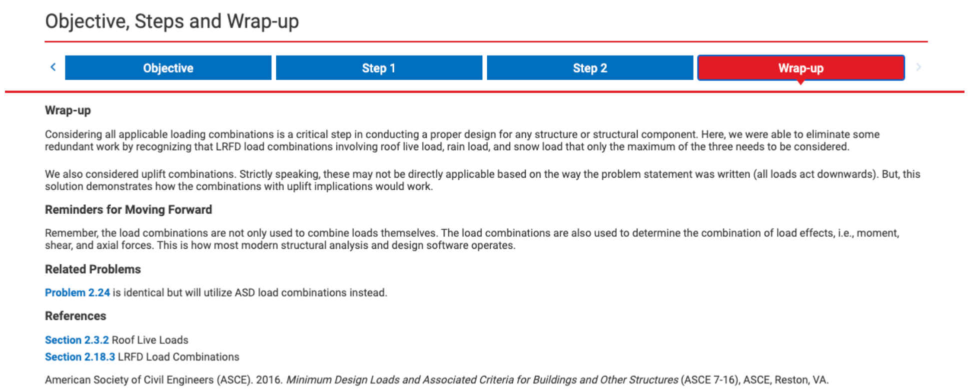


Figure 3 Wrap-up, Reminders, Related Problems, and solution References sections. [1] and [2] (Images courtesy of McGraw Hill)

Methods: Student Opinion Survey

A survey was conducted in coordination with several instructors at various institutions across the U.S. using McGraw Hill's engineering textbooks and their corresponding online engineering education system containing the solution walkthroughs. The very simple survey was intended only to gauge students' perceived usefulness of the solution walkthroughs in learning the content. There was minimal coordination between instructors and no special instructions were given besides to make the students aware of the walkthroughs. Participation was completely voluntary and although providing a student ID was optional, this information was never used and was destroyed.

Limitations and Survey Intent

This survey was aimed solely at gathering perceived student effectiveness and opinions about various aspects of the walkthrough format. There were no specific learning objectives identified and no student performances or learning gains were measured. This would require a closely coordinated effort between the involved instructors, a much more detailed survey, and collection of much more data (e.g., scores on assignments or exams, final grades, comparison of classes that used the walkthroughs versus those that did not), all of which is well beyond the scope of this study.

The goal of the survey was only to obtain student opinions about the format in order to evaluate whether the walkthrough format will promote student engagement with the material. A positive outcome would imply learning gains due to increased motivation to study, but this was not measured. This implication is hoped to encourage others to consider the walkthrough format in their teaching resources.

Survey Questions

First, a few questions were asked to identify the student's institution, textbook being used (i.e., the topic), where they currently were in the academic term, their academic year, and how many walkthrough solutions they had interacted with. These results are shown in **Fig. 4** and are discussed in the next section.

The substantive questions to gauge student perceived usefulness of the walkthrough solutions are listed below. The full survey is provided in **Appendix B**.

Q1) How helpful did you find the solution walkthroughs overall?
Q2) How helpful were the solutions in helping you learn the topic or procedure with respect to each attribute of the walkthrough solutions?
  a) Answers are initially hidden.
  b) Each step has a clear written explanation.
  c) Game plan at the beginning.
  d) Summary at the end.
Q3) How do you feel about these solution walkthroughs vs. videos walking you through the same solution? Multiple choice:
  a) I prefer the walkthrough solution.
  b) I prefer a video solution.
  c) I do not have a preference.
  d) Other (free entry)
Q4) Any comments about your preference for video versus walkthrough?
Q5) Any other comments of observations?

Respondent Demographics

The demographics questions and results are reflected in **Fig. 4**. Respondents came predominantly from five institutions, with the University of Texas at Austin representing the largest share around 39%. The most common textbook used was on the topic of *Design of Wood Structures* [2] (72%), followed by *Water and Wastewater Engineering* (16%) [3]. The majority were seniors (74%), while about 14% were graduate students. Most respondents used between 2-5 solution walkthroughs (41%) or 5-8 walkthroughs (35%). Over half the respondents (52%) said they were in at the end of the semester/term, while many (42%) were in the middle.
Note that *Construction Planning, Equipment, and Methods* [5] had only 3 responses and therefore they are not discussed further.

