Report III

<u>Results of One on One Evaluations</u>

Preparation for one on one evaluation began with the completion of the instructional materials. These materials include a forty two-slide power point presentation that serves as "the instructor" as well as a fourteen page print booklet of assessment questions. Students move between the two mediums throughout the module. The presentation and the print materials are divided into units. The student completes one entire unit at a time and evaluates him or herself before moving on.

The next step was to select the three students that would participate in the one on one evaluation. This process began with a list of volunteers. The criteria for choosing students were based on their ability and confidence in their ability to do proofs. Student 1 is an A student, who has a high ability to complete proofs although they believe their ability is low. Student 2 is a C student that has a medium ability to complete proofs and believes accordingly. Student 3 is an F student that has a low ability to complete proofs and believes accordingly. This provided a variety of ability and confidence levels of students. All of these students possessed the entry behaviors required. Each of them missed no more than one of the entry-level questions.

Once selection was complete, individual appointments were made with each student. On arrival, the students were provided with a laptop computer and a packet of print materials. The students were also provided with a verbal and written description of the purpose of the module and the opportunity to ask questions before they began. None of the students had any questions. They were then directed to begin. All of the students had difficulty in the beginning. Two of them moved through a slide in which they were directed to stop. The third stopped and completed what was requested, but then did not move on. This lead to the conclusion that the introductory instructions needed more clarity. Each student noticed a clerical error within either the power point or the print materials, but these were the only reasons they stopped after the initial trouble. I monitored them and took notes throughout the rest of the module.

The students completed the exit survey verbally at the conclusion of the module. The results were as follows:
1. What parts of the module did you like?
    1. Same example used throughout/consistency
    2. How the material was broken down. The checking of progress so frequently.
    3. How the material was broken down. The sounds and graphics made it more interesting.
2. What parts of the module did you not like?
    1. Nothing
    2. Nothing
    3. Nothing
3. What revisions would you recommend?
    1. Show the same proof two different ways.
    2. Change the last assessment proof. It's too hard.
    3. Nothing

4. Were the directions clear enough?
    1. Yes
    2. No, Clearer directions needed at the beginning.
    3. Yes
5. Did you have enough time to process information presented?
    1. Yes
    2. No, timing on larger slides with definitions was too fast.
    3. Yes.
6. Did the sound effect your concentration?
    1. No, but it would be better if there were different ones.
    2. Yes, too much sound.
    3. No, but there needs to be a variety of sounds.

All of the students said they had a better understanding of proofs after they completed the module. Two of them mentioned that they did not realize proofs had to be so detailed.
     Due to the comments of these students revisions were made. The revisions were as follows:

1. On the student information sheet - Clarification of Grade. Put choices of answers in parenthesis to reduce confusion between geometry grade and grade level.
2. Introductory directions – Repeated directions with an example. Bolded and italicized more of the directions.
3. Power Point – Changed clerical errors and changed last assessment proof to a less difficult one.
4. Computers – will use PC's in a computer lab to reduce glaring problem.

Objective Analysis Table

Obj. # # of items.	2.2.1 1-6	2.3.1 1-8	1 1-2	2 1-2	3 1	4 1-2	5 1-2	6 1-2	7&8 1-2	# of obj. mast.	Total # correct	%correct
Student 1	6	5	2	2	1	2	2	2	1	7	23	85
2	6	5	2	2	1	2	1	1	1	5	21	78
3	6	5	2	0	1	2	2	2	0	6	20	74
Total	3	3	3	2	3	3	2	2	0			
%	100	100	100	66	100	100	66	66	0			

Results of Small Group Evaluation

   The small group evaluation took place in a computer lab with thirteen students. The students were selected on a volunteer basis. Each student was provided with a packet of print materials and access to the network on which the presentation could be accessed. As each student entered, they were directed to read the purpose of the module and the directions very carefully and that they may begin once they completed that task. The group is comprised of two A students with medium beliefs in their ability to complete proofs, one B student with a medium belief, two B students with a low belief, three C students with a low belief, and five F students with a low belief.

