

Formative Evaluation Report

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The instructional materials that I designed for my development project focused on a specific section within the Surface Area and Volume of Solids unit in my high school Geometry class. That specific section was titled Volume of Prisms and Cylinders. The purpose and goal of my formative evaluation for that design is quoted below, as it was stated in the survey I distributed to my evaluation participants.

*“The goal of this evaluation is to help me make a better product to deliver mathematical content, interactions, and understanding with my future students. Please rate the quality of the instructional materials and design of the project on a scale of 1 to 4. Also, please include commentary on the strengths and weaknesses of the items. I ask that you be as open and direct as possible as I highly value your honest responses to build a better product for my future students.”*

I wanted to understand the perspective of my actual Geometry students that would go through the instructional materials I designed and get their honest feedback on what was helpful and what needed work. With that in mind I asked two specific Geometry students of mine that at times struggle with the material but are not hesitant to speak up with questions for clarification. I needed students to evaluate me that are straightforward and frank, but also willing to work through the instructional materials for me as a favor. Luckily, the two students I asked agreed to help me out. I also sought out two colleagues of mine that are considered experts in designing effective instructional materials on our campus, but that are also close friends of mine. As with my student participants, I needed that blunt openness I know these colleagues would give me in order to create a better instructional product. Granted, it is a very small size of participants, particularly with the amount of students evaluating my instructional materials. The quality of feedback I received from these two particular students, though, was very insightful.

The main hub of instruction and content was Google Classroom. Since all four of my participants were employees or students within the district, they were given access to the instructional materials within Google Classroom as students. After a couple of days of my participants having access to the materials I emailed them a survey that I produced through Google Docs. In the days between the access to the materials and the delivery of the survey, I encouraged my participants to contact me with any questions or issues that might have come up during evaluation of the materials. Indeed, I received various emails from

my students and phone calls from my colleagues that revealed areas of my product that needed clarification and access permissions to certain videos and sites. They later detailed their experience on the survey that they submitted through Google Docs.

The survey the participants completed consisted essentially of five statements, each having a likert scale from 1 to 4 with an additional area to add commentary to the particular statement. A final spot in the survey allowed for the participants to provide additional commentary and feedback on the instructional materials on areas such as what they would have changed, things they liked best, and so on (see appendix for full survey and responses). The five statements included in the survey were:

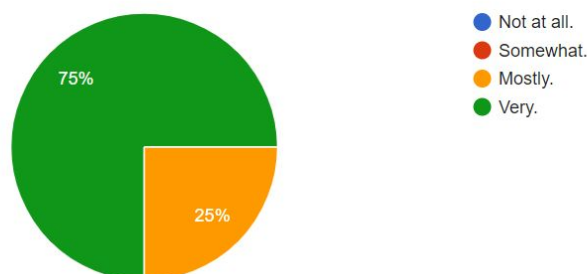
1. The learning objectives were clear.
2. The instructions on what students need to accomplish through the project were clear.
3. The instructional materials (notes, videos, activities) were easy to navigate.
4. The instructional materials (notes, videos, activities) were useful and effective.
5. Overall, the instruction and materials (notes, videos, activities) in this project were effective in accomplishing the learning objective.

The likert scale options were, 1) Not at all, 2) Somewhat, 3) Mostly, and 4) Very. Following the participants ranking was the commentary on their response to the statement.

In regards to statement one ('The learning objectives were clear'), statement four ('The instructional materials (notes, videos, activities) were useful and effective') and statement five above ('Overall, the instruction and materials (notes, videos, activities) in this project were effective in accomplishing the learning objective'), the participants unanimously responded with "Very." Where there were issues was statements two and three (see below).

The instructions on what students need to accomplish through the project were clear.

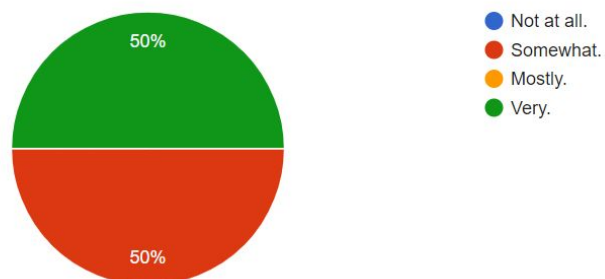
4 responses



One of my colleagues called me while reviewing the materials saying he thought he was doing what he was supposed to be doing while viewing the Edpuzzle instructional videos, but was not entirely sure because my instructions were not clear. To quote him from the survey, “Had confusion understanding timeline of "EdPuzzle" assignments. They were listed there on the Google Classroom Stream but did not have instructions before/after they were listed...little confused on what is the objective/directions with the "EdPuzzle" assignments listed on the Stream.” Although my students did not have a problem with knowing the timeline of my videos (as they have been exposed to it before in class), I did not take into account a person new to this style of instruction. This needs to be revised for future designs...design every lesson as if the learner is brand new to it. In regards to statement three (see below):

The instructional materials (notes, videos, activities) were easy to navigate.

