

**THERE IS A CORRELATION BETWEEN THE  
OPTOMETRIC ADMISSIONS TEST(O.A.T) SCORES  
AND THE INITIAL PASSING RATE OF THE  
NATIONAL BOARD OF EXAMINERS IN  
OPTOMETRY(N.B.E.O.), PART ONE AT THE  
MICHIGAN COLLEGE OF OPTOMETRY.**

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by

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with Senior Research Advisor James Miller, O.D., F.A.A.O.

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There is a correlation between the Optometric Admissions  
Test (O.A.T.) scores and the initial passing rate of the  
National Board of Examiners in Optometry (N.B.E.O.),  
part one at the Michigan College of Optometry.

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Emily Coles and Jennifer McCrimmon

Has been approved

May, 2008

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**There is a correlation between the Optometric Admissions Test (O.A.T.) scores and the initial passing rate of the National Board of Examiners in Optometry (N.B.E.O.), part one at the Michigan College of Optometry.**

**Emily A. Coles**

**Jennifer McCrimmon**

**Background:** The main objective of this literature study is to determine if there is a correlation between the Optometric Admissions Test (O.A.T.) scores and the passing rate of the National Board of Examiners in Optometry (N.B.E.O.), part one. This study will focus mainly on the passing rate of part one: basic science. However, other correlations between the passing rate of N.B.E.O. part one will be explored. Our objective will be to assist the Michigan College of Optometry's Admissions Board in their selection of future students based on the O.A.T. score. Identifying "at-risk" students will save money, time, and heartache not only for the student, but for the profession as well. **Methods:** We will first conduct a literature search to identify any known correlations between the O.A.T. score and the N.B.E.O. part one passing rate. Then, securitization of O.A.T. scores and N.B.E.O. part one scores from M.C.O. students over the past nine years will take place. This study will be supplemented by an anonymous survey going into further detail of the student's academic history and N.B.E.O. part one preparations. **Results:** We will analyze the scores and survey results to assess if, and at what O.A.T. score there is a correlation between the passing the N.B.E.O. part one of not passing. **Conclusions:** We will summarize the survey findings.

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## **Introduction**

This survey attempts to determine the correlation between the Optometric Admissions Test (O.A.T.) scores and the passing rate of the National Board of Examiners in Optometry (N.B.E.O.), part one, at the Michigan College of Optometry. This correlation will help the admissions committee at the Michigan College of Optometry in their future selection of students based on the O.A.T. score. The survey also encompasses aspects such as the amount of hours spent studying, if the student was working while preparing for the N.B.E.O., what the undergraduate programs majors were, how many times a student had to take part one to pass, as well as many other correlated factors in studying for part one. It is our hope that the correlation between the O.A.T. and part one of the N.B.E.O. will help both students, and the admissions committee, in selecting the best candidates for the Michigan College of Optometry.



## **Methods**

### Phase 1: Data Collection

- a. Obtain addresses of alumni from The Michigan College of Optometry over the past nine years (306 in count).
- b. Mail an anonymous survey, including the purpose of the survey, survey consent, general information, and returning procedure, to each of the alumni.
- c. When one hundred (100) or more surveys have been returned, equaling a return rate of thirty percent (30%) or more, the data collection phase will be complete.

### Phase 2: Data Analysis

1. Tally survey results according to the O.A.T. scores, passing rate of part one of the N.B.E.O., studying methods, undergraduate majors, and how many attempts taken to pass part one.
2. Analyze data to determine overall correlation of the O.A.T. and the passing rate of part one of the N.B.E.O.
3. Analyze data by determining how each participant went about achieving passing part one of the N.B.E.O.

4. Compare data of respondents based on O.A.T. scores, passing rates of part one of the N.B.E.O. and studying methods.
5. Draw conclusions as to the overall correlation of O.A.T. and part one of the N.B.E.O.
6. Draw conclusions as to the overall studying methods for part one of the N.B.E.O. and the correlation to passing rates.
7. Draw conclusions as to how The Michigan College of Optometry may benefit from using the O.A.T. correlation to the passing rate of part one of the N.B.E.O. during the admissions process.

## Results

76 out of 306 Michigan optometrists surveyed, responded to our survey, giving an overall return rate of 24.8%. Out of the 306 Michigan optometrists surveyed, only 2.63% failed their initial attempt at the Nation Board of Examiners Part One examination.

(Figure #1)

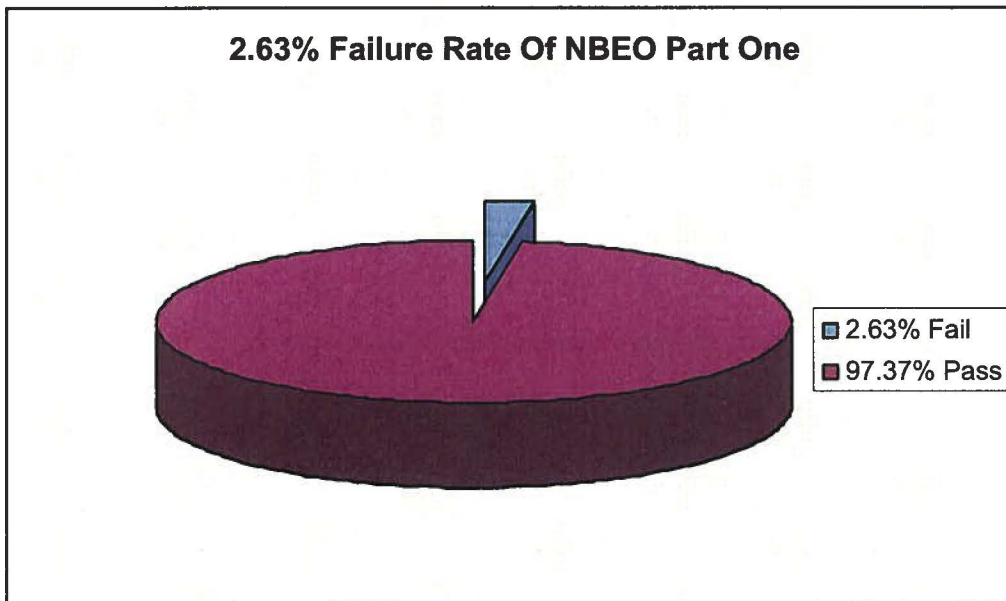


Figure #1

A graphical representation (Figure #2, Figure #3, and Figure #4) of each subject surveyed, in no particular order, their Optometry Admissions Test Score (OAT) and their National Board of Examiners Part One (NBEO Part One) scores appear below.

\*Note, not all subjects surveyed were able to give both OAT and NBEO Part One scores. These subjects do appear in Figures #2 - #4 however their information was not taken into account in the analysis of the data.