   The students still had a rocky start. Three of the students went through the first evaluation slide. They were given verbal direction and began again. Once students began and understood the directions there were no problems. Three students tried to ask several content questions, but when they realized they were not going to get an answer they stopped.

   When each student completed the module, they were directed to hand in their print materials after they shut down their computer. Once their materials were handed in, they were given an exit survey to complete. After they completed the survey they were allowed to leave. The way the small group evaluation was set up students were starting and ending at different times. It took an hour and forty-five minutes from start to finish for the entire group. Individually, most students took about an hour to complete the module.

   Seven of the thirteen students got every question on the entry test correct. The other six students missed between one and four out of fourteen questions. The most missed question was identifying an isocelese triangle. Out of the six that missed any questions five of them missed that one. Therefore, all thirteen students possess the entry behaviors required.

Objective Analysis Table

Obj. # # of items	2.2.1 1-6	2.3.1 1-8	1 1-2	2 1-2	3 1	4 1-2	5 1-2	6 1-2	7&8 1-2	# of obj. mast.	Total 27	%
Student 1	3	5	2	0	1	2	1	0	0	3	14	52
2	6	7	2	2	1	2	2	2	2	9	26	96
3	6	6	2	2	1	2	1	1	0	5	21	78
4	5	5	2	2	1	2	2	2	0	6	21	78
5	6	5	2	0	1	2	0	0	0	4	16	59
6	6	8	2	2	1	2	1	2	1	7	25	93
7	6	7	2	2	1	2	2	1	1	6	25	93
8	6	8	2	2	1	2	2	2	2	10	27	100
9	6	6	2	0	1	2	1	0	0	4	18	67
10	6	6	2	2	1	2	2	2	1	7	24	89
11	6	8	2	0	1	2	1	1	0	5	21	78
12	2	3	1	0	1	2	0	0	0	2	9	33
13	6	8	2	1	1	2	0	0	0	5	20	74
Total	10	4	12	7	13	13	5	5	2			
%	77	31	92	54	100	100	38	38	15			
Ave.										6	21	76

*The numbers in the chart represent the number of items the student got correct out of the total number of items for the objective.

*Mastery is considered getting all the items correct for a particular objective.

Of Students Matering each Objective

Legend: 2.2.1, 2.3.1, 1, 2, 3, 4, 5, 6, 7 & 8
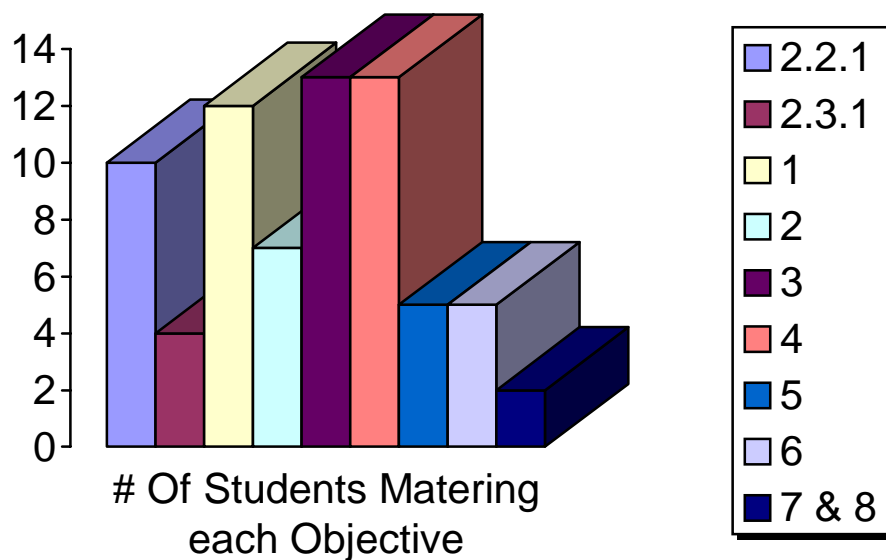
Exit Survey Data