4 responses



The biggest issues with my design were not necessarily the navigation of the instructional material, but as one of my students put it, “The notes were easy to navigate, but the videos and activities were hard to access.” Indeed, my other student participant cited, “The notes were attached well and were easy to find although I had trouble trying to access the edpuzzle videos and the flip grid. The edpuzzle links weren't working and the flipgrid didn't work on at least my laptop and I had to use my phone.” The major issue was not with navigation, but rather access to components outside of Google Classroom that are linked through Google Classroom. As this was the first time these participants were to access Edpuzzle videos and the Flipgrid website, access for them was an issue I had to troubleshoot. Multiple emails from my students stated that they could not view the Edpuzzle videos due to permissions, which required me to quickly find proper links and adjust permissions for them to be allowed access. Those adjusted links were

then reposted to Google Classroom. The Flipgrid site, we found out, required a download on the device the student was using. To quote my student, “The only thing I would change was the flipgrid assignment. It was a very easy thing in the fact that we had to teach the assignment but the difficult part was trying to work the app. It wasn't working in laptops or at least on on mine and I had to download it on my phone. This could be difficult for some people that cant access it on computers and don't have a phone.”

The revision plan for the current set of instructional materials would then include clarifying of instructions such that it would treat every learner as new to the material. To state that another way, I as the instructor cannot assume every learner will know what is expected because of habit and prior experience in my class...instructions and expectations need to be explicit. As was stated previously, the biggest issue to my design was my learners access to components outside of Google Classroom that were linked through Google Classroom. Although the current project has been updated with the proper permissions and links for necessary access of my participants, future design and development of similar instructional materials will require extensive testing and understanding of these processes before implementing. Even with implementation, as the instructor and designer I will have to expect some troubleshooting to have to occur early with students learning the routines and media that come with a new course of study.

Suddenly being thrust into distance learning because of the pandemic, this course and the instructional design process associated with it came at such a relevant time in my career as a high school educator. The landscape of education has changed at every level for the future, but specifically at the secondary and elementary level. Granted, education has and will always evolve, but never with the immediacy as we are currently seeing. Getting formally educated in subject matter in THE time when it was most relevant was serendipitous. Other positives in this course and design process included learning so much, not just from my professor, but from my fellow classmates. I was not only taught that effective learner-learner interactions increase success in a course, it was shown to me in practice. The amount of resources, recommendations, and strategies I received from fellow classmates helped within the course and it has informed future planning for my own classes.

There were some challenges though. Being in quarantine found all of us in situations and

emotions we maybe have never been in before. For me personally, responsibilities between family, work and my education here at CSUSB, all while essentially being confined to my home found me, oddly, struggling to find the motivation to do my best work. It is something I grew up being told, "If you're going to do something, do it right and do it the best you can." There were too many instances throughout the last three months where I could just not find the drive to do, much less do my best...and it was something that I couldn't and still can't put into words why. Along with that came limitations in the technology we have here at home. A laptop and tablet had to be purchased just so my family and I could handle distance learning. That led me to think about the students in my classes and their technology needs for distance learning. My family and I can somewhat afford these new technology purchases, but there are too many of my students and their families that cannot.

The skills and knowledge that I learned within this course are being applied immediately. In the coming two weeks my math department will be planning content and instruction for the coming school year. I happen to be the Geometry team lead and am going to be designing and developing classes to be delivered completely online, if necessary. The design will be very similar to what I produced for this course project, with the revisions and other learner-learner interactions embedded. With the fall semester still unknown as to whether students will be in the physical classroom or not, I am recommending my fellow teachers to take this approach as online learning can take place in the physical classroom or through distance learning. This will allow us to be prepared regardless of what future classes might look like.

# Appendix

Questions **Responses** 4

4 responses



Accepting responses 

Summary

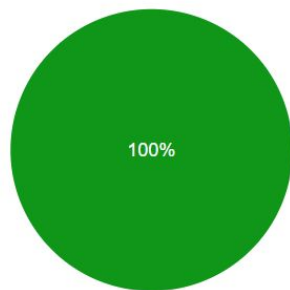
Question

Individual

The learning objectives were clear.



4 responses



- Not at all.
- Somewhat.
- Mostly.
- Very.

Please comment on the above rating.

4 responses

It was very clear because it was explained well.

I understood what i was to accomplish

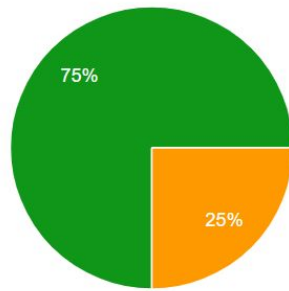
Objective was clear in the lessons and instructions given throughout Google Classroom. Also, objective was clear in the lessons (videos, annotated, notes, etc).