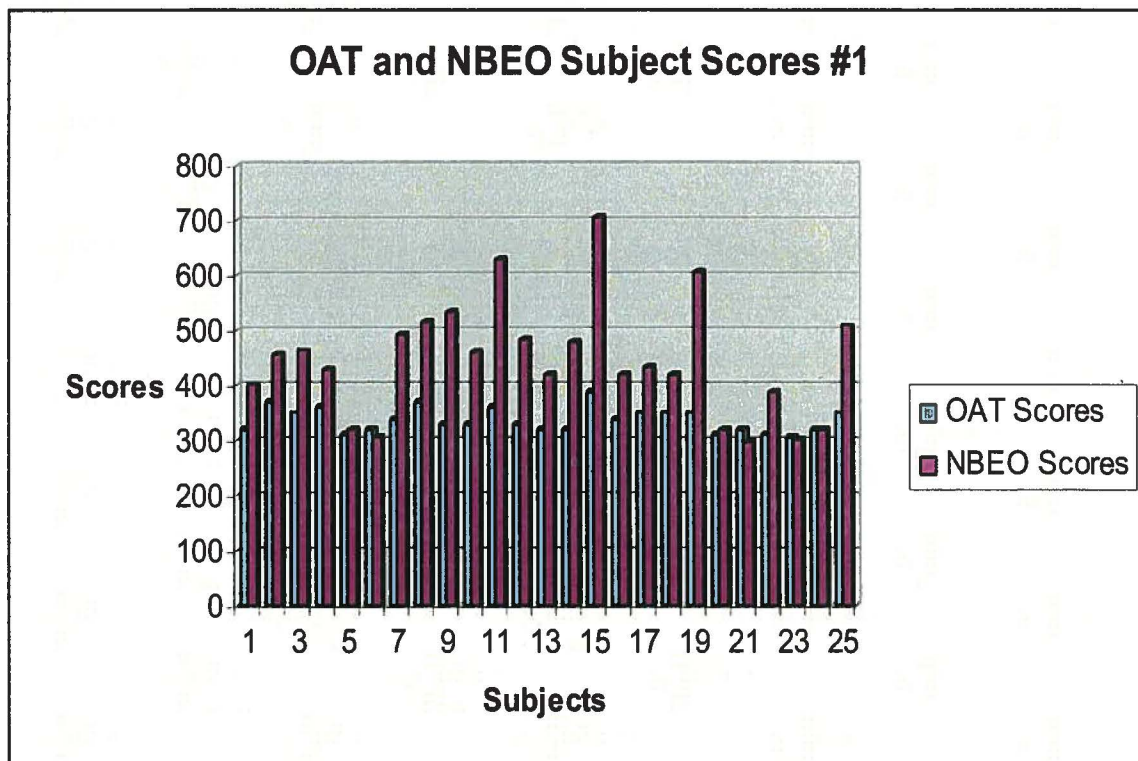


Figure #2

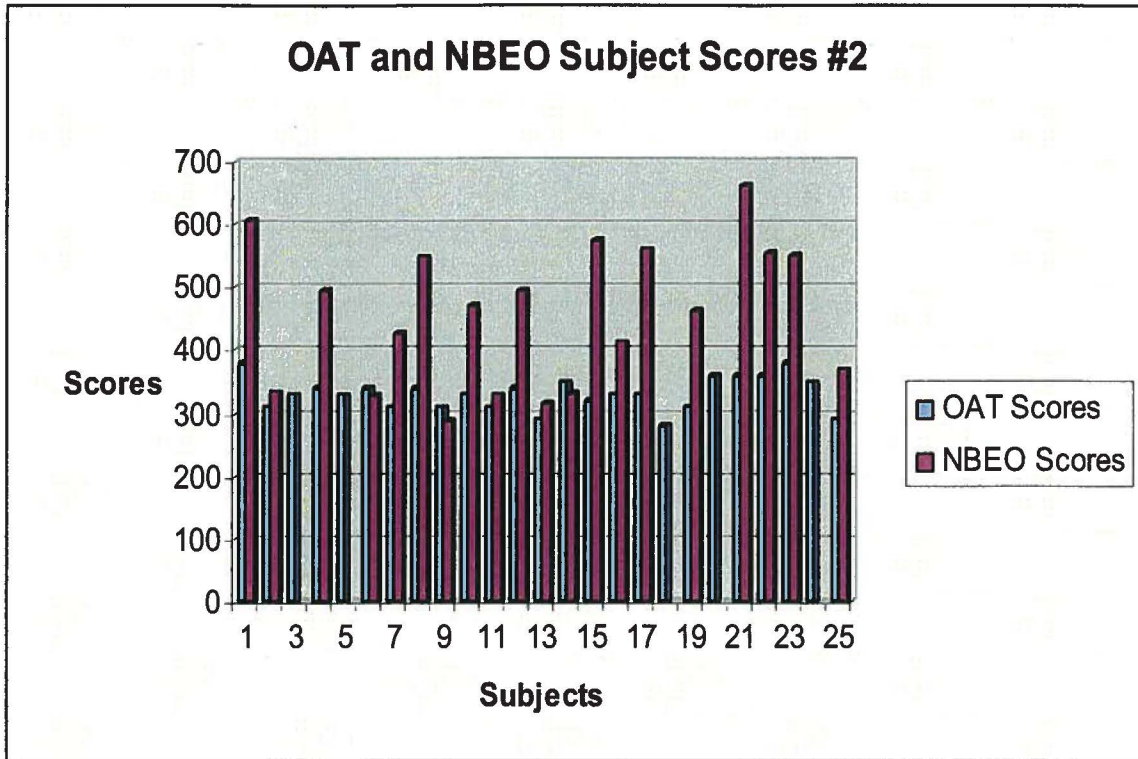


Figure #3

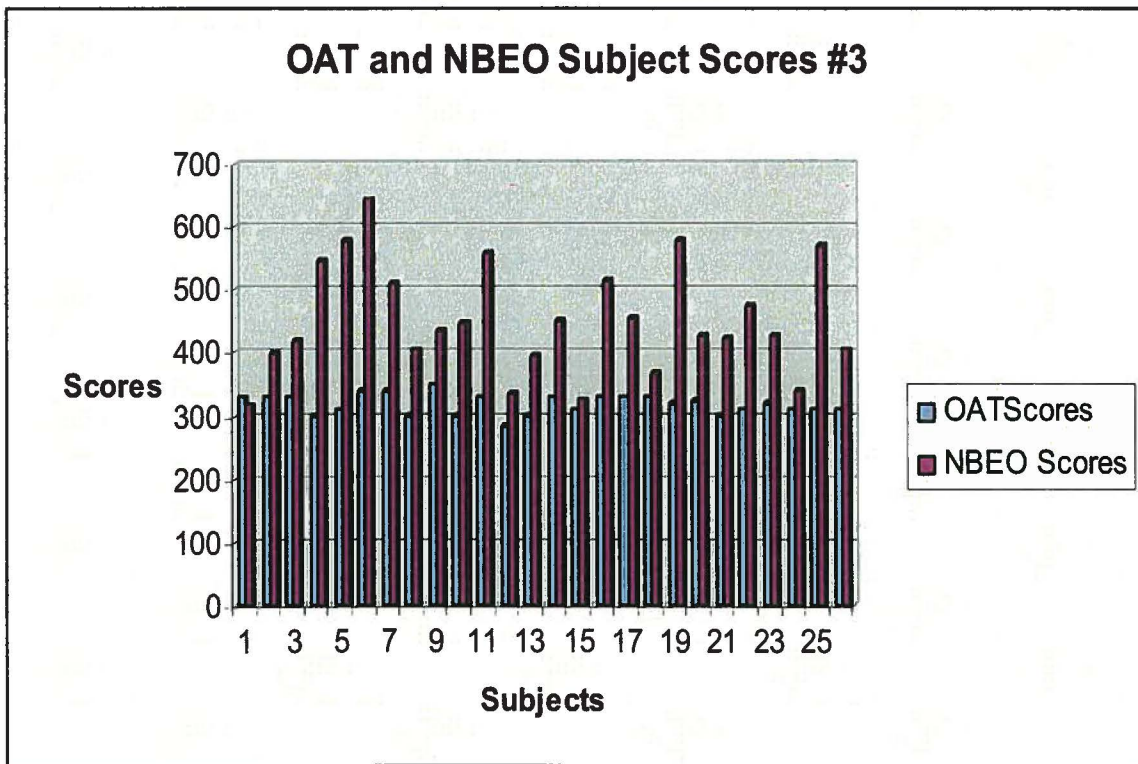


Figure #4

We broke our subjects up into groups according to their OAT scores and analyzed their NBEO scores accordingly.

The first group consisted of the subjects who scored less than a 300 on the OAT. There were only 3 subjects who scored below a 300 making up only 4.34% of our subject group. (Figure #5)

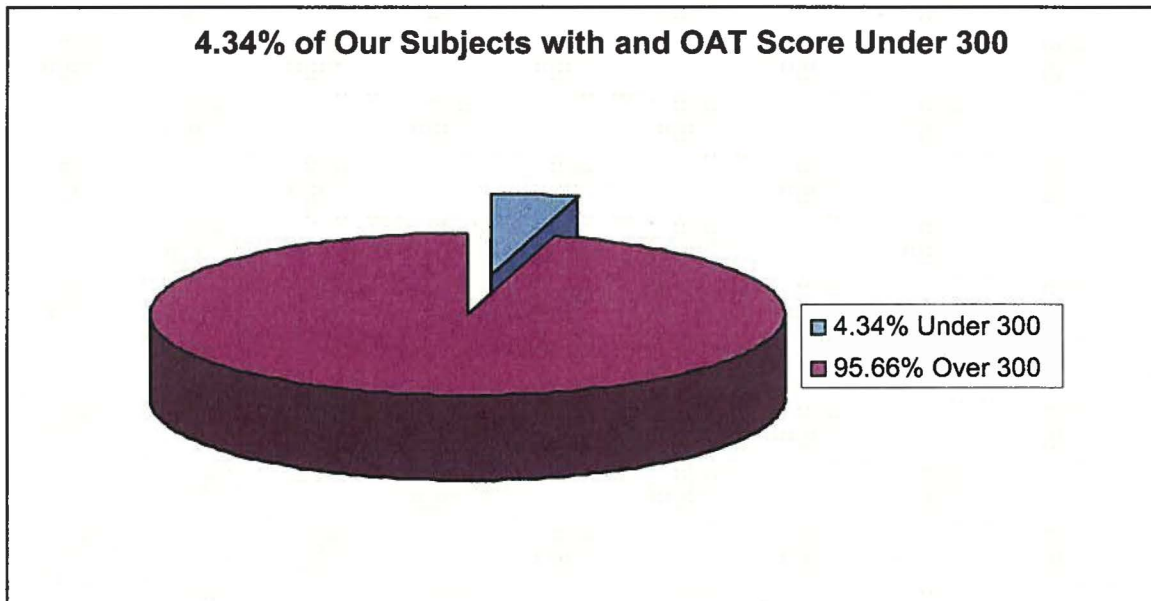


Figure #5

When we look at the three subjects who scored less than a 300 on the OAT, their average NBEO Part One score is 340.66. (Figure #6)

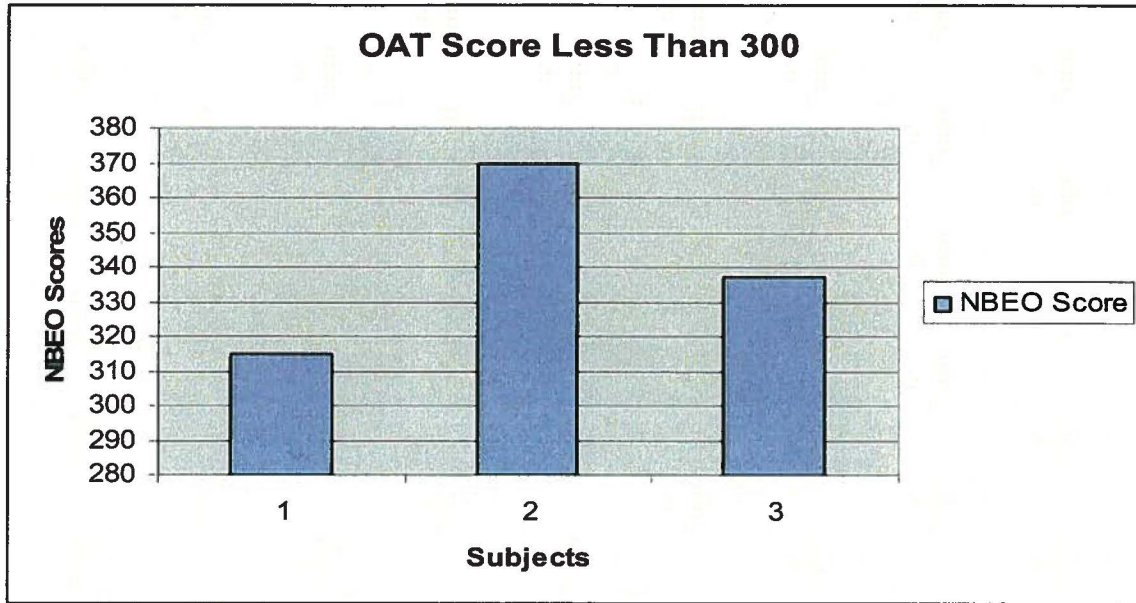


Figure #6

The next group consisted of the subjects who scored between a 300 and 325 on the OAT. These subjects make up 42.02% of the subject group. These subjects make up the bottom 25% of the OAT scores, not including those who scored under a 300. (Figure #7)

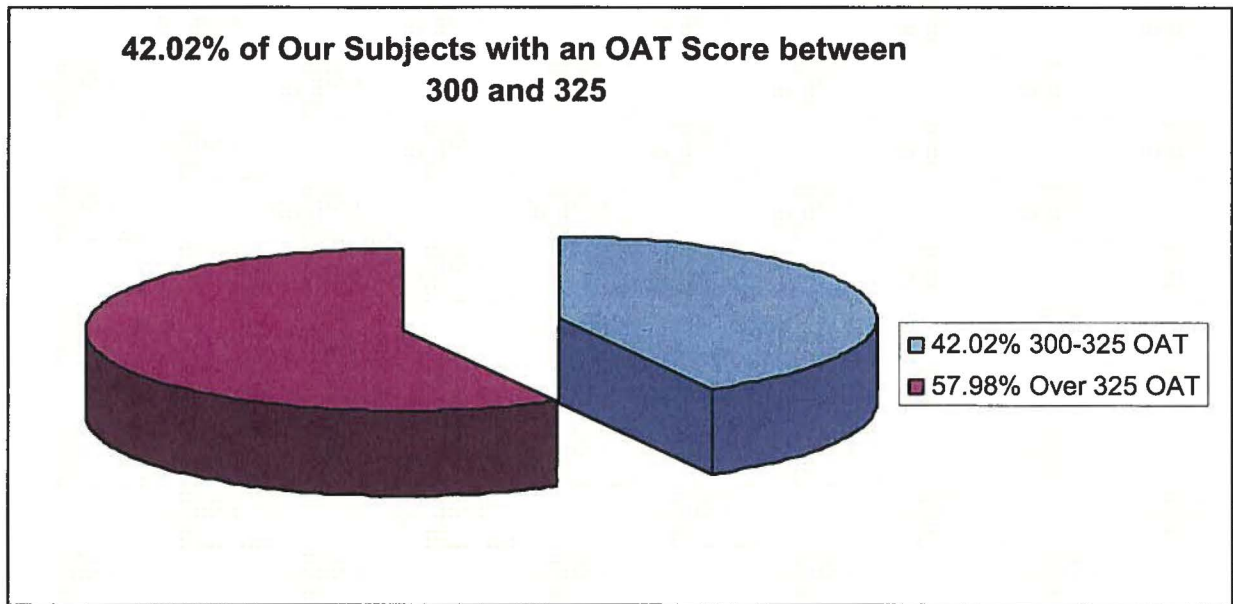


Figure #7

This group of 29 subjects has an average NBEO score of 410.86. The median score is 406 and the mode is also 406. (Figure #8)

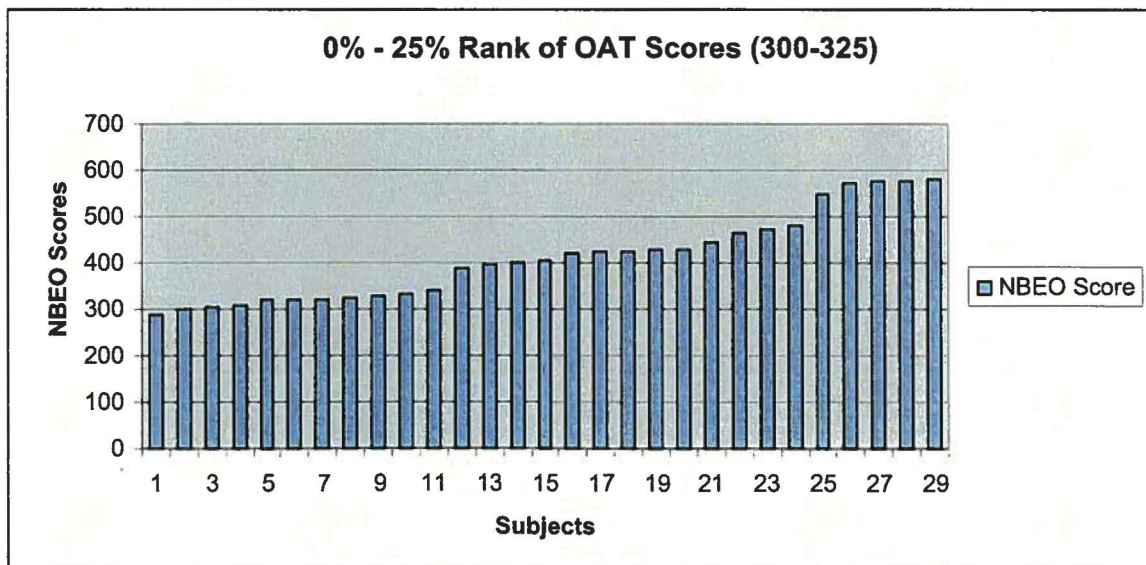


Figure #8



The next group included the subjects who scored between a 326 and 350 on the OAT. These subjects make up 42.02% of the subject group. (Figure #9)