1. What parts of the module did you like?

   1. Geometric Proofs
   2. All of them
   3. I liked all of it. It was very informative.
   4. The graphics and sounds.
   5. The parts that explained the postulates.
   6. The pretty pictures.
   7. The way you can check yourself.
   8. All of it.
   9. All.
   10. Almost all of it.
   11. The sounds and the brilliant incorporation of helpful activities and fun, fulfilling work.
   12. I like the pictures and how the things appear on the computer (questions and answers).
   13. The fact that I could learn on my own pace.

2. What parts of the module did you not like?

   1. Nothing
   2. The noises.
   3. The part with the long scrolling square (background).
   4. All of the reading I had to do.
   5. The check yourself parts because they did not show you why the answers were that.
   6. The work.
   7. Proofs
   8. It was all good.
   9. Liked all.
   10. None.
   11. There were no parts of the module that were not exemplary.
   12. It was kind of long.
   13. The sound effects.

3. What revisions would you recommend?

   1. The assessments on the program.
   2. None.
   3. The last part.
   4. None.
   5. The check yourself part.
   6. Nothing.
   7. Word it better.
   8. None.
   9. None
   10. None.

11. No revisions needed.
12. It was simple.
13. Less noise, better color and graphics.

4. Were the directions clear enough?
1. They were pretty clear, but I think there should have been more examples but different ones.
2. It could go a little more in depth.
3. Yes, clear and strait forward.
4. Yes they were.
5. Yes.
6. Yes, they were. It made everything a lot easier.
7. Yes.
8. Yes.
9. Yes.
10. Not really, unit five. I understood the examples but could not really put it all together.
11. Yes.
12. Yes, they were really clear.
13. Yes, all the examples were very easy to understand.

5. Did you have enough time to process the information presented?
1. Yes
2. No, it did not give enough time to read instructions.
3. Yes, I had plenty of time.
4. Yes.
5. Yes.
6. Yes.
7. Yes.
8. Yes.
9. Yes.
10. Yes.
11. Yes.
12. Yes, I had enough time.
13. Yes, more than enough time to assess the information.

6. Did the sound effect your concentration?
1. No.
2. No, it helped.
3. No.
4. Not that much.
5. Yes.
6. Not really.
7. A little.
8. No, it helped.
9. No.
10. Yes.
11. No.
12. Not on my computer, but the others were kind of loud.
13. Yes, much harder with sound.

The data analysis shows that students performed well on objectives one through four. There is declining performance on objectives five through eight. This leads to the conclusion that units four and five are in need revision. One student suggests that different examples should be given and another suggests adding another unit on putting all the information together. Judging from the performance on objectives three and four, another unit could be added by placing these concepts within another unit. All of the students mastered this unit. Therefore, it may not need so much attention. That attention could be placed into creating another unit to clarify the latter objectives.

The data also shows a poor performance on objective 2.3.1, which was a sub-skill objective. Upon revisiting that assessment, there are reasons for this performance. Some of the questions on the assessment are not covered in the review unit. Several of these questions need to be omitted. This would enhance the performance on this objective.

Another student suggests showing the answers and why. This would help students understand why they missed a particular question before they moved on. The only concern about completing this revision would be time constraints. If every problem were worked out on a slide the presentation would be one hundred slides long. It would be more feasible to provide a solutions manual along with the print materials. Then a student could look up any worked out problem without having to sit through all of them.

The data collected from observation has also yielded some necessary revisions. Students should have some practice in a supervised setting to make sure they understand directions and have the technological skills necessary to complete the module before they are allowed to begin the module on their own. The review unit or unit one would be a perfect practice unit. The introductory directions still need clarification as well or they need to be inserted into the print materials and the presentation instead of being at the beginning.

The assessment and procedures worked very well accept the omitting of several assessment items mentioned earlier. The students seemed to be pleased with the procedures. Therefore, there are no recommendations for revisions.