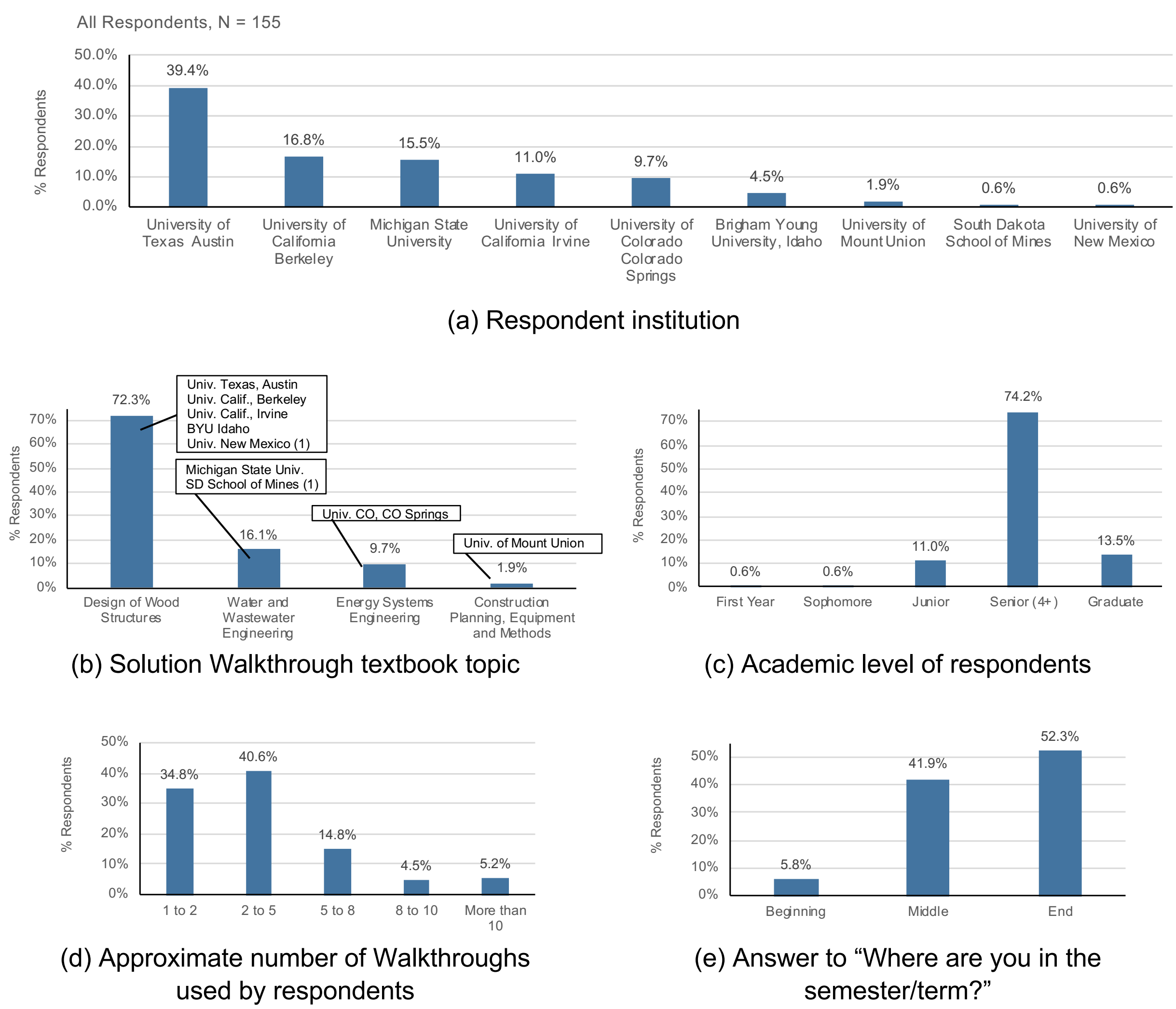


Figure 4 Demographics of survey respondents

Summary of Perceived Walkthrough Helpfulness (Q1 and Q2)

Students rated the overall usefulness of each major aspect of the solution walkthroughs on a five-point Likert scale with 1 being "Not at all helpful" to 5 being "Very helpful." The major aspects of the walkthroughs are listed above in items Q2a-d, with the opinion results presented in **Fig. 5**.

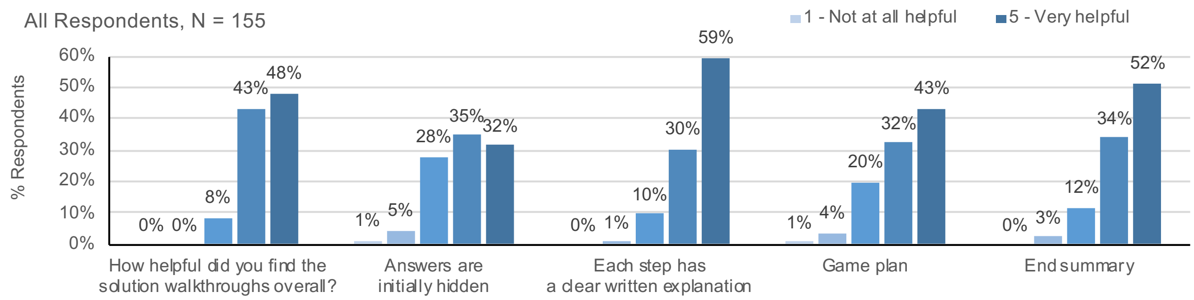
Looking at all responses together, the most beneficial walkthrough attribute, rated "very helpful" by the majority of respondents (59%), is the written explanations accompanying each step. Surprisingly, the least helpful aspect, with only 32% of respondents deeming it "very helpful," was the initially hidden answers. Students still seemed to appreciate this feature, rating it helpful in similar quantities in the 3 and 4 out of 5 range.