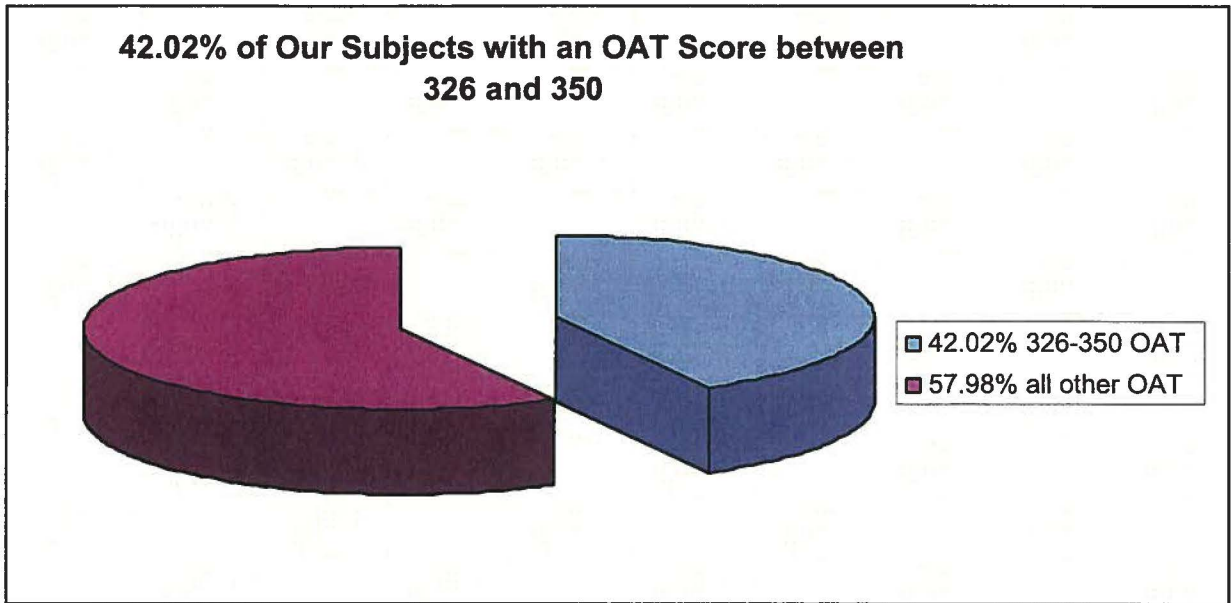


Figure #9

This group of 29 subjects has an average NBEO score of 468.34. The median score is 471 and the mode is 494. (Figure #10)

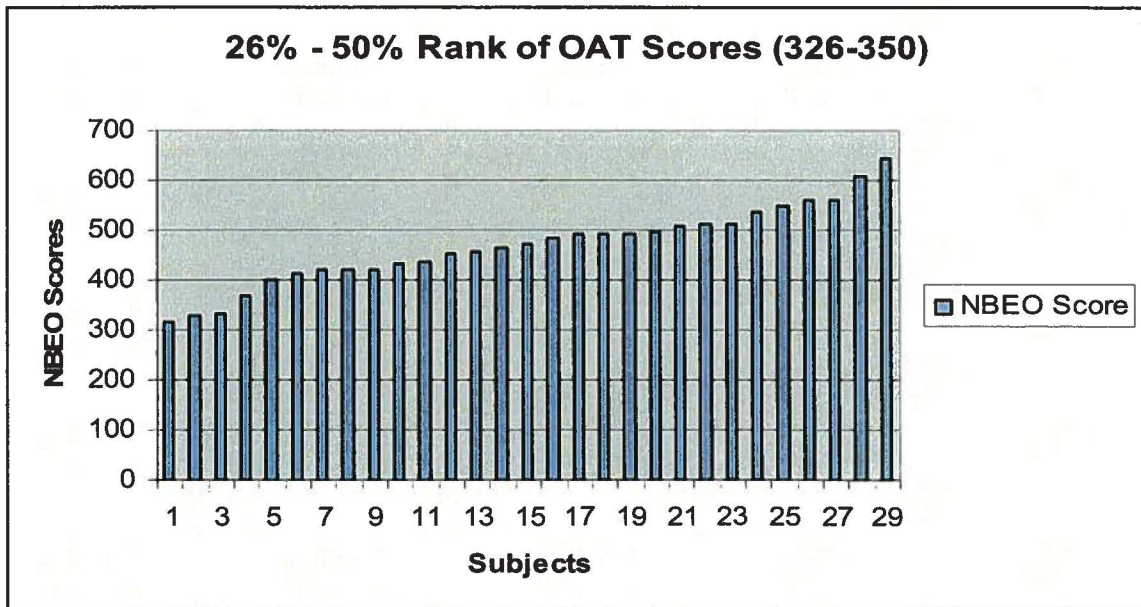


Figure #10

The next group of subjects who scored between a 351 and 375 on the OAT.

These subjects make up 7.24% of the subject group. (Figure #11)

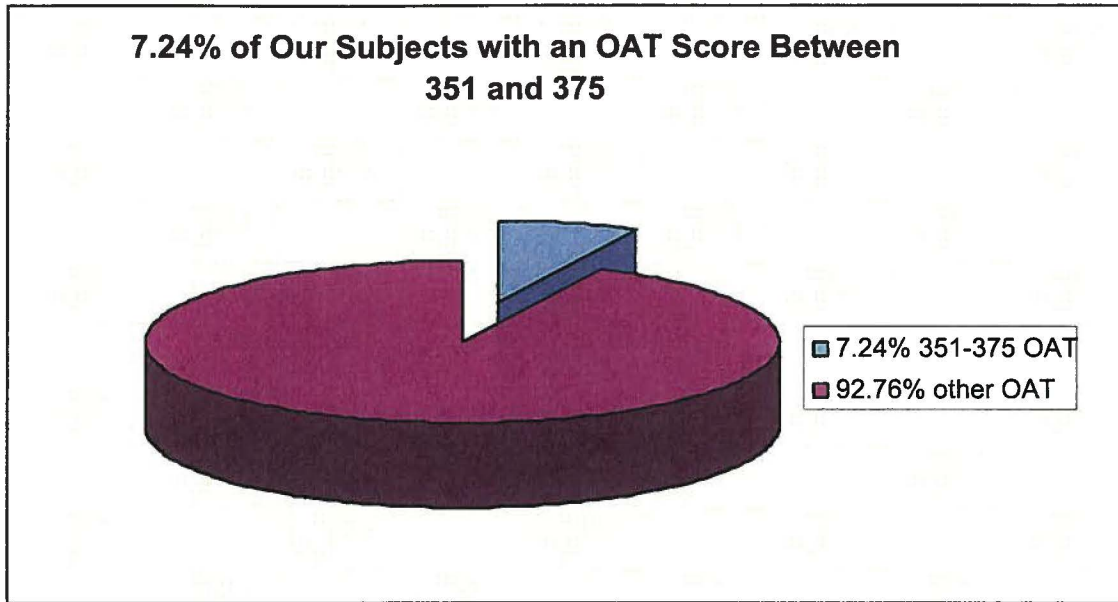


Figure #11

This group of 5 subjects has an average NBEO score of 546.20. The median score is 554. (Figure #12)

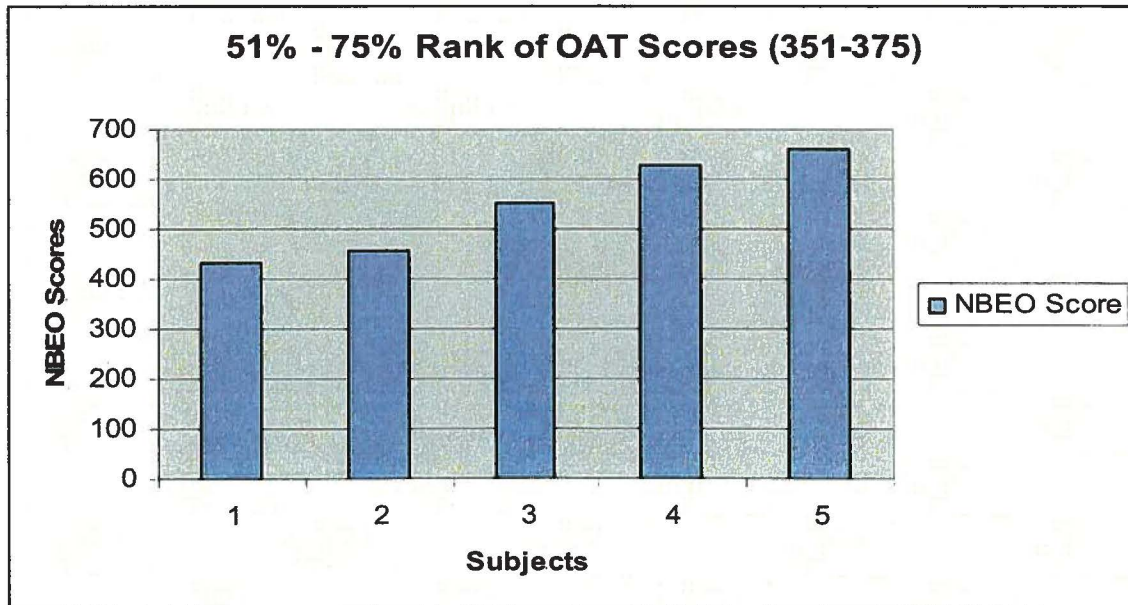


Figure #12

The final group included the subjects who scored between a 376 and 400 on the OAT. These subjects make up 4.34% of the subject group and the top 25% of our subjects, not including those subjects who scored below a 300. (Figure #13)

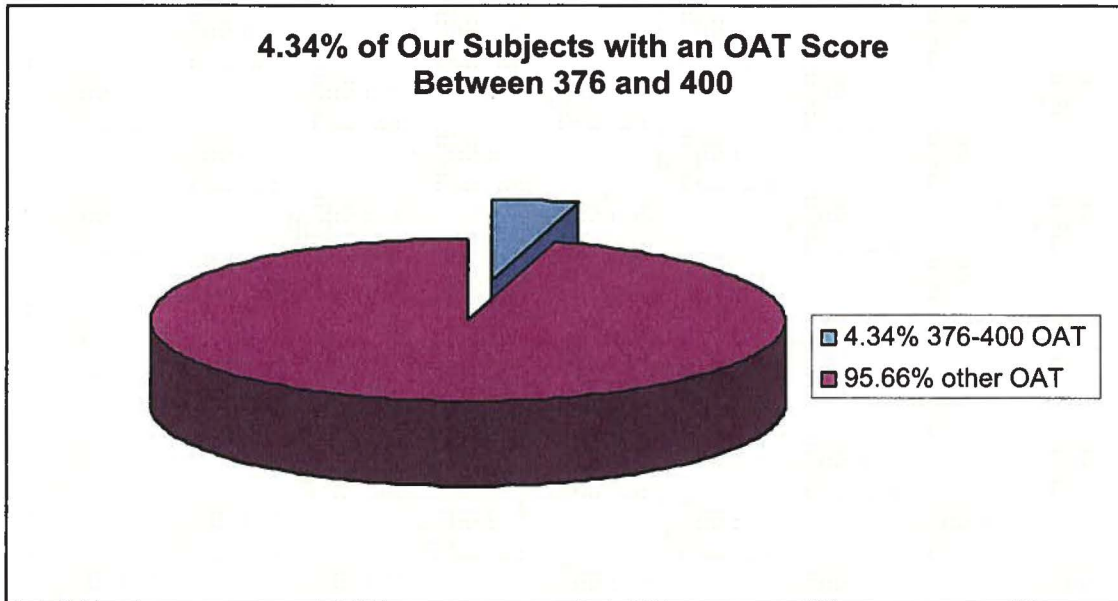


Figure #13

This group of 3 subjects has an average NBEO score of 621. The median score is 605. (Figure #14)