It was good because it was explained well and knew what to do

The instructions on what students need to accomplish through the project were clear.



4 responses



- Not at all.
- Somewhat.
- Mostly.
- Very.

Please comment on the above rating.

4 responses

It was very clear because each assignment had its instructions.

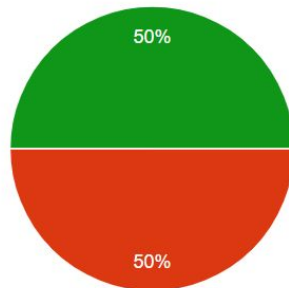
Very easy to understand

Most instructions were clear and focused. Had confusion understanding timeline of "EdPuzzle" assignments. They were listed there on the Google Classroom Stream but did not have instructions before/after they were listed...little confused on what is the objective/directions with the "EdPuzzle" assignments listed on the Stream.

It was clear because the directions were really straight forward.

The instructional materials (notes, videos, activities) were easy to navigate.

4 responses



- Not at all.
- Somewhat.
- Mostly.
- Very.



Please comment on the above rating.

4 responses

The notes were easy to navigate, but the videos and activities were hard to access.

Clear and precise

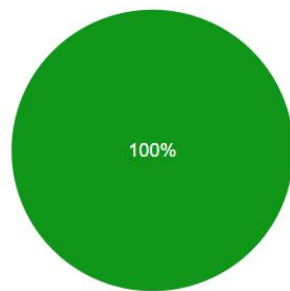
Videos that were posted were clear and engaging. The notes whether the annotated notes or notes taken during video instruction were fairly easy to follow and keep up with.

The notes were attached well and were easy to find although I had trouble trying to access the edpuzzle videos and the flip grid. The edpuzzle links weren't working and the flipgrid didn't work on at least my laptop and I had to use my phone.

The instructional materials (notes, videos, activities) were useful and effective.



4 responses



- Not at all
- Somewhat.
- Mostly.
- Very.

Please comment on the above rating.

4 responses

The notes, videos, and activities let the student be aware of how to solve a problem and ease us into the homework. The only problem was that finding the diameter or radius was not on the notes.

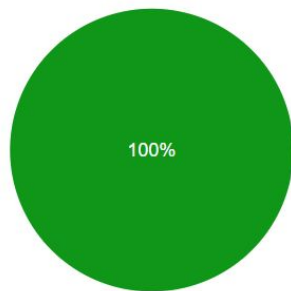
Step by step was understandable

I feel if students are engaged in the lesson and attentive throughout they will benefit and it will be useful and effective to them. Issues may arise with students who struggle...they may need help at zoom/online meetings, which you stated you would have available if needing extra help.

They were useful but in the big ideas assignment there was a question that I didn't know how to solve and there wasn't an example in the notes. it was for the radius one

Overall, the instructions and materials (notes, videos, activities) in this project were effective in accomplishing the learning objective.

4 responses



- Not at all.
- Somewhat.
- Mostly.
- Very.

Please comment on the above rating.

4 responses

They were very useful because there was many examples to figure out on finding the volume or x for the given shape.

I could follow everything easily

I feel this project was effective. The projects progression is very good as it starts with the lesson, adds different forms and levels of practice, and concludes with projects and explanation/analysis of the lesson learned (students teaching what they have learned). Good balance of all aspects needed for students to understand and apply what they learned throughout lesson and project.

Once we were able to access the videos, the notes and videos were really helpful and easy to understand.

Please, please, please share additional comments or feedback. "What would you change, what did you like best, etc."

4 responses

The flip grid activity was a little complicated to figure out. It is defiantly easier to do on a smartphone. It can be a challenge for those who dont have storage on their phone to complete the video. The ed puzzle videos were actually very useful because we have to pay attention and engage with the video.

The initial link in google classroom was not user friendly however the link in the comment took me to edpuzzle without a problem

Change...add some instructions before/after on the Stream for the EdPuzzle sections so not to confuse and/or make clear...especially to possible new students to the class or online format such as Google Classroom.

Best...Good balanced and progression throughout the lesson...starting point teaches/introduces the lesson...then moves in to applying it with guided notes/assignments...then finish with students being assessed on what they have learned in different formats (Flipgram).

The only thing I would change was the flipgrid assignment. It was a very easy thing in the fact that we had to teach the assignment but the difficult part was trying to work the app. It wasn't working in laptops or at least on on mine and I had to download it on my phone. This could be difficult for some people that cant access it on computers and don't have a phone. What I did like were the videos. They were easy to follow along and the questions helped me want to pay attention because I needed to know the answer. Once I watched the videos and when back to the notes they were also easy to understand. I also liked working on big ideas because it gives you options to check if the answers were right and there's also a help button if you need extra help.