Across the various topics, the trends remain fairly similar to the overall results. One exception is in Water and Wastewater Engineering, students overwhelmingly (80%) found the written explanations very helpful. Further, in Energy Systems Engineering, the students found the walkthrough very helpful overall with an 80% rating of "Very helpful."

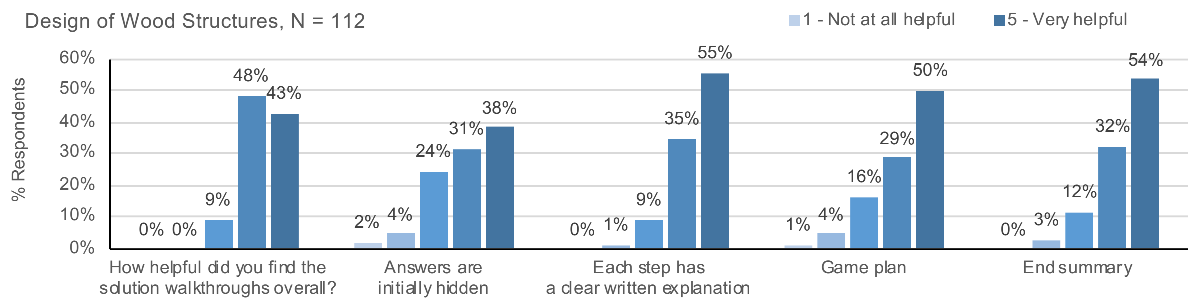
Summary of Preference of Walkthroughs versus Video Solutions (Q3 and Q4)

Survey takers were asked two questions about their preference between walkthroughs and video solutions. In multiple choice Q3 "How do you feel about these solution walkthroughs vs. videos walking you through the same solution?" the majority of students (53%) indicated they prefer the walkthrough solutions over a video solution, while 30% did not have a preference. This includes any free responses (i.e., short answers entered via the "Other" option). Surprisingly, only 17% explicitly expressed a preference for video solutions (see **Fig. 6**). The trend across civil engineering topics was similar.

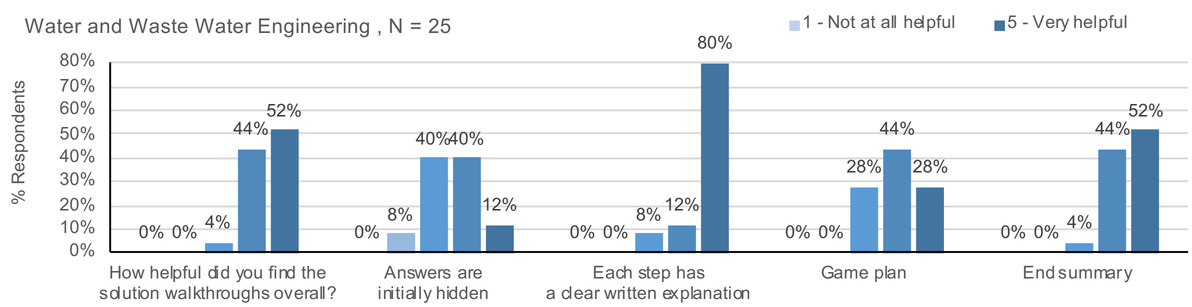
In free response Q4, "Any comments about your preference for video versus walkthroughs?" students expressed a range of perspectives and considerations. Several respondents appreciate the ease of access and clarity provided by walkthrough solutions, emphasizing the convenience of being able to locate specific problem areas quickly. In contrast, some noted challenges with video accessibility and express a desire for easier navigation or clearer access. Others value the fluidity and continuous flow of information in videos, highlighting their preference for uninterrupted learning experiences (e.g., walkthrough features) that allowed them to absorb each step at their own pace.



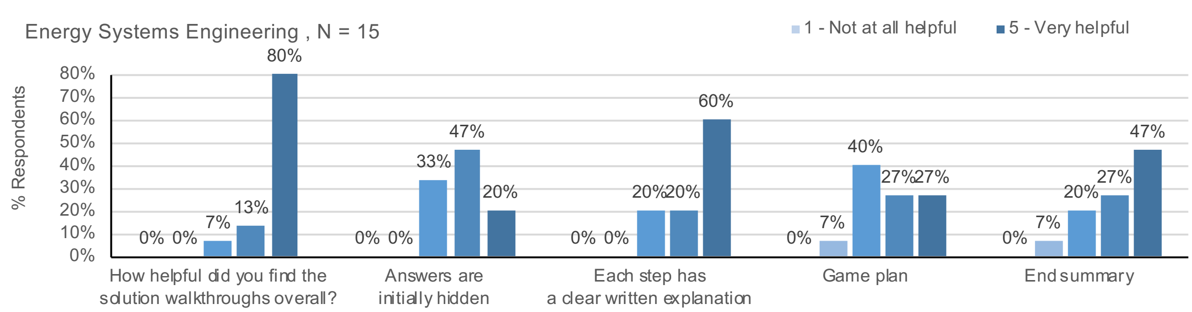
(a) All student respondents



(b) Students using the *Design of Wood Structures* [2] walkthroughs.

