**OPH 127 Student Learning Outcomes Assessment Team (SLOAT) Spring 2011 Final Report by Charles Harrison**

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**Introduction**

OPH 127 Ophthalmic Materials II is a course for second-semester Vision Care Technology majors, an integral part of the program curriculum, a continuation of OPH 126 Ophthalmic Materials I, and a prerequisite to third-semester Vision Care Technology courses.

**Assessment Plan**

The SLOAT Spring 2011 OPH 127 Student Learning Outcomes (SLO) assessment study focused on Course Goal 2 (describe and perform ophthalmic calculations).

All students from both sections of the course were assessed in Spring 2011. This resulted in a sample size of 26 at the start of the semester and 24 at the end of the semester. Multiple-choice questions were blueprinted to Measurable Course Performance Objectives (MPOs) related to Course Goal 2, thus making the assessment completely objective.

Of the 9 MPOs related to course goal 2, student mastery of 3 of the MPOs was evaluated on Test 1 at week 6, student mastery of 3 more of the MPOs was evaluated on Test 2 at week 10, and student mastery of the final 3 MPOs was evaluated on Test 3 at week 14. Student achievement of all 9 MPOs was re-evaluated on the Final Exam at week 15.

**Findings**

The table given on the next page details the results of student mastery of the 9 various components (specific learning content) included in the 6 MPOs. These results include student performance level on the 3 tests and final exam both individually and cumulatively. Overall, students achieved 4 of the 9 learning objective components in the course. This content included CROSS CYLS (90% student achievement), SPLIT PRISM (84% student achievement), EFFECT THICK/N (80% student achievement), and RESULT PRISM (78% student achievement). However, less than 70% of students were able to show competence of the following 5 learning objective components: SPHERE EQUIV (68% student achievement), EFFECT/COMP, VD (67% student achievement), OBJECT DISPLACE (58% student achievement), SHOP PRISM (54% student achievement), and SAG (48% student achievement).

Although SPHERE EQUIV had an overall student achievement level of 68% as was stated above, it is important to note that the preliminary level of student mastery of this topic was a very low 46%. Soon after the second test (on which the SPHERE EQUIV SLO data was collected) instructor intervention – in the form of a comprehensive in-class review of this course material – occurred with a very positive outcome, which is evidenced by the fact that 92% of the OPH 127 students answered a question related to this course material correctly on the final exam.

In contrast to this very positive improvement in student performance on SPHERE EQUIV from Test 2 to the final exam, students struggled with SAG throughout the semester despite instructor attempts to address student underperformance on this topic. While only 50% of the students answered a question related to this course material correctly on Test 1, even fewer (46%) answered a similar question correctly on the final exam. This could perhaps be explained simply to the difficulty level of this topic. Similarly, student performance on the learning objective components SHOP PRISM, OBJECT DISPLACE, and EFFECT / COMP, VD showed improvement from preliminary testing to final exam, but not as much improvement as desired. To address these student learning difficulties in order to improve the OPH 127 course, a committee will be formed within the Vision Care Technology Department to compare existing and/or create new pedagogical approaches to these topics. Specifically, this committee will be charged with generating suggested ways to revise the methodologies utilized in the instruction of these topics.

**Spring 2011 Results of Student Mastery of the 9 MPOs Related to OPH 127 Course Goal 2**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **MPO** | SAG | SHOP  PRISM | SPLIT  PRISM | CROSS  CYLS | SPHERE  EQUIV | OBJECT  DISPLACE | RESULT  PRISM | EFFECT  THICK/N | EFFECT/ COMP, VD | **TOTALS** |
|  | | | | | | | | | |
| Assessment Instrument/  Question # | Test 1 | | | Test 2 | | | Test 3 | | |
| #9 | #16 | #17 | #2 | #3 | #4 | #4 | #5 | #6 |
| # of Students Answering Correctly | 13 of 26 (50%) | 11 of 26  (42%) | 22 of 26  (85%) | 23 of 26  (88%) | 12 of 26  (46%) | 13 of 26  (50%) | 22 of 25  (88%) | 20 of 25  (80%) | 16 of 25  (64%) | 152 of 231  (66%) |
|  | | | | | | | | | | |
| Assessment Instrument/  OPH 127 – 2  Question # | Final Exam | | | | | | | | |  |
| #7 | #8 | #9 | #10 | #11 | #12 | #13 | #14 | #15 |
| # of Students Answering Correctly | 11 of 24 (46%) | 16 of 24  (67%) | 20 of 24  (83%) | 22 of 24  (92%) | 22 of 24  (92%) | 16 of 24  (67%) | 16 of 24  (67%) | 19 of 24  (79%) | 17 of 24  (71%) | 159 of 216  (74%) |
|  | | | | | | | | | | |
| Combined Results | | | | | | | | | | |
| # of Students Answering Correctly | 24 of 50  (48%) | 27 of 50  (54%) | 42 of 50  (84%) | 45 of 50  (90%) | 34 of 50  (68%) | 29 of 50  (58%) | 38 of 49  (78%) | 39 of 49  (80%) | 33 of 49  (67%) | 311 of 447  (70%) |

Appendix A – Multiple Choice Question excerpt from the OPH 127 SP 2011 FINAL EXAM

7. Given - 3.00 - 2.00 x 90 plastic lens with a center thickness of 3.0 mm. The horizontal edge thickness of a 50 mm. round lens would be:

A. 1.1 mm.

B. 1.8 mm.

C. 4.9 mm.

D. 6.1 mm.

8. O.D. + 4.00 P.P.D. = 62

O.S. +2.25 A = 58 DBL = 20

If the shop did not decenter the lenses; how much prism would be induced to the patient?

A. 5 ^ BI

B. 5 ^ BO

C. 4 ^ BI

D. 3 ^ BO

9. A patient is prescribed O.D. 8 ^ BO and it is desired to split the prism; this would be accomplished by giving the patient:

A. O.D. 4 ^ BO O.S. 4 ^ BO

B. O.D. 4 ^ BI O.S. 4 ^ BI

C. O.D. 4 ^ BO O.S. 4 ^ BI

D. O.D. 4 ^ BI O.S. 4 ^ BO

10. Combine the following crossed cylinder Rxs into a spherocylindrical Rx form:

- 5.00 x 90 - 2.00 x 180

1. - 3.00 - 4.00 x 90
2. - 5.00 + 3.00 x 180
3. - 4.00 +1.00 x 90
4. B and C

11. Find the spherical equivalence of the following lens:

+ 4.50 + 1.50 x 90

1. + 3.75
2. + 5.25
3. + 4.50
4. + 2.25

12. Find the object displacement in prism diopters:

O.D. + 3.00

ADD + 2.00

5 below

R.L. 12 mm.

Executive seg.

1. 7.75 ^ BU
2. 6.00 ^ BD
3. 5.00 ^ BD
4. 5.00 ^ BU

13. What is the resultant prism of the following?

O.S. 2.00 ^ B.U. and 4.00 ^ B.O.

1. 3.61 ^ B. U. and I. @ 153
2. 4.47 ^ B. U. and O. @ 153
3. 4.47 ^ B. U. and O. @ 27
4. 5.39 ^ B. U. and O. @ 27

14. What is the effective power of the following lens?

D1 = + 12.00

D2 = + 1.00

Thickness = 6 mm.

N = 1.50

1. + 13.58
2. + 14.58
3. + 15.38
4. + 17.18

15. What is the effective power for the following Rx?

O.D. + 18.25

Examined V.D. = 10 mm.

Fitted V.D. = 15 mm.

1. + 16.00
2. + 17.00
3. + 19.00
4. + 20.00