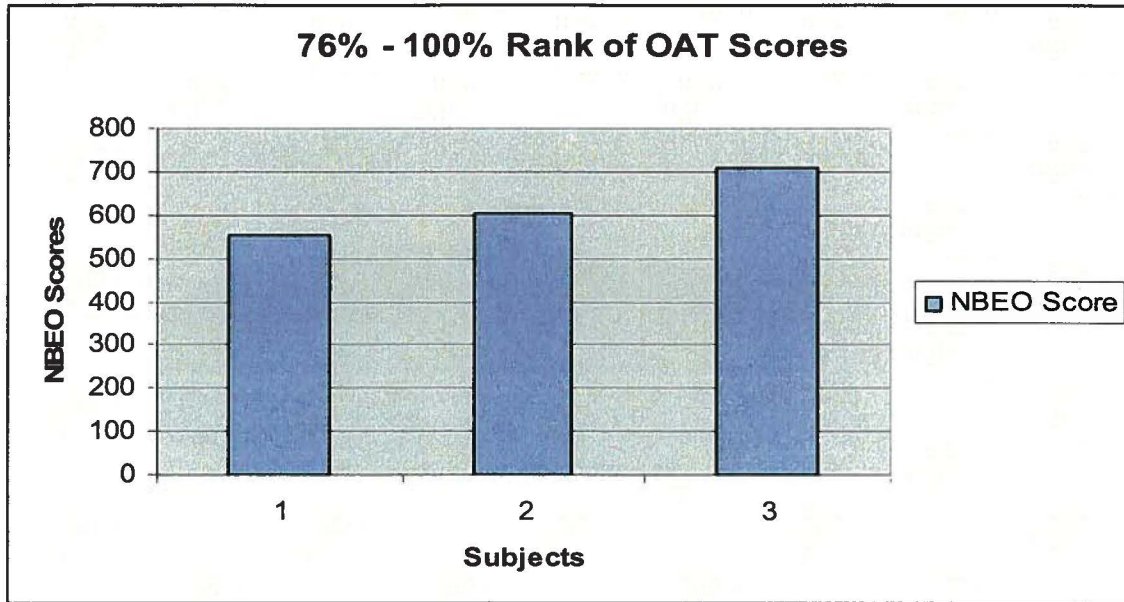


Figure #14

Next we broke our subjects up into groups according to their NBEO Part One scores and analyzed their OAT scores accordingly.

The first group was the subjects who scored less than a 300 on the NBEO Part One. There were only 2 subjects who scored below a 300 making up only 2.89% of our subject group. (Figure #15)

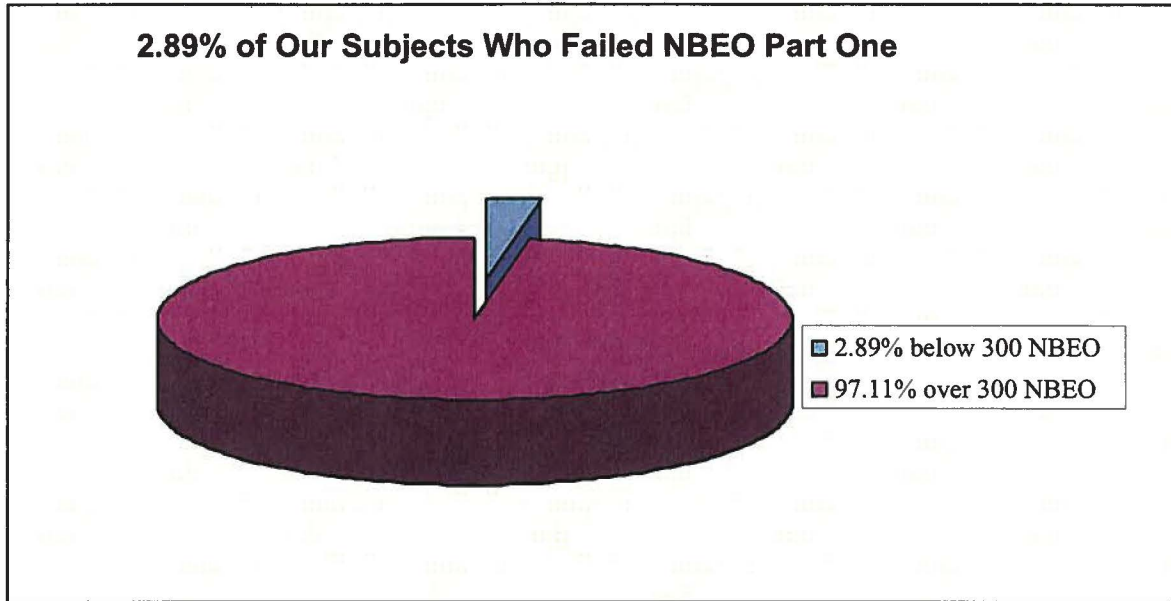


Figure 15

This group of 2 subjects has an average OAT score of 315. (Figure #16)

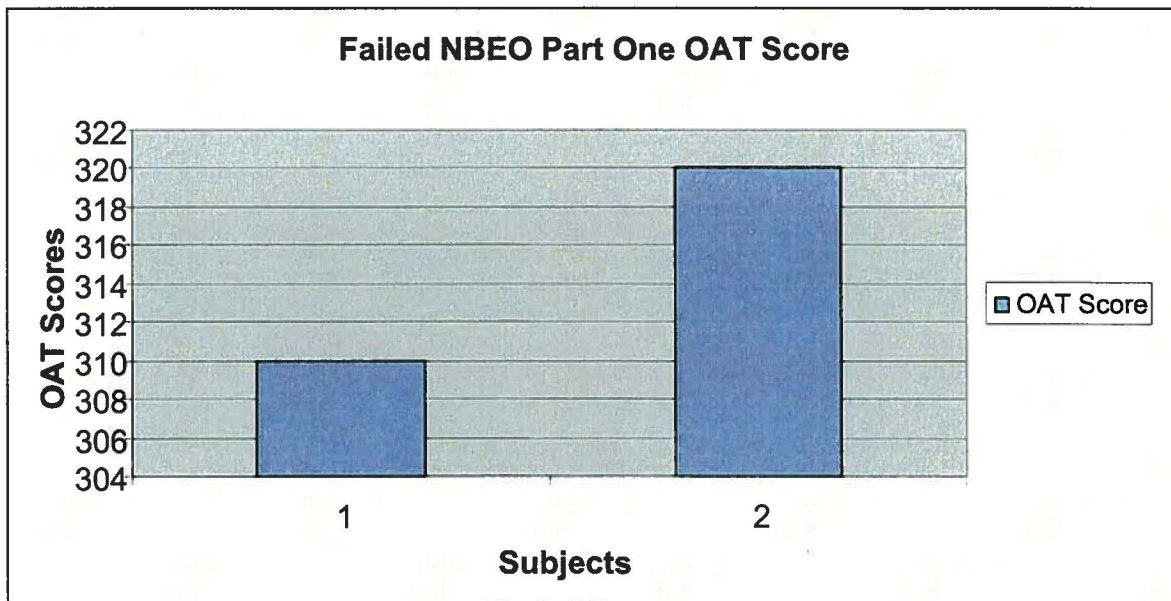


Figure #16

The next group was the subjects who scored between 300 and 400 on the NBEO Part One. There are 19 subjects who make up 27.53% of our subject group. These subjects make up the bottom 1/3 of our subject group not including those who failed NBEO Part One. (Figure #17)

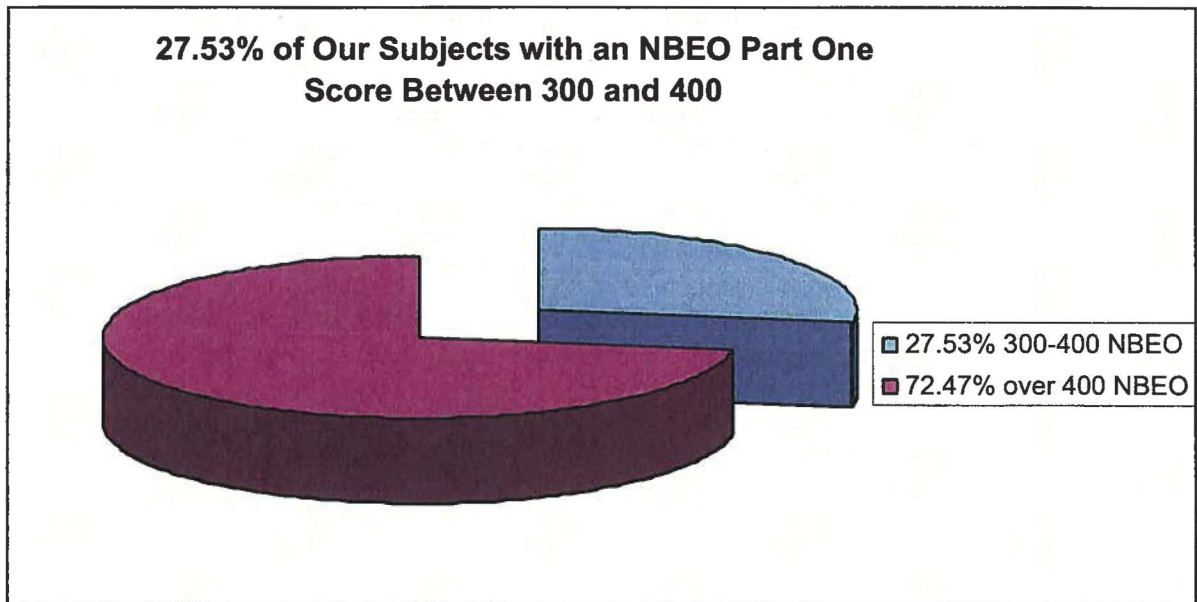


Figure #17

This group of 19 subjects has an average OAT score of 315. The median is 310 and the mode is 310 (Figure #18)

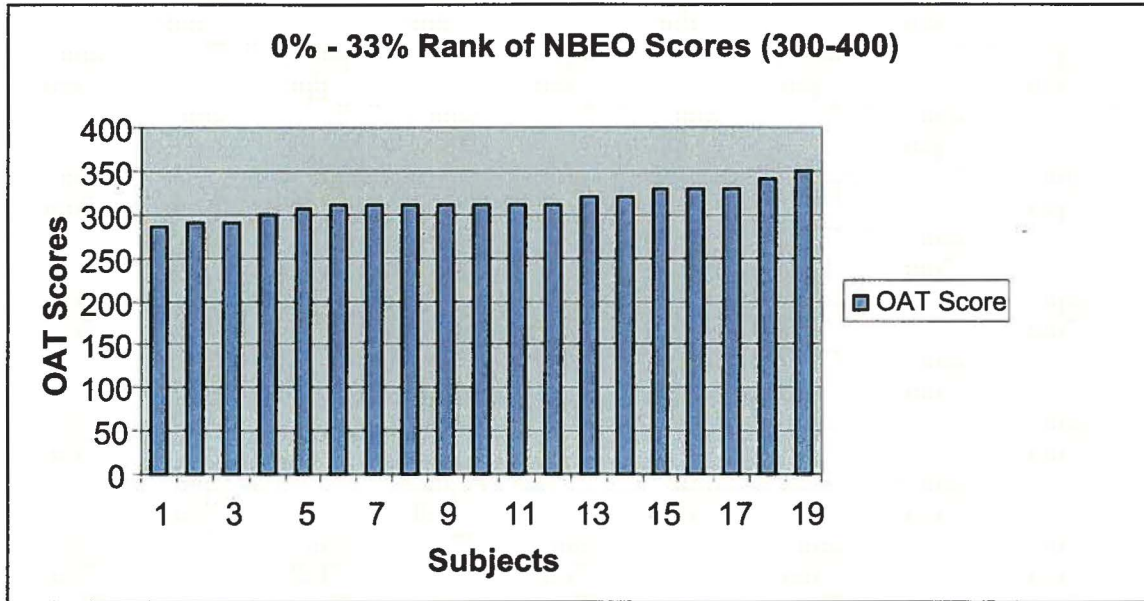


Figure #18

The next group was the subjects who scored between 401 and 500 on the NBEO Part One. There are 27 subjects who make up 39.13% of our subject group. (Figure #19)

