

Then and Now: Changes in Study Practices of First Year Optometry Students

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Abstract

Purpose: The purpose of this study was to determine if first year students revise their undergraduate study methods to deal with increased volume and depth of material in optometry college. **Methods:** Prior to matriculation, the Class of 2010 completed an online survey about their undergraduate study habits. Results indicated that the students' study habits would be inadequate. Upon their arrival, results were shared with students and recommendations for changes were discussed. In the spring, students compared their undergraduate study methods with their current study methods. **Results:** Individual observations were compared to determine if significant changes in students' study habits had occurred. There were a total number of 45 comparisons in which 15 were significantly different from chance at the 0.05 level or better by a chi-square test. **Conclusions:** Areas that showed the most significant change included motivation for studying; how far in advance students studied; and consistency of studying. Based on these results, the surveys and discussions on study habits will be continued

Key Words: Academic preparation, academic success, learning process, learning styles, study skills

Introduction

As the scope of the profession of optometry changes along with the content and format of licensing examinations, optometric educators review curricula to ensure that entry-level practitioners possess the necessary knowledge and skills to successfully manage their patients. Curriculum changes often include adding new topics into an already crowded lecture, lab, and clinic schedule.¹⁻⁸ Students are expected to absorb an ever-increasing volume of material and to recognize how to apply this learning to patient care. Yet concerns about the way students studied as undergraduates and about grade inflation in high school and college have surfaced.⁹⁻¹¹ Anecdotally, students themselves admit to cramming before exams and staying up all night before exams, yet receiving good grades. Many students expect the study methods they used as undergraduates to produce the same results in a doctoral level program. Will they be able to respond to the demands of doctoral level work? Will their study methods enable them to become proficient practitioners?

In a previous study, the authors asked the Class of 2010 at the New England College of Optometry (NECO) prior to matriculation, to complete an online survey about their undergraduate study habits.¹² The survey probed nine areas, including preferred learning style, motivation, how far in advance of exams they studied, study methods, support services and resources used, time management, memorization skills, and consistency of studying. The results of that survey showed the students' study habits would be inadequate for the demands of the optometry curriculum because they were not spending enough time studying; they were over-reliant on cramming; they were dependent on reviews by faculty for exam preparation; and they used memorization rather than studying for depth of understanding.^{13,14} When the students enrolled at NECO, the results were shared with them during a 2-hour seminar, and they were given recommendations for changes in their study habits to maximize their success in the program. As a follow-up, the authors wanted to determine if and how students changed their study habits during their first year of optometry school. The purpose of this paper is to report on the results of the follow-up survey.

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Methods

Paper surveys were distributed to the 104 members of the Class of 2010 at the

end of the spring term of their first year. In this follow-up survey, the students were asked to compare their undergraduate study methods (THEN) with

their current study methods (NOW). (See Table 1.) Eighty-one students (78%) completed and returned the survey. Items included: preferred learning