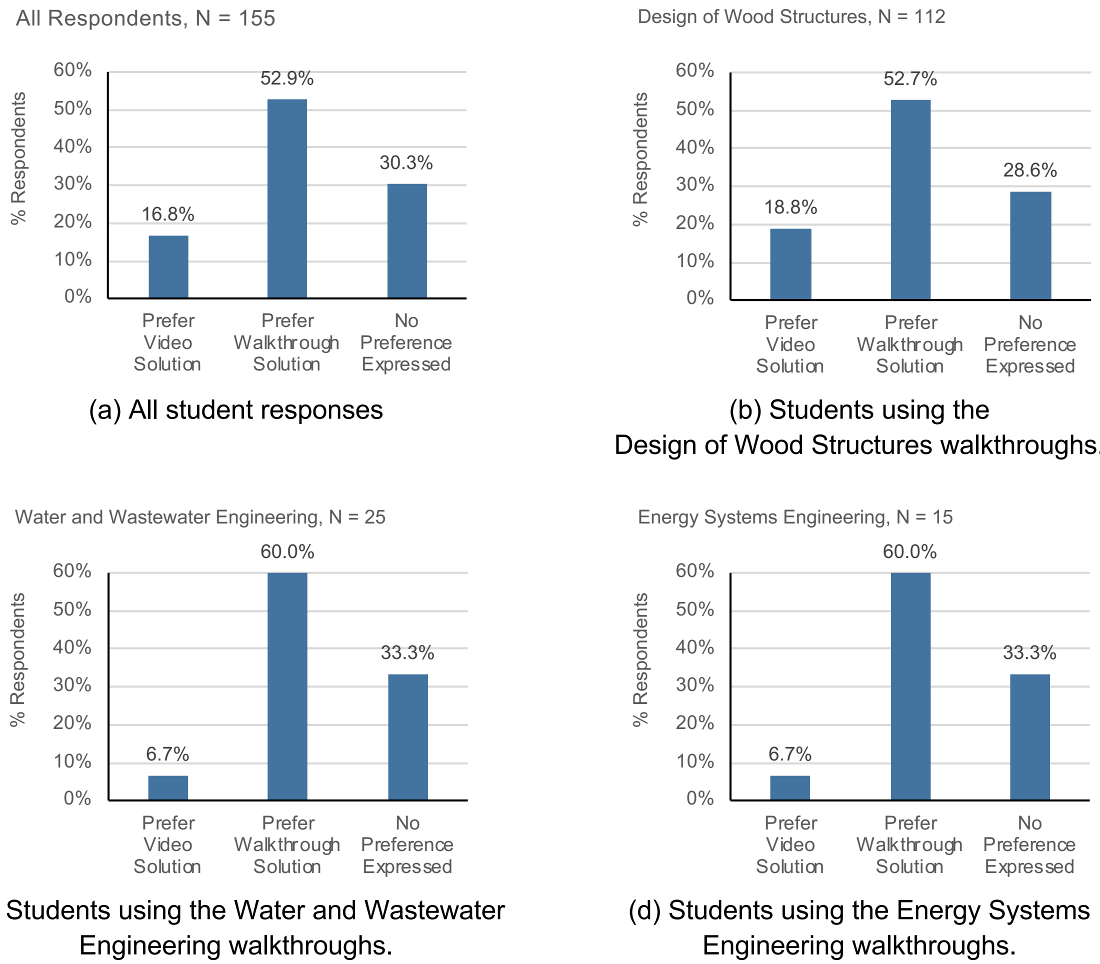


(c) Students using *Water and Wastewater Engineering* [3] walkthroughs.



(d) Students using the *Energy Systems Engineering* [4] walkthroughs.

Figure 5 Responses to: *Q1) How helpful did you find the solution walkthroughs overall?* and *Q2) How helpful were the solutions in helping you learn the topic or procedure with respect to each attribute of the walkthrough solutions?*”



(a) All student responses

(b) Students using the Design of Wood Structures walkthroughs.

(c) Students using the Water and Wastewater Engineering walkthroughs.

(d) Students using the Energy Systems Engineering walkthroughs.

Figure 6 Responses to: *Q3) How do you feel about these solution walkthroughs vs. videos walking you through the same solution?*

Summary of General Comments (Q5)

In response to Q5, “Any other comments or observations?” respondents acknowledged the distinct advantages of each format. Walkthrough solutions were praised for their thoroughness, organization, and flexibility, allowing learners to progress at their own pace and revisit steps as needed. Meanwhile, videos were commended for their interactive nature, providing visual demonstrations and verbal explanations that aid comprehension. Because of these differences, some respondents advocate for a complementary approach, suggesting that both formats have their place in supporting diverse learning styles and preferences.