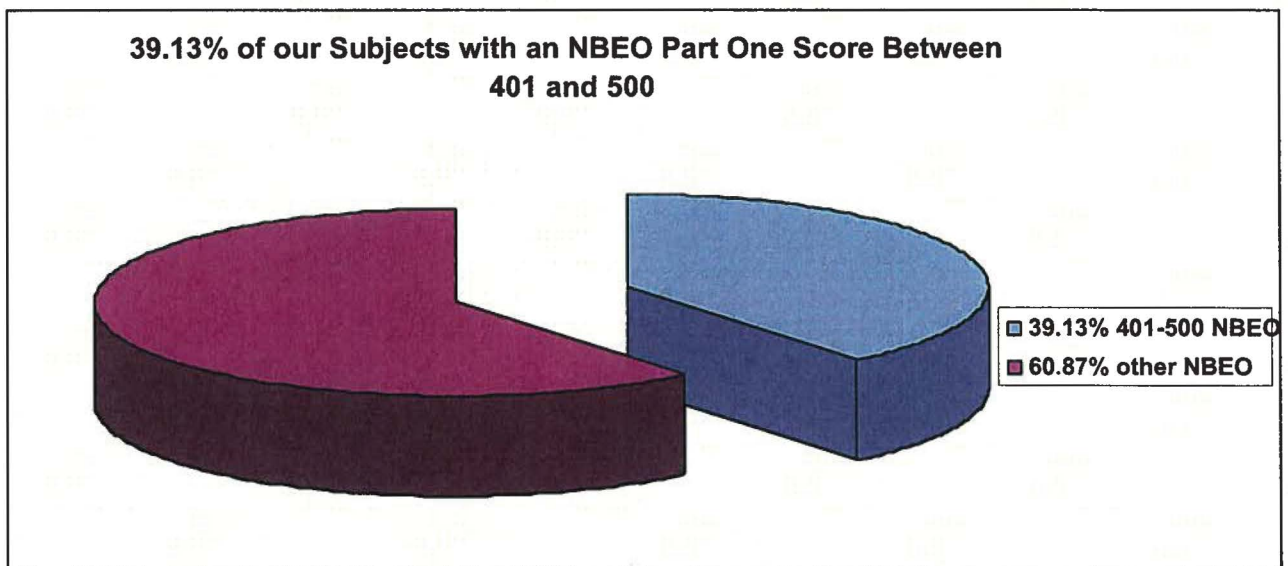


Figure #19

This group of 27 subjects has an average OAT score of 328.62. The median is 330 and the mode is 330 (Figure #20)

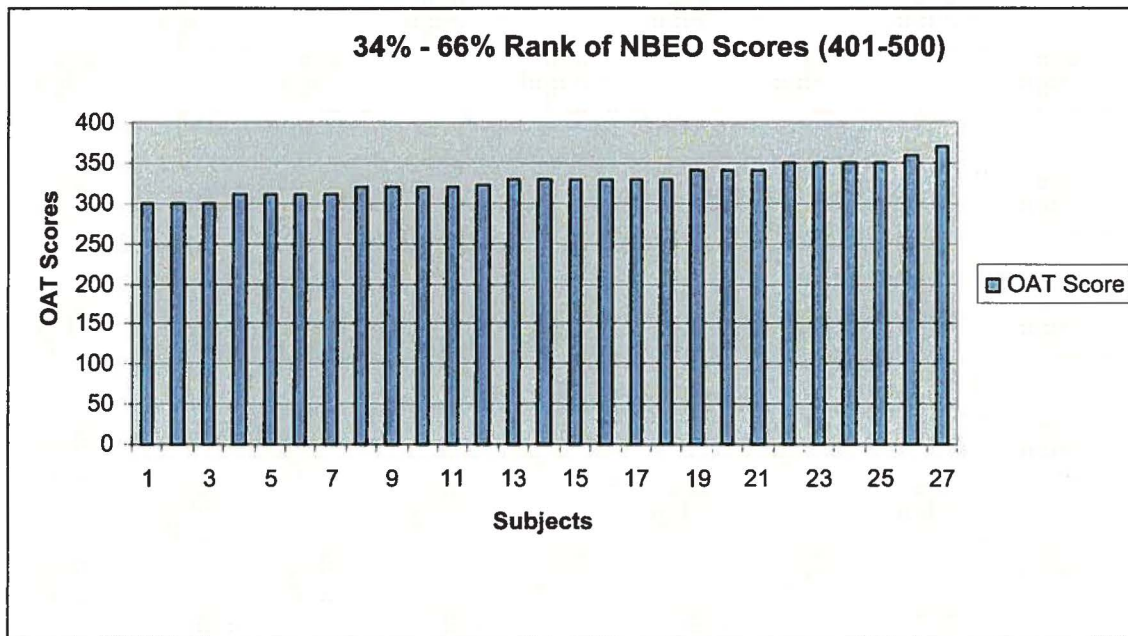


Figure #20



The last group consisted of the subjects who scored between 501 and over on the NBEO Part One. There are 21 subjects who make up 30.43% of our subject group and the top 1/3 of our subject group, not including the people who failed NBEO Part One.

(Figure #21)

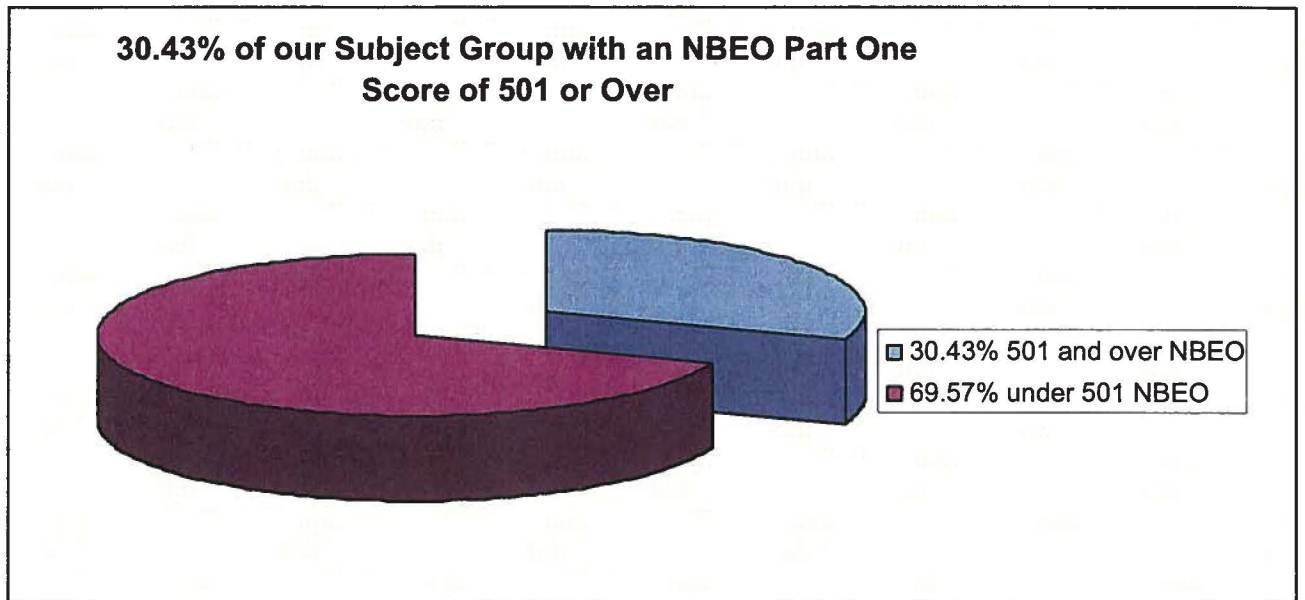


Figure #21

This group of 21 subjects has an average OAT score of 342.85. The median is 340 and the mode is 330 (Figure #22)

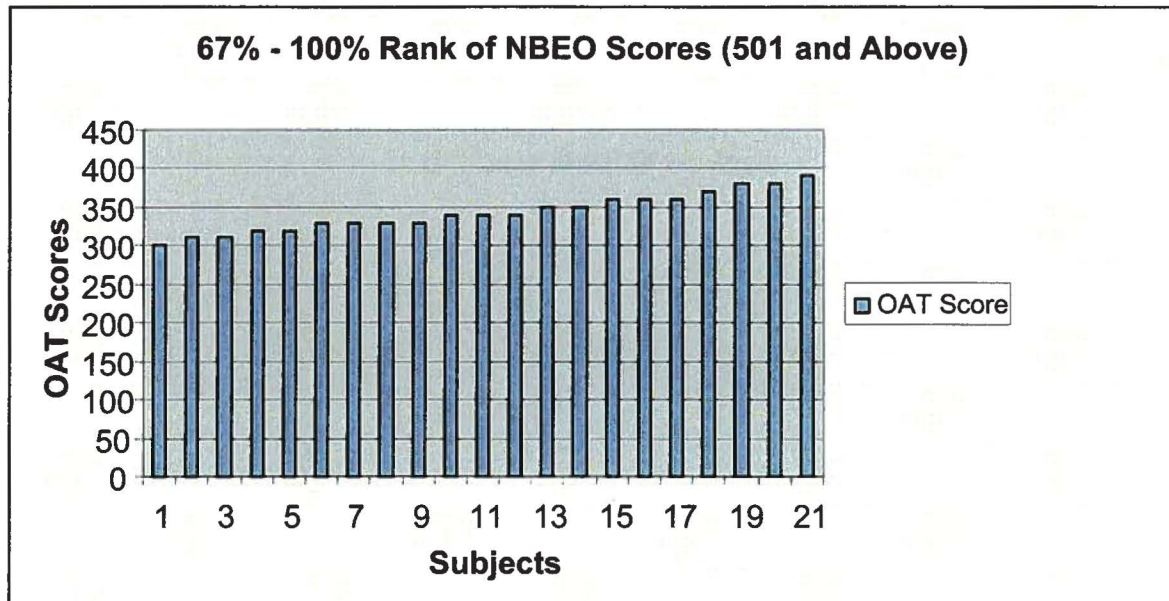


Figure #22

Our next objective was to analyze the OAT and NBEO Part One scores for those subjects who attended Ferris State University (FSU). There were 33 subjects out of 76 who attended FSU or 43.42% of our subject pool. (Figure #23)

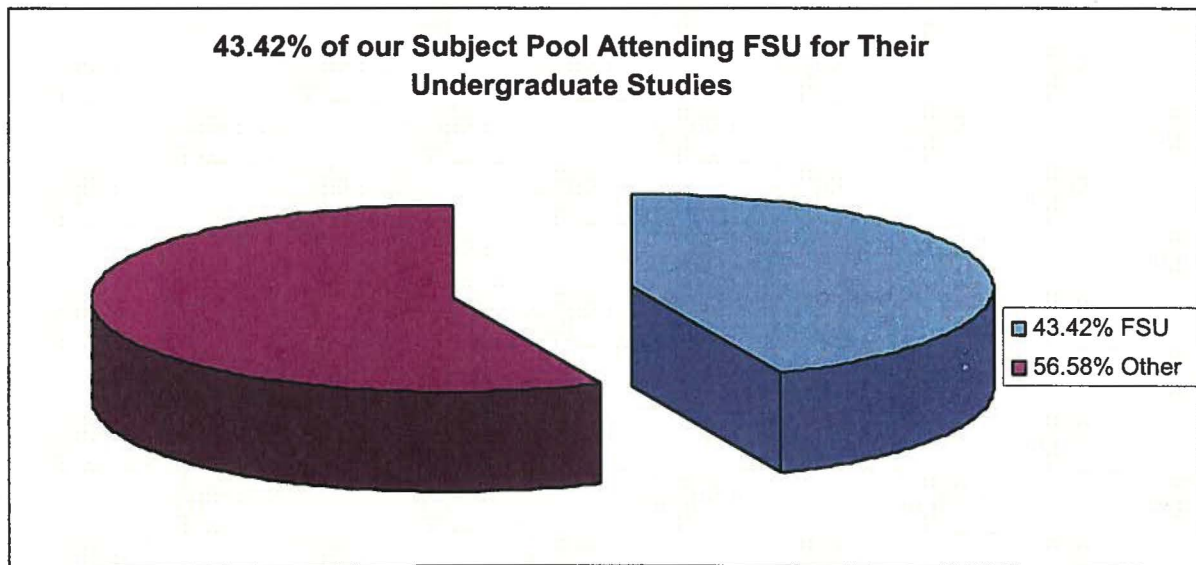


Figure 23

For those subjects who did their undergraduate studies at FSU their mean NBEO score was 451.74 and the median was 434. (Figure #24)