Table 1: Survey of Study Habits THEN and NOW

THEN and NOW			
Last summer, many students in the Class of 2010 filled out an online survey that asked about undergraduate study habits. This is a modified version of that survey that asks you to compare undergraduate methods THEN with current methods NOW. Please do not put your name on this paper, so your answers can remain anonymous. You may circle more than one answer. Thank you.			
1. Please circle your preferred learning style.			
THEN		NOW	
<ul style="list-style-type: none"> • Visual • Auditory/Aural • Read/Write 	<ul style="list-style-type: none"> • Don't Know • Other, please specify 	<ul style="list-style-type: none"> • Visual • Auditory/Aural • Read/Write 	<ul style="list-style-type: none"> • Don't Know • Other, please specify
If your style changed, please explain.			
2. Please circle your main motivation to study.			
THEN		NOW	
<ul style="list-style-type: none"> • Increase your knowledge • Get into graduate school • Grades 	<ul style="list-style-type: none"> • Receive merit scholarship • Other, please specify 	<ul style="list-style-type: none"> • Increase your knowledge • Get into graduate school • Grades 	<ul style="list-style-type: none"> • Receive merit scholarship • Other, please specify
If your style changed, please explain.			
3. Please circle how far in advance you studied			
THEN		NOW	
<ul style="list-style-type: none"> • 1 night • 2-3 nights • 2-3 weeks 	<ul style="list-style-type: none"> • Throughout the term • Other, please specify 	<ul style="list-style-type: none"> • 1 night • 2-3 nights • 2-3 weeks 	<ul style="list-style-type: none"> • Throughout the term • Other, please specify
If you studied differently, please explain.			
4. Please circle what study method you used most often			
THEN		NOW	
<ul style="list-style-type: none"> • Read the text • Review my own notes 	<ul style="list-style-type: none"> • Meet with a study group • Other, please specify 	<ul style="list-style-type: none"> • Read the text • Review my own notes 	<ul style="list-style-type: none"> • Meet with a study group • Other, please specify
If you used a different study method, please explain.			
5. Please circle what support services you used to study.			
THEN		NOW	
<ul style="list-style-type: none"> • Peer tutoring • Review sessions taught by TA's • Review sessions taught by faculty 	<ul style="list-style-type: none"> • Study groups • Other, please specify 	<ul style="list-style-type: none"> • Peer tutoring • Review sessions taught by TA's • Review sessions taught by faculty 	<ul style="list-style-type: none"> • Study groups • Other, please specify
If you used different support services, please explain.			
6. Please circle the resources you used.			
THEN		NOW	
<ul style="list-style-type: none"> • Textbook • My own notes • Old exams 	<ul style="list-style-type: none"> • Recommended readings • Handouts • Other, please specify 	<ul style="list-style-type: none"> • Textbook • My own notes • Old exams 	<ul style="list-style-type: none"> • Recommended readings • Handouts • Other, please specify
If you used different resources, please explain.			
7. How would you rate your time management skills:			
THEN		NOW	
<ul style="list-style-type: none"> • Excellent • Good • Fair 	<ul style="list-style-type: none"> • Nonexistent • Other, please specify 	<ul style="list-style-type: none"> • Excellent • Good • Fair 	<ul style="list-style-type: none"> • Nonexistent • Other, please specify
If changed, please explain.			
8. How would you rate your memorization skills?			
THEN		NOW	
<ul style="list-style-type: none"> • Excellent • Good • Fair 	<ul style="list-style-type: none"> • Nonexistent • Other, please specify 	<ul style="list-style-type: none"> • Excellent • Good • Fair 	<ul style="list-style-type: none"> • Nonexistent • Other, please specify
If changed, please explain.			
9. How consistently did you study?			
THEN		NOW	
<ul style="list-style-type: none"> • Every day • Once a week • Twice a week 	<ul style="list-style-type: none"> • Just before exams • Other, please specify 	<ul style="list-style-type: none"> • Every day • Once a week • Twice a week 	<ul style="list-style-type: none"> • Just before exams • Other, please specify
If changed, please explain.			

Please feel free to make any other comments about how you studied THEN and how you study NOW. Thank you.

style, main motivation to study, length of advance study, the students' rating of the effectiveness of their time management and memorization skills, consistency of study, study method used, support services used, and resources used. Students were given the opportunity to comment after each section and were also instructed that multiple responses to each question were acceptable. Students were assured their responses would remain anonymous.

Results

Survey results were accumulated in a Table of Observations in which the number of students responding to each item was tabulated. Individual observations were compared to determine if significant changes in students' study habits had occurred. There were a total of 45 comparisons for the nine areas questioned; 15 were significantly different from chance at the 0.05 level or better by a chi-square test.

Discussion

Students' preferred learning styles showed no significant change from when they were undergraduates. As expected, students chose "increase knowledge" as the main motivation to study and "get into grad school" was no longer a motivator. This was an obvious expected decrease and should be disregarded. Twenty-five percent of the students wrote comments that they now were studying to become a good doctor.

There was a significant decrease in the number of students who reported they studied only 1 night in advance of exams or only 2 to 3 nights in advance; there was a significant increase in the number of students who reported they studied 2 to 3 nights in advance or 2 to 3 weeks in advance. Several students commented, "There is too much information to postpone."