Additionally, several respondents underscore the importance of comprehensive resources and clear explanations, whether provided through walkthroughs, videos, or a combination of both, to facilitate effective learning experiences. Clearly, walkthrough solutions can play an important role in providing a robust set of resources to students in support of their learning.

Discussion, Conclusion, and Suggestions

In conclusion, this study sheds light on the student perceived helpfulness and general reception of "solution walkthroughs", characterized by a detailed problem setup, step-by-step execution with hidden portions, and comprehensive summaries. Through a nationwide survey spanning multiple universities, students' feedback regarding this structured format was analyzed to find that most students found the walkthroughs very helpful. Students even indicated a preference for the walkthroughs over video solutions.

Students found the written explanations at each step the most helpful out of all features. But, although the hidden portions are meant to drive engagement with the material, students rated this feature “Very helpful” at the lowest rate of all features. This outcome is somewhat encouraging for those who wish to develop their own walkthrough solutions. Since hiding portions could prove difficult depending on what platform one is using. It appears that the most important aspect of walkthrough solutions is just that, the context-rich explanation of the problem.

It is possible that students did not rate the hidden portions highly because this requires the active reveal of the work that they likely know they ought to try first. Since students did not on average interact with more than just a few (see **Fig. 1**) solutions, perhaps the walkthroughs were not an integral or emphasized part of their study resources in the courses. Should instructors emphasize these more as a resource, and provide coaching, it is possible that students would increase their engagement with the hidden answers.

Instructors considering using walkthrough solutions, whether through McGraw Hill’s AccessEngineering site [1] or their own resources, may consider providing some training to their students. Walking through a “walkthrough” in class could prime students to realize their usefulness as a study resource. Instructors could also use walkthroughs in discussion or recitation sessions in place of traditional examples, where the step-by-step and hidden answers could facilitate class discussions or group learning activities due to reduced time needed for the instructor to write out long problems.

Another surprising result was that students indicated a rather strong preference for walkthrough solutions over video presentations among students (see **Fig. 6**) and highlighted the format's utility and accessibility. While acknowledging the advantages of both formats, respondents emphasize the thoroughness and flexibility of walkthrough solutions, complemented by the interactive nature of videos. This signals to instructors that, although students like video solutions, it may be more effective to provide a more robust set of study tools to students. Walkthrough solutions appear to be a good additional resource to drive student engagement.

Disclosure Statements

This study was determined to meet the criteria for exempt Non-Human Subjects Research Self-Determination status via the IRB resources of the Univ. of California, Irvine.

The author was involved in writing some of the walkthrough solutions for McGraw Hill specifically those for *Design of Wood Structures* [2] as an independent contractor. The author does not hold any further financial interest in the resources that are provided by McGraw Hill.

The author utilized large language models (LLMs), specifically systems created by Anthropic and OpenAI, to assist in drafting portions of this manuscript and providing general language editing. The LLMs generated initial draft text for various sections and revisions at the direction of the author and with guidance on the key points to be made. All data presented, technical content, analysis, conclusions, and opinions expressed are solely those of the human author. The author takes full responsibility for the final paper content and acknowledges the potential for limitations in factual accuracy and potential biases inherent in LLMs.

Acknowledgements

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- Dr. Julie Albertson of Univ. of Colorado, Colorado Springs
- Professor Nathan Harris of Brigham Young Univ., Idaho
- Professor Susan Masten of Michigan State University
- Gary Mochizuki of Univ. of California, Berkeley
- Dr. Elias Sagan of Univ. of Texas, Austin
- Emeritus Professor Clifford Schexnayder of Arizona State University (course at Univ. of Mount Union)

A special thanks to Lauren Sapira and Robin Najar of McGraw Hill for facilitating the connections to the instructors and thereby making the survey possible. Thanks, also, to McGraw Hill Publishing for the use of the images from the walkthrough solutions on AccessEngineering.

References

[1] *AccessEngineering* (2024). McGraw Hill, Accessed via: https://accessengineeringlibrary.com/

[2] Breyer, D., Cobeen, K., (2019). Design of Wood Structures- ASD/LRFD, Eighth Edition, McGraw Hill- *Professional Publishing.*

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[5] Peurifoy, R., Schexnayder, C., Schmitt, R., Shapira, A., Cohen, A., (2023). Construction Planning, Equipment, and Methods, Tenth Edition, McGraw Hill- *Professional Publishing.*

[6] Kortemeyer, G., (2016). The Losing Battle Against Plug-and-Chug. *Phys. Teach*. 1 January 2016; 54 (1): 14–17. https://doi.org/10.1119/1.4937964

[7] Bella, D.A., (2003). Plug and chug, cram and flush. *J. of Prof. Issues in Eng. Edu. and Practice*, 129(1), 32-39.