\*Note 6 subjects were unable to provide an NBEO Part One score

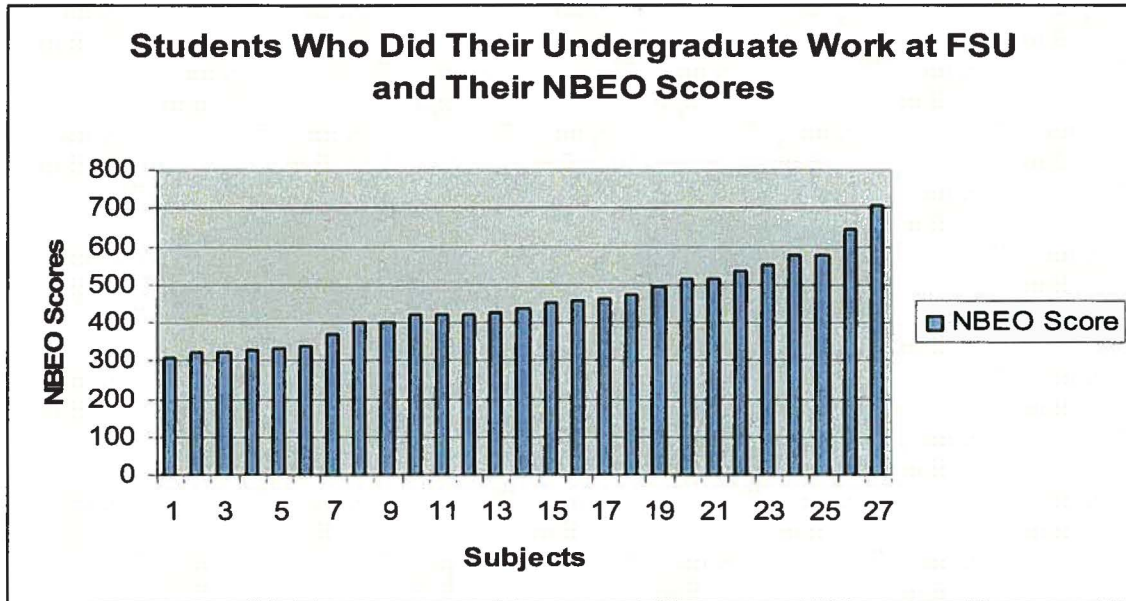


Figure #24

The average OAT score for those subjects attending FSU for their undergraduate studies was 330.30 and the median was 330. (Figure #25)

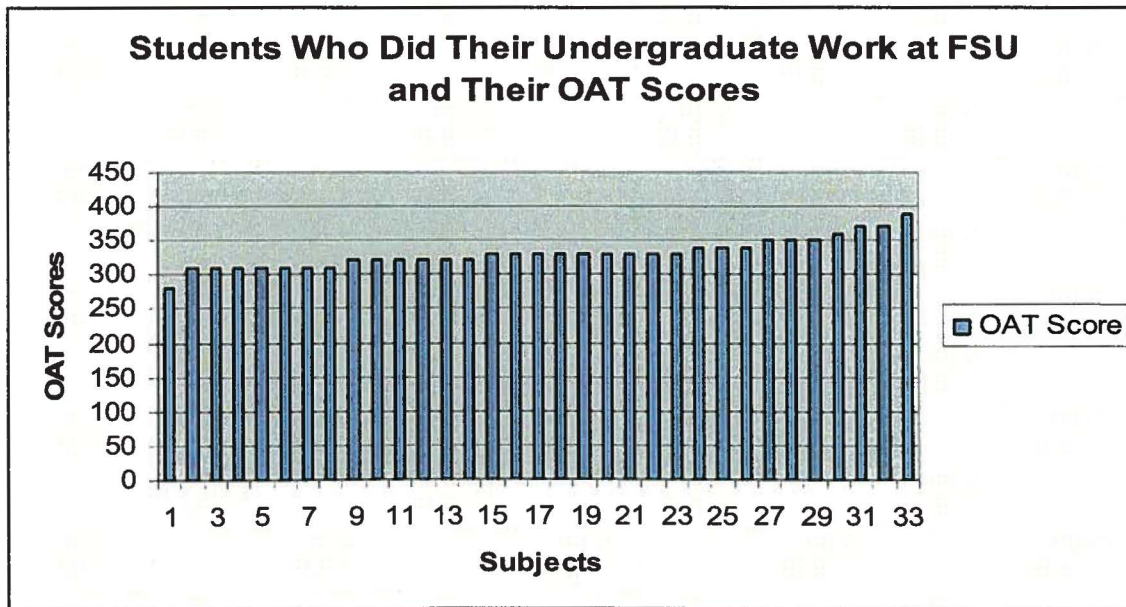


Figure #25

Our next analysis is of those subjects completing a bachelor's degree before entering the Michigan College of Optometry. We had 43 subjects out of 76 who had completed a bachelor's degree or 56.57%. (Figure #26)

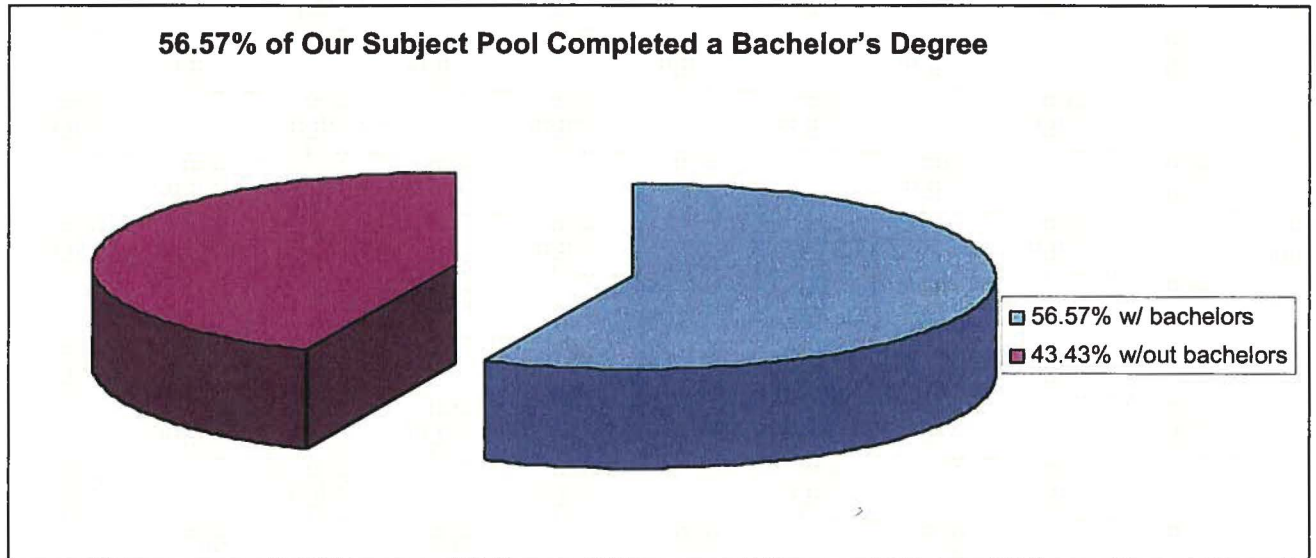


Figure #26

For those subjects completing a bachelor's degree prior to entering MCO their average OAT score was 327.76, the median was 330, and the mode was 330. (Figure #27)

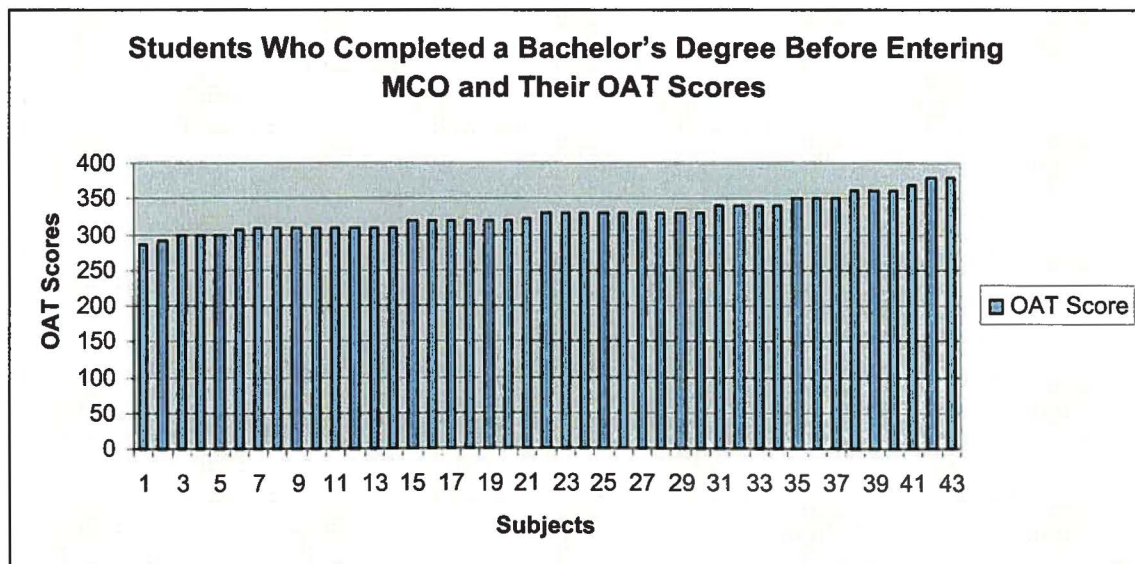


Figure #27

The average NBEO Part One score for those subjects completing a bachelor's prior to starting at MCO was 445.88 and the median was 456. (Figure #28)

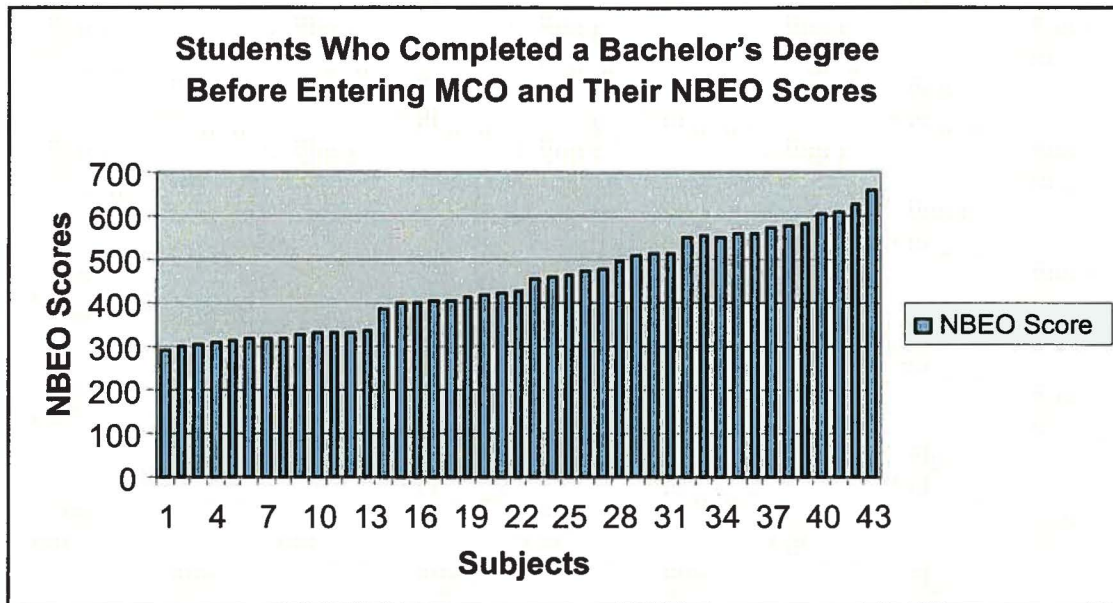


Figure #28

## Discussion

### The Optometry Admissions Test

The Optometry Admissions Test is a standardized test taken by all individuals seeking admission into any optometric school in the United States and the University of Waterloo in Canada. The Optometry Admissions Test is administered by the Association of Schools and Colleges of Optometry (ASCO).

The Optometry Admissions Test traditionally was given twice a year, once in October and once in February. Now the Optometry Admissions Test is computerized and

test takers can take the test as many times as they wish, but each attempt must be separated by at least ninety days. Applicants must have completed at least one year of college and the applicant should have taken courses focusing in biology, chemistry, and physics. Most test takers consider taking the test after a few years of college, and after taking several classes that cover material needed to be successful on the Optometry Admissions Test.

The Optometry Admissions Test costs \$130 and the applicant should register for the test no later than six weeks before the test is to be administered. Again, there is no limit to the number of times the test can be taken, but only the four most recent scores and the number of times the test was taken are submitted to the optometry school(s) of the applicant's choice. The test taker may choose up to five schools to which he or she wish to have their scores released to. An additional fee of \$10 is applied for any additional school(s) the test taker wants to receive their score.