Table 2: Table of Observations
Significant differences are highlighted in yellow

1. What is your preferred learning style?			
	n Then	n Now	Chi Squared
Visual	47	57	0.96
Auditory/aural	21	35	3.50
Read/Write	56	63	0.41
Don't know	1	0	1.00
Other	1	2	0.33
2. What is your main motivation to study?			
	n Then	n Now	Chi Squared
Increase knowledge	23	71	24.51
Get into grad school	60	3	51.57
Grades	58	43	2.23
Receive merit scholarship	5	7	0.33
Other	0	7	7.00
21 (25%) responded, "To become a good doctor".			
3. How far in advance did you study?			
	n Then	n Now	Chi Squared
1 night	9	1	6.40
2-3 nights	52	6	36.48
2-3 weeks	11	25	5.44
Throughout the term	8	49	29.49
Other	1	0	1.00
21 (25%) responded, "There's too much information to postpone."			
4. What study methods did you use most often?			
	n Then	n Now	Chi Squared
Read the text	50	45	0.26
Review my own notes	65	73	0.46
Meet with a study group	9	28	9.76
Other	2	8	3.6
5. What support services did you use to study?			
	n Then	n Now	Chi Squared
Peer tutoring	16	21	0.68
Review sessions taught by TA's	43	58	2.23
Review sessions taught by faculty	51	57	0.33
Study groups	13	37	11.52
Other	11	6	1.47
6. What resources did you use in studying?			
	n Then	n Now	Chi Squared
Textbook	60	53	0.43
My own notes	73	79	0.24
Old exams	40	58	3.31
Recommended reading	14	33	7.68
Handouts	44	61	2.75
Other	0	2	2.00
7. Rate your time management skills			
	n Then	n Now	Chi Squared
Excellent	9	13	0.73
Good	34	53	4.15
Fair	31	13	7.36
Nonexistent	5	0	5.00
Other	0	0	
8. Rate your memorization skills			
	n Then	n Now	Chi Squared
Excellent	10	8	0.22
Good	44	53	0.84
Fair	24	18	0.86
Nonexistent	1	0	1.00
Other	0	0	
9. How consistently did you study?			
	n Then	n Now	Chi Squared
Every day	11	48	23.20
Twice per week	25	20	0.56
Once per week	11	3	4.57
Just before exams	32	6	17.79
Other	0	2	2.00

Students reported their study methods did not change from their undergraduate days, although more students reported they use “meeting with a study group” as a study method. Students reported the support services they used did not change significantly from undergraduate, except for meeting with a study group.

Students also reported no change in the resources they used in studying, except that more students reported they did the recommended reading.

The number of students reporting “good” time management skills increased significantly; and the number of students reporting “fair” or “nonexistent” time management skills decreased significantly. The authors believe the increased workload plus the responsibilities of living on one’s own off-campus, perhaps for the first time, demands an increased level of time management.

Students reported no change in their memorization skills.

Consistency of studying showed a significant difference: more students reported they studied every day, and fewer students reported they studied only once per week or only just before exams.

In a doctoral level program, as time passes, students change their previous attitudes toward studying and retention of knowledge. The authors believe that early patient care exposure (which at NECO takes the form of sending students on screenings starting as early as week 4 of their first year) plays an integral part in the transition from undergraduate student mindset to doctor-in-training approach.¹⁵ This early exposure compels students to develop a deeper understanding of the three-part relationship between studying, learning, and application of knowledge to patient care.

Twenty-one students chose to clarify their response to item #3, how far in advance you studied. Comments included:

- One student admitted “just studied for the test before,” implying that now studying is for the sake of knowledge application.
- One student reported he studied for “longer durations and more frequently.”
- Fourteen students mentioned in-

creased workload or volume of material.

- Four students mentioned keeping up with the material to avoid cramming.
- Not enough time, and just the word “hard!” were written by two students.
- Other comments included: “Need to attend to each subject more intensely.” “Need to start earlier to do well.” And “It’s simply impossible to cram!”

Conclusion

Most optometry students experience a natural evolution from undergraduate study methods to obtain the deeper levels of understanding needed to master the first-year optometry curriculum. Learning how to effectively study is a process of relearning how to study by shedding old methods, especially in the area of time management, that no longer produce good grades and do not lead to good patient care. Our hope for our students is that this epiphany comes sooner rather than later.

At The New England College of Optometry, during admissions interview days, students are asked to think about how doctoral level work differs from undergraduate, and then they are told about the resources available to them: peer tutoring, clinical tutoring, and study skills strategies. To improve student performance on their first midterms and to decrease the possibility of poor performance on same, faculty and student service personnel should encourage students to rethink their approaches to studying: to study for mastery of material rather than relying on cramming and memorization to pass exams.

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