Appendix A – Full Solution Walkthrough Example

The example below can be observed in its online interactive form, courtesy of and presented here with permission of McGraw Hill, at the following link: https://www.accessengineeringlibrary.com/content/book/9781260128673/toc-chapter/chapter2/section/section50#ilo2

McGraw Hill ACCESS Engineering

Design of Wood Structures, 8th Edition

Breyer | Chapter 2 | Problem 2.25

Problem Introduction

Textbook Problem

Repeat **problem 2.24** (https://www.accessengineeringlibrary.com/content/book/9781260128673/toc-chapter/chapter2/section/section50/#ch02pb24) using ASCE 7 LRFD load combinations.

Problem 2.24 (https://www.accessengineeringlibrary.com/content/book/9781260128673/toc-chapter/chapter2/section/section50/#ch02pb24) :

Given: The 6 3/4 × 33 glulam beam in **Figure 2.D** (https://www.accessengineeringlibrary.com/content/book/9781260128673/toc-chapter/chapter2/section/section50#ch02figD)

Find: Identify and solve for unit vertical load in psf for all applicable ASCE 7 ASD load combinations given that the following are applicable unreduced vertical loads in psf acting downward:

- D = 10 psf
- L_r = 20 psf
- S = 35 psf
- R = 30 psf
- W = 18 psf
- E = 2 psf

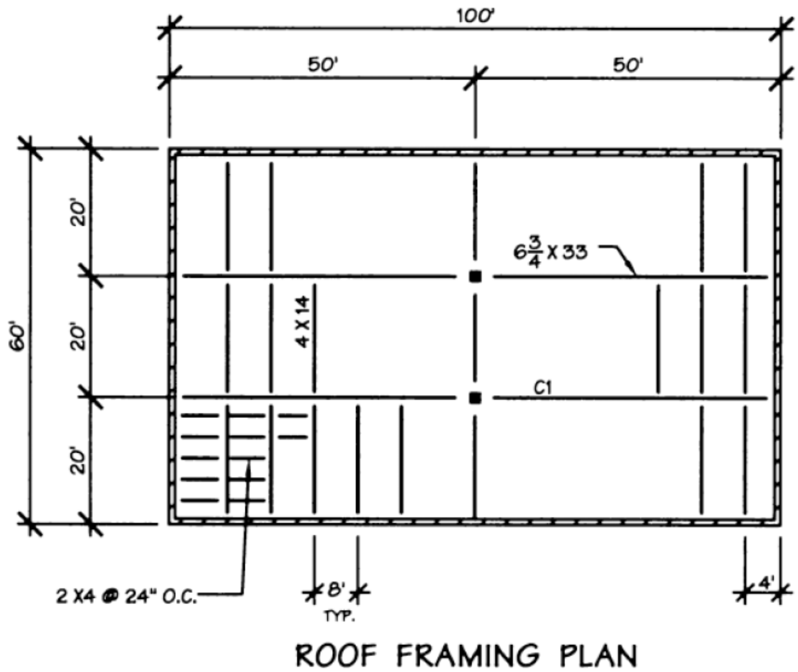


Figure 2.D (https://www.accessengineeringlibrary.com/content/book/9781260128673/toc-chapter/chapter2/section/section50#ch02figD)

Objective, Steps and Wrap-up

Problem Objective

This, presumably, flat roof will carry the various vertical loads but not simultaneously. The load combinations for ASD or LRFD procedures tell us the necessary combinations of their simultaneous application. For LRFD, the loads are also factored within the combinations. Here, we'll determine the design loading values for the glulam in the figure.

GAMEPLAN

1. Identify all applicable LRFD loading combinations.
2. Compute the unit vertical load for each of the LRFD load combinations.

Step 1

Find the design wind pressures for the MWFRS.

The loads the glulam is potentially subjected to will determine all the applicable loading combinations. The tributary area carried by the glulam can have implications that might reduce some of the loads required to be considered.

Sub step 1

The LRFD load combinations are:

1. $1.4D$
2. $1.2D + 1.6L + 0.5(L_r \text{ or } R \text{ or } S)$
3. $1.2D + 1.6(L_r \text{ or } S \text{ or } R) + (L \text{ or } 0.5W)$
4. $1.2D + 1.0W + L + 0.5(L_r \text{ or } R \text{ or } S)$
5. $0.9D + 1.0W$
6. $1.2D + E_v + E_h + L + 0.2S$
7. $0.9D - E_v + E_h$

Since several of these combinations have "or" statements applied to loadings that we do indeed have applied to this glulam, modify the list by examining which loads control in those combinations.