The Optometry Admissions Test covers four sections: survey of the natural sciences, physics, reading comprehension, and quantitative reasoning. There are ninety minutes allowed for the survey of the natural sciences portion of the test. The survey of natural sciences covers biology, general chemistry, and organic chemistry. Fifty minutes are allowed for the physics portion of the test. This section tests aspects of physics ranging from units and vectors to optics. Fifty minutes are also allowed for the reading comprehension portion of the test. Reading comprehension tests the applicant's ability to apply information and answer questions after reading a given passage. The quantitative

reasoning portion of the test is given over forty five minutes. This section of the test requires the test taker to apply and perform math related calculations. The test taker will be asked to complete formulas, complete word problems, conversion, probabilities, and some other topics.<sup>1,2</sup>

### **The National Board of Examiners in Optometry**

The National Board of Examiners in Optometry offers three examinations: two consisting of complete integrated comprehensive areas and one entailing a short limited-scope examination. Each examination is intended for differing areas of a candidate's optometric education and training.

For the intention of this survey, we focused on part one, Basic Science, of the National Board of Examiners in Optometry. This examination consists of 435 multiple-choice questions spread out in three 3.75 hour sessions. The Basic Science portion addresses the candidate's knowledge of scientific principles on which optometric systemic and ocular conditions are based. This section is also known to stress more factual *recall* compared to the other two parts of the examination.

Part one of the National Board of Examiners is given to candidate's after completion of their second year in optometry school. Part two is given in the middle of their fourth year and part three is given towards the end of the fourth year of optometry school. This scheduling allows for the candidates to have time for all the necessary classes covering the needed materials. Part one consists of the following subsections: human biology, ocular/visual biology, theoretical, ophthalmic and physiologic optics, and

psychology. Candidates are also tested on how these basic science areas are related to the treatment of ocular conditions.

The National Board of Examiners of Optometry examinations are constructed by a large range of individuals in the optometric community such as faculty members, practitioners and state board members. These groups are then further divided into committees that make questions for each section of the examination. All individual questions are then analyzed for accuracy, correlation to the specific test content outline and appropriate difficulty level.

Each individual committee is responsible for the scoring of part one including determining any flawed test questions or irregularities that should be excluded in the final calculated score of the candidates. It is through this process that raw scores are converted to a standard score and passing rates are determined. A standardized score of 300 is needed to pass part one of the National Board of Examiners.

All three parts of the National Boards are offered twice each year, part one taking place in August and December. This allows candidates to take the examination again before preparing for part two and, therefore, falling even farther behind their optometric peers.<sup>3</sup>



## **Discussion of our Survey**

The goal of our survey was to determine the correlation between the Optometric Admissions Test (O.A.T.) scores and the passing rate of the National Board of Examiners in Optometry (N.B.E.O.), part one, at the Michigan College of Optometry. This correlation will help the admissions committee at the Michigan College of Optometry in their future selection of students based on the O.A.T. score.

Our survey was filled out and returned by a combination of 306 optometrists and optometry students that had already taken Part One of the National Board. These subjects were current students and alumni of the Michigan College of Optometry ranging from the class of 2009 to the class of 2000 (over 9 years). Surveys were mailed via the United States Postal Service. 76 of the 306 surveyed responded via the United States Postal Service, giving a 24.8% response rate. This percentage was less than we had hoped for, but we feel we were able to analyze the data that we did get effectively.

The first analysis was to determine the failure rate of the NBEO Part One from our subject pool. We only had two subjects reply that failed the NBEO Part One on their first attempt. This made our failure rate 2.63%. (Figure #1) This was not what we were expecting due to the national averages and the national failure rates. National data was only available for the past seven years (testing from August 2000 to August 2007) and the failure rate on average was 38.9%. However, it is important to note that subjects taking the NBEO Part One examination typically take the test for the first time when it is offered in August as opposed to the second testing date in December. The August testing

date failure rate is far lower than the December testing failure rate, 28.27% and 49.53% respectively. Since all of MCO students are required to take the NBEO Part One for the first time in August after their second year of optometry school, it is more accurate to look at the failure rate of 28.27%. Based on this information, we would have expected to see 21.48 of our 76 subjects fail the NBEO Part One examination. It was unusual for us to only see two subjects fail in our subject pool. Either the failure rate at MCO is far lower than the national average or only those who were successful on their first attempt chose to participate in our survey. We feel the later is the most accurate. This is unfortunate for our survey purpose, however we feel analyzing the numbers as opposed to the actual pass/fail criteria will still be adequate for our purpose. Another downfall on having only two subjects in our subject pool with fail data is that we do not have as much data on other aspects of failing the NBEO Part One as we would have hoped.

Figures #2, #3, and #4 show a graphical representation of our subject pool and their OAT and NBEO Part One scores in no particular order. In general, it is easy to see that most of the NBEO Part One scores are higher than the OAT score. There are some subjects however that did slightly better on the OAT but were still able to pass the NBEO Part One with a score over 300.

It is important to note that not all subjects were able to give both the OAT and NBEO Part One score. These subjects do appear in Figures #2, #3, and #4 but are not considered in the analysis of the data.

We then split the subject pool up into five different sub groups. Those who had an OAT score under 300 (Figure #5 and Figure #6), OAT score of 300 to 325 (Figure #7 and Figure #8), OAT score of 326 to 350 (Figure #9 and Figure #10), OAT score of 351 to 375 (Figure #11 and Figure #12), and those with an OAT score of 376 and higher (Figure #13 and Figure #14). We looked at each individual in each sub group and found an average NBEO Part One score for each sub group.

There was 4.34% of our total subject pool, or 3 subjects, that did not achieve an OAT score of 300. This sub group had an average NBEO Part One score of 340.66. It would be easy to assume that this would be the sub group where we would find our two subjects who did not pass the NBEO Part One, however neither of the subjects appear in this sub group.

29 subjects, or 42.02%, of our subject pool had an OAT score of 300 to 325. These subjects make up the bottom 25% of our subject group (not including those who did not achieve an OAT score of 300). This group had an average NBEO Part One score of 410.86, a median NBEO Part One score of 406, and the mode for this group was also 406. It is easy to see that this group's average NBEO Part One score is much higher (70.20 points) than those who did not achieve a 300 on the OAT, however the two subjects who did not pass the NBEO Part One appear in this sub group. These two subjects have an OAT score of 310 and 320.

In the next sub group of 29 subjects, with their OAT scores between 326 and 350, had an average NBEO Part One score of 468.34. The median score was 471 and the mode was 494. Here again, it is easy to see that the average NBEO score has risen (57.48 points or 12.27% rise) with the OAT score.

Our sub group with OAT scores between 351 and 375 had 5 subjects and makes up 7.24% of the subject pool. This sub group had an average NBEO Part One score of 546.20 and the median score was 554. This sub group had a 77.86 point rise or 14.25% increase in the NBEO Part One score than the later group.

The last sub group, OAT Score of 376 and higher, had 3 subjects in it or 4.34% of the subject pool. This sub group had an average NBEO Part One score of 621 and the median score is 605. This is a 58.8 point rise or 12.04% increase in the NBEO Part One score with a 25% rise in OAT score.

This data makes it clear to us that the higher the OAT score, the higher the NBEO Part One score. With each 25% rise in OAT score, we see on average a 65.88 point rise in NBEO Part One scores. Otherwise stated, with each 25% rise in OAT score we see an average a 12.85% rise in the NBEO Part One score average.

Our next analysis was somewhat the opposite of the later. We took the subjects NBEO Part One scores and broke them up into sub groups according to their score. There were four groups: those who did not pass the NBEO Part One (Figure #15 and

Figure #16), NBEO Part One score between 300 and 400 (Figure #17 and Figure #18), NBEO Part One score between 401 and 500 (Figure #19 and Figure #20), and NBEO Part One score of 501 and higher (Figure #21 and Figure #22).

The first group, representing the two subjects who failed the NBEO Part One, had an average OAT score of 315.

The next sub group, representing the bottom 1/3 of our subject group (not including those who failed the NBEO Part One), had 19 subjects in it or 27.53% of our subject pool. This sub group had a NBEO Part One score between 300 and 400. This sub group had an average OAT score of 315. The median is 310 and the mode is also 310.

The sub group with NBEO Part One scores between 401 and 500 had 27 subjects in it. This is 39.13% of our subject pool. This sub group had an average OAT score of 328.62, the median is 330, and the mode is 330. This is a 13.62 point rise in the OAT score or a 4.14% rise.

The top 1/3 of our NBEO Part One scores, the sub group with a 501 and above, had 21 subjects in it. These subjects have an average OAT score of 342.85, the median is 340, and the mode is 330. Here we see a 14.23 point increase in OAT scores or a 4.15% increase.

From these sub groups, it is easy to see that with increases in NBEO Part One scores the subjects OAT scores are higher. On average with each 33.33% increase in NBEO Part One score the OAT score went up 13.92 points or 4.145%.

Our survey also asked our subjects if they had attended Ferris State University (FSU) for their undergraduate studies. There were 33 subjects or 43.42% who attended FSU for their undergraduate studies (note, six of these subjects were unable to provide a NBEO Part One score). The average NBEO Part One score for this group was 451.74 and the median was 434. This is 25.67 points below the NBEO Part One average for the whole subject pool. The average OAT for this group was 330.30 and the median was 330. This is 4.94 points higher than the overall average for the whole subject pool.

Another aspect of our survey was if the subject completed a bachelor's degree before starting at the Michigan College of Optometry (MCO). We had 43 subjects out of 76 that completed a bachelor's degree. This is 56.57% of the subject pool. The average NBEO Part One score for this subject group was 445.88 and the median was 456. The average OAT score was 327.76 and the median was 330.30. Again, comparing to the total average NBEO Part one score, this is 31.53 points below the average and 2.4 points above the OAT average.

Our next objective was to look at the study materials that our subjects used.

(Figure #29) The study materials used and the number of subjects using those materials:

Berkley Study Guide for NBEO Part One 30  
Schwartz, Visual Perception 28  
Remington, Ocular Anatomy 28  
Neuro. Anatomy, Microbiology, and Biochemistry  
Made Ridiculously Simple Books 8  
Keating, Optics 19  
Sample Questions 6  
Outline Fill in Method 7  
Old Notes 19  
1,000 Questions 3  
USMLE First Aid Book 1  
Schneider-Scanto, Pathology 1  
Marks, Biochemistry 1  
Castanzo, Psychology 1  
High Yield Neuro, Gross Anatomy, Internal  
Medicine, Embryology, and Immunology Books 1  
Butterworth-Heinmann Part One Review Book 11  
Pearl Vision Study Guide Book 2  
Rat Facts 11  
Isolation 5  
Shanski Review Notes 1  
Campbell, Biology 1  
Pharm Book 1  
AOSA Study Guide 1  
OAT Prep Book 1  
Cramming 2  
KMK Book 13  
Cron Notes 2

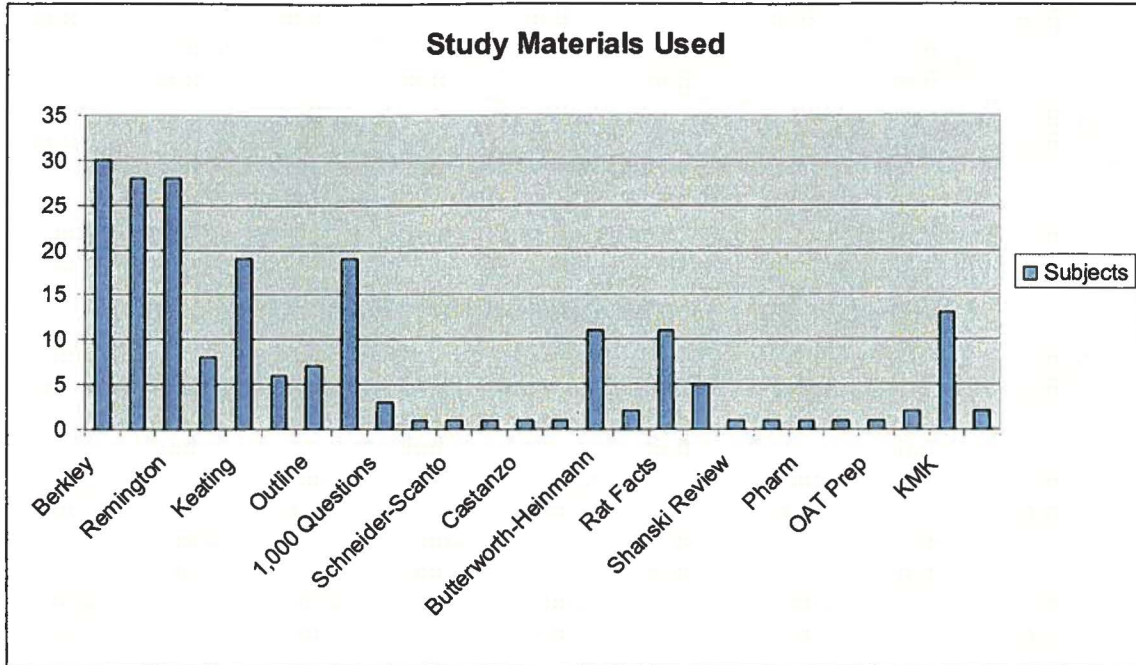


Figure #29, In order from above list

We then looked at our 21 subjects that scored above a 500 on the NBEO Part One and what study materials they chose to use. The most common study materials/methods that we saw were the use of the Berkley Study Guide and isolation. For our two subjects who failed the NBEO Part One, their study materials consisted of the AOSA Study Guide, sample questions, Schwarts, Remington, and Keating. It is interesting to see that neither one of these two subjects had used the Berkley Guide.

