

# Educating the Future Workforce: Sharing Knowledge on YouTube

by Dr. Tyler Ley, Oklahoma State University

Our industry faces a major education challenge. Our most experienced engineers and builders are retiring, and the new workforce is being asked to accomplish more with fewer resources. This workforce will need to integrate knowledge and tools from the past with technology that is actively being developed. If we have a poorly educated workforce, we will repeat mistakes from the past and will not successfully implement the latest advancements. This lack of education will create unneeded costs, increase waste, and potentially put lives in danger. We need to have trusted educational resources that are timely, easy to locate, and engaging. I believe this need can be met by creating video content for technical topics and making that content freely available on YouTube.

YouTube has become a ubiquitous resource to learn how to create, build, or fix almost anything. YouTube offers a number of functions to facilitate creating and sharing videos. It allows you to upload videos for free, provides simple editing tools, and will also create closed captioning so that the video can be watched without sound. The videos are searchable and can be organized into playlists, which helps people find them. When you upload a video, YouTube will alert your subscribers or followers to the new content. In addition, YouTube provides detailed information about how viewers rated your video, how long they watched, what they watched next, and where they are from. This is all useful information to help you bring your ideas and messages to more people and learn how to be a better communicator and engage your audience.

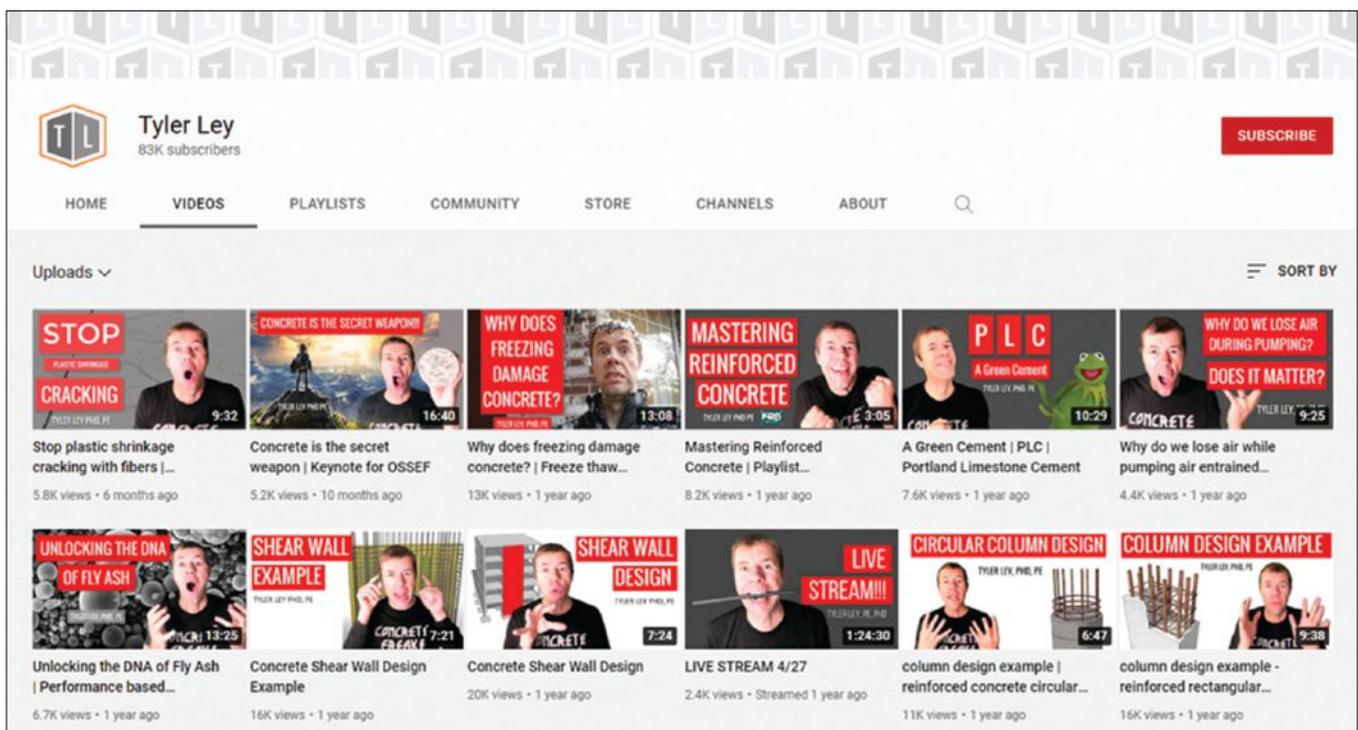
About three years ago, I started making YouTube videos regularly to share my conference presentations, research papers, classroom lectures, worked example problems, and even partially developed ideas. My channel,

**Ingredients**

**Reaction** shipping and placement curing

**Final Form**

As part of his Concrete Materials playlist, Dr. Tyler Ley compares cookies with concrete. Everyone knows and loves cookies, so the comparison helps students understand some basic concepts about concrete materials. All Photos: Dr. Tyler Ley.