2. $1.2D + 1.6L + 0.5(L_r \text{ or } R \text{ or } S)$

3. $1.2D + 1.6(L_r \textit{ or } S \textit{ or } R) + (L \textit{ or } 0.5W)$

4. $1.2D + 1.0W + L + 0.5(L_r \textit{ or } R \textit{ or } S)$

with

$L = 0$

$L_r = 20 \text{ psf (unreduced)}$

$R = 30 \text{ psf}$

$S = 35 \text{ psf}$ controls over rain

Use

2. $1.2D + 0.5(S)$

3. $1.2D + 1.6S + 0.5W$

4. $1.2D + 1.0W + 0.5S$

Considering that there are no horizontal earthquake loads, E_h, and that sign of the wind pressure in case 5 is negative to maximize any net uplift forces for the component, the final list is:

1. $1.4D$
2. $1.2D + 0.5(S)$
3. $1.2D + 1.6S + 0.5W$
4. $1.2D + 1.0W + 0.5S$
5. $0.9D - 1.0W$
6. $1.2D + E_v + 0.2S$
7. $0.9D - E_v$

Sub step 2

Above, we decided that the roof live load does not control over the snow load and so it will not be considered further. However, for the sake of practicing we will determine the reduced live load here.

In order to determine the allowable reduced roof live load, we must find the tributary area of the glulam beam.

What is the tributary area of the glulam?

The glulam receives 20-ft long joists on both sides. Therefore, the tributary width is 20 ft (10 ft from each joist).

The span of the glulam is 50 ft. Therefore:

$$A_T = 50(20)$$
$$A_T = 1,000 \text{ ft}^2$$

Now, the reduced roof live load can be computed using the equation provided in **Section 2.3.2. Roof Live Loads** (https://www.accessengineeringlibrary.com/content/book/9781260128673/toc-chapter/chapter2/section/section4#c9781260128673ch02lev2sec02)

$$L_r = L_o R_1 R_2 \qquad \text{where } 12 \leq L_o = 20 \text{ psf} \leq 20 \text{ psf}$$
$$A_T = 1,000 \text{ ft}^2$$
$$F = 0 \ \ \text{(assumed, no rise-to-run info given)}$$
$$R_1 = 0.6 \qquad \text{since } A_T \geq 600 \text{ ft}^2$$
$$R_1 = 1 \qquad \text{since } F \leq 4$$

$$L_r = L_o R_1 R_2$$
$$= 20(0.6)1.0$$
$$L_r = 12 \text{ psf} \qquad \text{Reduced Roof Live Load}$$

The result further confirms that the snow load of 35 psf controls in all load combinations in which it occurs.

Step 2

Compute the unit vertical load for each of the LRFD load combinations.

Carry out the calculation for each combination.

1. $1.4D$
   $q_u = 1.4(10) = 14 \text{ psf}$

2. $1.2D + 0.5(S)$
   $q_u = 1.2(10) + 0.5(35) = 29.5 \text{ psf}$ (controls for downward force effects)

3. $1.2D + 1.6S + 0.5W$
   $q_u = 1.2(10) + 1.6(35) + 0.5(18) = 77 \text{ psf}$

4. $1.2D + 1.0W + 0.5S$
   $q_u = 1.2(10) + 1.0(18) + 0.5(35) = 47.5 \text{ psf}$

5. $0.9D - 1.0W$
   $q_u = 0.9(10) - 1.0(18) = -9 \text{ psf}$ (controls for uplift force effects)

6. $1.2D + E_v + 0.2S$
   $q_u = 1.2(10) + 2 + 0.2(35) = 21 \text{ psf}$

7. $0.9D - E_v$
   $q_u = 0.9(10) - 2 = 7 \text{ psf}$

Wrap-up

Considering all applicable loading combinations is a critical step in conducting a proper design for any structure or structural component. Here, we were able to eliminate some redundant work by recognizing that LRFD load combinations involving roof live load, rain load, and snow load that only the maximum of the three needs to be considered.

We also considered uplift combinations. Strictly speaking, these may not be directly applicable based on the way the problem statement was written (all loads act downwards). But, this solution demonstrates how the combinations with uplift implications would work.

Reminders for Moving Forward

Remember, the load combinations are not only used to combine loads themselves. The load combinations are also used to determine the combination of load effects, i.e., moment, shear, and axial forces. This is how most modern structural analysis and design software operates.

Related Problems

Problem 2.24 (https://www.accessengineeringlibrary.com/content/book/9781260128673/toc-chapter/chapter2/section/section50#ch02pb24) is identical but will utilize ASD load combinations instead.