We also wanted to look at some other aspects of our survey that pertained to the 21 subjects who scored above a 500 on the NBEO Part One and those who failed the NBEO Part One.



We had 8 out of our 21 subjects (38%) who scored over a 500 on the NBEO Part One who went to Ferris State University (FSU) for their undergraduate work. As a side note, neither subject who failed the NBEO Part One went to FSU.

16 out of our 21 subjects (76%) who scored over a 500 on the NBEO Part One entered the Michigan College of Optometry with a bachelor's degree and both of those who failed the NBEO Part One had bachelor degrees. Currently MCO does not require applicants to have a bachelor's degree, however it is "encouraged". We feel that this is a significant percentage and that encouraging a bachelor's degree before entering MCO can only help the applicant in succeeding in passing the NBEO Part One.

Next, we looked at if the subject had a job the summer they took the NBEO Part One. 11 out of our 21 subjects (52%) had a full time job, 2 out of our 21 subjects had a part time job (9%), and 8 out of our 21 (39%) subjects did not work at all. For the two subjects who did not pass the NBEO Part One, one of the subjects worked full time and the other part time.

We feel that this information is some what inconclusive. The numbers do not necessarily support working or not the summer of taking the NBEO Part One. It is also important to note that the Michigan College of Optometry has restructured their curriculum and now the students are full time students the summer they take the NBEO Part One.

### **Conclusions:**

Even though we were unable to provide to the Michigan College of Optometry Admission Committee a possible cut off score for the OAT in correlation to the passing rate of the NBEO Part One, we are very confident that there is a correlation between the two tests. Our data makes it clear to us that the higher the OAT score, the higher the NBEO Part One score. Again, with each 25% rise in OAT score we see on average a 65.88 point rise in NBEO Part One scores. Otherwise stated, with each 25% rise in OAT score we seen on average a 12.85% rise in the NBEO Part One score average. Also our data shows us that the higher the OAT score, the higher the NBEO Part One score. With each 25% rise in OAT score, we see on average a 65.88 point rise in NBEO Part One scores. Otherwise stated, with each 25% rise in OAT score we seen on average a 12.85% rise in the NBEO Part One score average.)

As for the other aspects of our survey, we feel that a lot of the additional information was inconclusive. We were unable to find a strong additional factor that increased or decreased the likelihood of passing the NBEO Part One. According to our survey results it does seem reasonable to conclude that students seem to do better on the NBEO Part One when using the Berkley Guide as well as in isolation. It would be interesting to note in the future how those students who passed the NBEO Part One on their first attempt studied for the OAT. There is a correlation between the passing rate of the OAT and Part One of the NBEO, of which the study methods may be of significance.

### **New Information on the Restructured National Board Examinations**

The National Board of Examiners in Optometry has decided to restructure the three current test components. These new tests will be implemented in the 2009-10 year. The National Board has decided to update their exams due to recommendations and occasional assessments. Current recommendations have emphasized upgrading the clinical relatedness and integration of the exams content. The National Board plans on achieving this goal beginning in 2009.

Part I of the National Boards will be renamed "Applied Basic Science", or ABS, which will contain a mix of the current Basic Science Test items and much of the current Clinical Science test items. The test items will require the candidate to reference a clinical condition either explicitly or implicitly. Current Clinical Science test items moving to the ABS are those related to the epidemiology/history/symptoms and clinical testing. Those test items requiring diagnosis and treatment will remain in Part II of the National Boards. Part I will now consist of four sessions, each one 3.5 hours long instead of the current 3 sessions. There will be a total of 500 items now instead of the current 435.

In addition to the restructured test items of Part I, testing dates are also being changed. Currently, candidates take Part I in August before beginning their third year of optometry school. Since the new Part I will have a greater emphasis on clinical skills and conditions, students will now wait to take Part I until the spring of their third academic

year.

Part II of the National Boards will be renamed "Patient Assessment and Management", or PAM, which will be a longer version of the current PAM section of Part III. The PAM portion will be lengthened to two sessions (each 3.5 hours long) and will consist of 30-35 cases. Unlike the current PAM questions, some cases will now include test items in Public Health, Legal and Ethical issues, and/or Treatment and Management of Ocular Disease (TMOD). There will still be a pass-fail score for the TMOD portion of the exam for state board requirements. This section will still be available as a single test if a candidate fails to pass the imbedded TMOD portion of the exam. Part II will still be administered in December of the fourth year of optometry school.

Part III of the National Boards will be renamed "Clinical Skills" and will be lengthened in both time and the number of skills assessed compared to the current Clinical Skills portion of the current Part III. This portion of the National Boards will still be given at the end of the fourth year in optometry school.

As it stands now, Optometry classes of 2009 have the chance to take and pass all current parts of the National Boards before graduation. The current Part I will no longer be given after 2008, Part II no longer given after 2009, and Part III no longer after 2010. If candidates have not passed these tests by the respective dates, they will be required to take the new version of the same Part in order to complete the Boards. <sup>3</sup>

We do understand that the restructuring of the National Boards does have an affect on our overall data. However, we are confident that our overall conclusion will still hold true when considering the correlation of OAT scores with the passing rate of the National Boards Part One. We feel that this correlation still remains that the higher the OAT scores, the higher the NBEO Part One scores will also be. It is difficult to say the exact cut off point as to when an OAT score will be high enough to correlate with a passing score of the National Boards Part One. However, we feel that there is a strong enough correlation showing that those with higher OAT scores have a stronger passing rate of the National Boards Part One. One of the largest deciding factors for the admissions board to the Michigan College of Optometry upon considering potential candidates could be the OAT score. It would be interesting to do this survey again in a few years once the new National Boards have been implemented to determine if this correlation is the same, weaker or stronger.

## **REFERENCES:**

1. <https://www.ada.org/oat/index.html>
2. [http://www.opted.org/info\\_oat.cfm](http://www.opted.org/info_oat.cfm)
3. <http://www.optometry.org/>

APPENDIX A  
SURVEY LETTER

**Thank you for taking time to complete this survey; your input is sincerely appreciated. We feel that the outcome of our research will be very useful for the admissions board at the Michigan College of Optometry in their selection process for future optometry students. By finding a correlation between O.A.T. scores and the passing rate of part one of the N.B.E.O. examination, the admissions committee can admit students that will not only thrive in the Michigan College of Optometry curriculum but also go on to pass part one of the national boards on the first attempt.**

**Thank you again for your time!**

**Sincerely,**

**Emily Coles and Jennifer McCrimmon**



APPENDIX B  
CONSENT FORM

## Consent form:

### Summary of explanation:

The purpose of this research study is to determine the correlation between the Optometric Admissions Test (O.A.T.) scores and the passing rate of the National Board of Examiners in Optometry (N.B.E.O.), part one, at the Michigan College of Optometry. This correlation will help the admissions committee at the Michigan College of Optometry in their future selection of students based on the O.A.T. score.

A literature search will first be conducted to identify any known correlations between the O.A.T. score and the passing rate of the N.B.E.O. part one. Then after collecting the data from the anonymous surveys sent out to Michigan College of Optometry students over the past five years, a correlation of O.A.T. scores to passing rate of N.B.E.O. part one will be reported.

### Estimate of subject's time:

The subjects will be asked only once to contribute 15-20 minutes of their time to fill out a one page survey of their O.A.T. score as well as their N.B.E.O. score. Included in this survey is their undergraduate institution, undergraduate GPA, undergraduate degree, hours spent studying for the N.B.E.O. part one, and how many times part one was taken before passing.

### Experimental Procedures:

The subjects will be informed in writing that there is no foreseeable risk to them and that their confidentiality will be kept to the fullest. They will also be informed that if there is any discomfort at any point during the period of responding they can quit. Subjects can at any point choose not to answer any or all of the questions on the survey they have received; and all subjects may choose not to participate at all with no penalty or loss to them.

Subjects can and will receive the results of this research study upon request. These subjects will remain anonymous throughout this survey and literature search as well as in the research findings. The consent form will bear the following statement to ensure the confidentiality of the subjects: **"Your privacy will be protected to the maximum extent allowable by law."**

There will be no deception used throughout this research study therefore there is not a need for a debriefing period for the subjects. If at any point the subjects have a question or concern regarding their participation in the study they can contact the chair of the human subjects review committee, Dr. Connie Meinholdt at:

College of Arts & Sciences - ASC-2108  
Ferris State University  
Big Rapids, MI 49307  
Phone: 231-591-2759  
E-mail: [connie\\_meinholdt@ferris.edu](mailto:connie_meinholdt@ferris.edu)

Also if at any point the subjects need to contact either of the students conducting the research study they can be reached at:

<b>Emily A. Coles</b> 19109 Joslin Circle Big Rapids, Mi 49307 Phone: 231-679-0428 E-mail: <a href="mailto:EmilyColes@yahoo.com">EmilyColes@yahoo.com</a>	<b>Jennifer McCrimmon</b> 318 Mt. Hope Rd. Crystal, Mi 48818 Phone: 989-289-2669 E-mail: <a href="mailto:Mccr18@fsuimail.ferris.edu">Mccr18@fsuimail.ferris.edu</a>
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The project supervisor may also be contacted:

**Dr. James Miller**  
Ferris State University  
Pennock 422  
Big Rapids, Mi 49307  
Ext #2191  
E-mail: [James\\_Miller@Ferris.edu](mailto:James_Miller@Ferris.edu)

\_\_\_\_\_: By checking here, I fully understand that my information provided on this survey will be used in the research done by Emily Coles and Jennifer McCrimmon to correlate the OAT and NBEO part one examinations. I am only releasing my information under the strict guidelines outlined above regarding my confidentiality. I also fully understand that I am not required to participate in this survey, therefore if I choose not to participate I will disregard this form.

APPENDIX C  
SURVEY

**OAT Overall Score:** \_\_\_\_\_

**\*Natural sciences:** \_\_\_\_\_

**\*Reading comprehension:** \_\_\_\_\_

**\*Physics:** \_\_\_\_\_

**\*Quantitative reasoning:** \_\_\_\_\_

**NBEO Part One Overall Score:** \_\_\_\_\_

**\*Human Biology:** \_\_\_\_\_

**\*Ocular/Visual Biology:** \_\_\_\_\_

**\*Optics:** \_\_\_\_\_

**\*Psychology:** \_\_\_\_\_

**\* If you can not give the sub score please just give an overall score.**

**Undergraduate GPA:** \_\_\_\_\_

**FSU pre-op program, Yes/No:** \_\_\_\_\_

**Bachelors degree, Yes/No:** \_\_\_\_\_

**Undergraduate major:** \_\_\_\_\_

**How many hours spent studying for part one:** \_\_\_\_\_

**Study technique/resources:** \_\_\_\_\_

**Any extra classes taken, Yes/No: \_\_\_\_\_ If Yes, which class:** \_\_\_\_\_

**Books bought, used:** \_\_\_\_\_

**How many times part I was taken before passing:** \_\_\_\_\_

**Did you work the summer part one was taken:** \_\_\_\_\_

**If part one was not passed on the first try, what do you feel the reason was?  
(lack of studying, wrong resources, personal conflicts,... etc...)**

\_\_\_\_\_

**NBEO Passing of Part Two and Three. (If applicable)**

**Part Two, Pass/Fail:** \_\_\_\_\_ **Part Three, Pass/Fail:** \_\_\_\_\_