Dr. Tyler Ley uses his YouTube channel to educate everyone from absolute beginners and students to industry colleagues about concrete, which he calls “the greatest material in the world.” The videos are typically short—15 minutes or less—and cover a range of topics, including reinforced concrete design, fly ash, admixtures, and mixture proportions.

[www.youtube.com/tylerley](http://www.youtube.com/tylerley), receives approximately 170 hours of watch time every day, and my videos have been watched more than 6 million times! This is an amazing amount of return for posting videos on YouTube.

For my classes, I create short videos, typically 15 minutes or less, that explain the fundamentals about a topic, and I ask the students to watch them before class. In a week, the students may be asked to watch five or six videos. I find that my students perform better on quizzes and exams when they are introduced to a concept by video, followed by more complex in-class discussions about how to apply the principles. I have made videos that cover every major topic in reinforced concrete design, structural steel design, concrete mixture proportioning, and concrete durability. These videos are organized into playlists and they are available on YouTube to anyone.

I also use YouTube to share my research findings. These videos give me a concise way to explain the importance of the research and how it can be applied in practice. This allows me to bring my research papers to life and gives me another use for my conference presentations. The videos are easy to share, and they can lead someone to a paper or a report where they can find

more information. This helps share my research, makes it easier for people to implement the work, and thereby makes an impact on our industry.

I have been asked by other engineers and professors whether my YouTube channel will hurt my career because I am “giving my intellectual property away for free.” On the contrary, my YouTube channel creates opportunities for me by helping to establish me as an expert. It creates awareness about who I am and the research I am doing. This makes it easier to find graduate students who want to work with me and funding agencies that want to support me. The channel also creates more opportunities for me to speak at conferences. All of these opportunities have helped advance my career.

Others question whether professors will still be needed once their lectures are available online. I have not found this to be an issue. I think our students and our industry will always need trusted guides to help solve their problems. In my opinion, freely available online video content makes everyone’s job easier. These videos help everyone to start at the same level of understanding. They provide a way to remove the monotonous aspects of explaining a subject for the 100th time, and they will always be available for someone

to rewatch. This gives us more time to focus on creating solutions and discussing complex issues where there is no clear solution. Ultimately, I feel that these videos bring more value to both our students and the profession. They also help spread knowledge and ideas while highlighting what we don’t understand.

The best-selling author, marketing genius, and engineer Seth Godin says, “Ideas that spread, win.” I believe that for our profession to win, we need more professors and experts in our community to share their knowledge and ideas via online video content. I have found YouTube to be an amazing way to do this, and the platform has been very valuable to me.

I encourage both academics and practicing engineers to start their own YouTube channels. Being on YouTube gives you a chance to establish yourself as an expert. It also allows you to give back and bring more value to our industry. Furthermore, starting a YouTube channel can help you improve your public speaking skills and make you a better technical communicator. It is also a creative and fun way to share your ideas.

I encourage you to start simply. You could record your screen while giving



Dr. Tyler Ley is passionate about concrete. His engaging technical YouTube videos are an accessible way to transfer knowledge in the concrete bridge industry.

an online presentation. You could have your students film a presentation from their class. You could film yourself in your office, in the laboratory, or, with permission, at a jobsite. I think using a simple camera like the one on your cell phone or a webcam is best because these types of cameras are so easy to use

and the quality is suitable for YouTube. Developing YouTube videos is no different than any other skill: you have to practice to improve. So, start making videos and try to improve with each one.

Many online resources are available to help you learn more about making

videos. One of my favorite YouTube channels that focuses on making YouTube videos is [www.youtube.com/primalvideo](http://www.youtube.com/primalvideo). Feel free to reach out to me at [tyler.ley@okstate.edu](mailto:tyler.ley@okstate.edu), and of course, visit [www.youtube.com/tylerley](http://www.youtube.com/tylerley) and like, subscribe, and leave me a comment.

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34th Annual Convention

*Please Check the ASBI Website Events Page for Details of 2022 Event.*

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*Please Check the ASBI Grouting Training and Events Page for Registration Details for the Class.*

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This “How-To Handbook” was developed with the purpose of providing comprehensive coverage of the state-of-the art for construction and inspection practices related to segmental concrete bridges.

The Construction Practices Handbook is a FREE pdf download. This link [www.asbi-assoc.org/index.cfm/publications/handbook-download](http://www.asbi-assoc.org/index.cfm/publications/handbook-download) will take you to the registration form to complete the download.

2022 Construction Practices Seminar

*Please Check the ASBI Website Events Page for Information on Future Date and Agenda.*

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