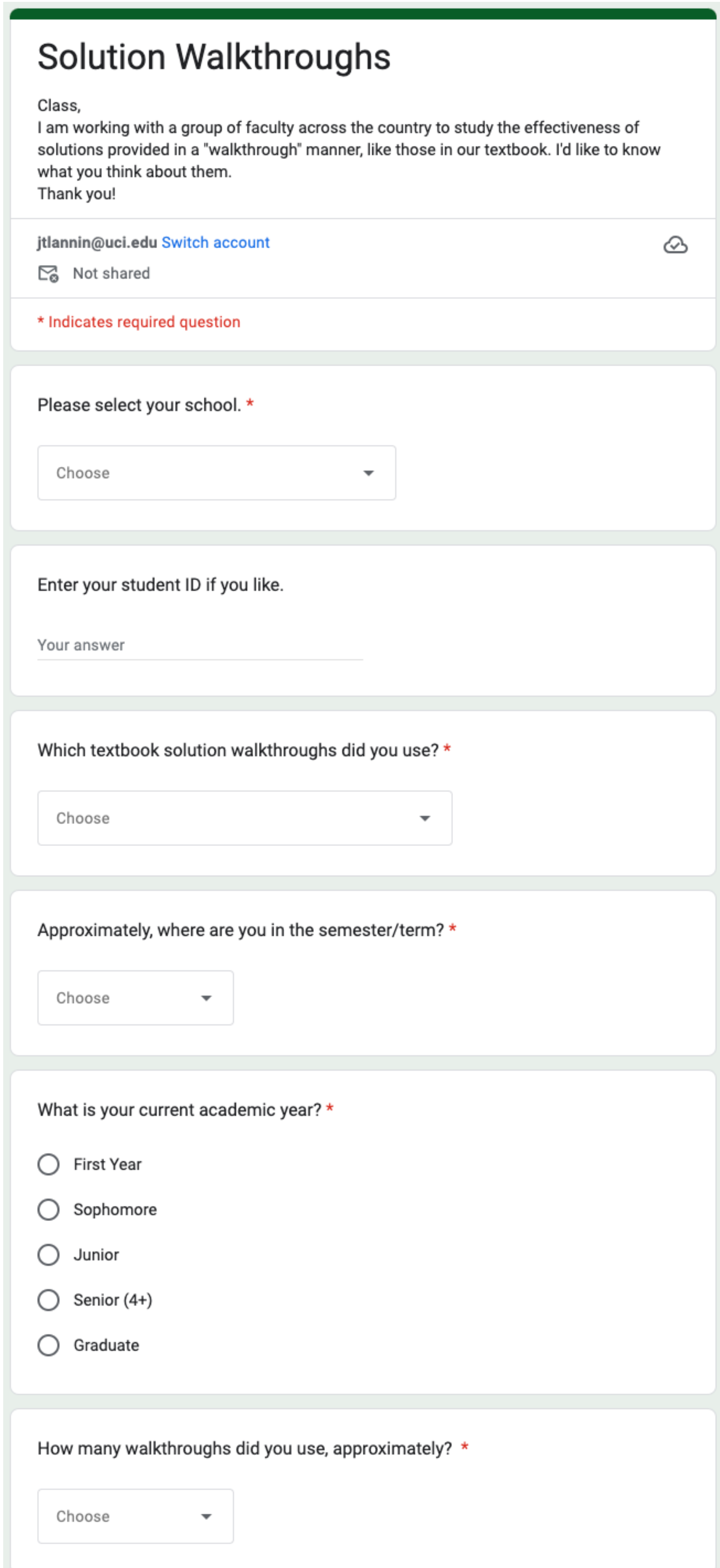
References

Section 2.3.2 (https://www.accessengineeringlibrary.com/content/book/9781260128673/toc-chapter/chapter2/section/section4#c9781260128673ch02lev2sec02) Roof Live Loads

Section 2.18.3 (https://www.accessengineeringlibrary.com/content/book/9781260128673/toc-chapter/chapter2/section/section40#c9781260128673ch02lev2sec24) LRFD Load Combinations

American Society of Civil Engineers (ASCE). 2016. *Minimum Design Loads and Associated Criteria for Buildings and Other Structures* (ASCE 7-16), ASCE, Reston, VA.

Appendix B – Survey Provided to Students



Solution Walkthroughs

Class,
I am working with a group of faculty across the country to study the effectiveness of solutions provided in a "walkthrough" manner, like those in our textbook. I'd like to know what you think about them.
Thank you!

jtlannin@uci.edu Switch account

Not shared

* Indicates required question

Please select your school. *

Choose

Enter your student ID if you like.

Your answer

Which textbook solution walkthroughs did you use? *

Choose

Approximately, where are you in the semester/term? *

Choose

What is your current academic year? *

- First Year
- Sophomore
- Junior
- Senior (4+)
- Graduate

How many walkthroughs did you use, approximately? *

Choose

How helpful did you find the solution walkthroughs overall? *

	1	2	3	4	5	
Not Helpful	○	○	○	○	○	Very Helpful

How helpful were the solutions in helping you learn the topic or procedure with respect to each attribute of the walkthrough solutions? *

	1 - Not Helpful	2	3	4	5 - Very Helpful
Answers are initially hidden	○	○	○	○	○
Each step has a clear written explanation (generally)	○	○	○	○	○
Game plan at the beginning	○	○	○	○	○
Summary at the end	○	○	○	○	○

How do you feel about these solution walkthroughs vs. videos walking you through the same solution? *

- ○ I prefer the walkthrough solution
- ○ I prefer a video
- ○ I do not have a preference
- ○ Other: ______

Any comments about your preference for video versus walkthrough?

Your answer

Any other comments or observations?

Your answer

Submit

Clear form