

WESTMONT COLLEGE
KINESIOLOGY DEPARTMENT

A SIX-YEAR PROGRAM REVIEW REPORT

SUBMITTED BY THE
DEPARTMENT OF KINESIOLOGY

FALL 2017

Westmont College Kinesiology Department Program Review 2017

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I. Introductory Summary

This past six-year review cycle has truly been a collaborative effort among the members of the Kinesiology Department. We began this process early and made the actual writing of the report a department priority for the 2016-17 academic year. In the fall, we conducted an alumni survey with a 50% response rate. In the spring, we conducted two focus groups to gather input from current students. Monthly meetings were set aside to examine and reflect on the data collected. Each section of this report was drafted together as a department, re-examined and then finalized. We began the spring semester with a mid-year day-long retreat and ended the semester with a final afternoon retreat. Every voice has been heard and represented in this final document. We have chosen to begin with this assertion because it demonstrates so well our greatest strength-cohesion. We are a department that cares deeply for each other, our students and our mission at Westmont. We are excited to demonstrate the strengths of our department, areas to target during the next cycle of review, student learning, alumni feedback and comparison data with other institutions.

By all measures, our major is thriving. We have seen a steady increase in majors since beginning this 6-year review cycle. In three of the last 6 years, our graduating class was the highest in the college. While this growth is exciting, it has also driven our key questions for this 6-year review cycle. Is our current curriculum effective for student learning? What is missing in our course offerings? How do our facilities limit our curriculum? This review helped us to answer these questions.

We used assessment of our program learning outcomes, alumni survey, and focus groups to help us to answer the key question related to curriculum. How well is our curriculum serving our students? We had much to learn from our program learning outcomes. PLO's #1 and #2 gave our department helpful data for strengthening the research component of our major, an identifiable deficiency in our curriculum. PLO #1 data was accumulated slowly as we added more research opportunities for students. It was quickly discovered that we needed an objective tool to assess student projects and therefore developed and put into practice a rubric tool. The process was strengthened when we implemented the PRC suggestion of rater-reliability as an additional measure of assessment.

PLO#2 assessment helped our department to do a number of "firsts", including a research project designed to give students a "real world" experience embedded in two courses in our major. Direct and indirect assessment tools were used effectively. Collaboration between the two professors of major courses was invaluable for the stimulation of future ideas. Although this was a time intensive project, 95% of students recommended that a project of this nature be continued in future classes. These added research components to our coursework, along with two off-campus targeted international research experiences in Bath, England, have now made research a quantifiable strength of our department.

PLO#3 yielded both disappointing and promising results. When we began this assessment, we had a full-time faculty member teaching the nutrition course on a regular basis. With his

retirement, we have had to rely on adjunct teaching to sustain the course. We did this assessment in 2011 and saw relatively little change in student behavior, but the software used was not reliable. We attempted this assessment again in 2014, but the tools and ADA standards used were different and thus not comparable. We did adopt a new software program that provided some useful baseline data, however. Most students did meet the new recommended macronutrient values, but did not fall within acceptable levels for sugar consumption. This software will continue to be an effective assessment tool for this course. Also, recommendations that the Dining Commons adhere to ADA guidelines in food choices, reducing guesswork on the part of students regarding healthy eating choices, were made and implemented.

In addition, we chose to assess a GELO (General Education Learning Outcome) that would give us valuable information on how to adapt the curriculum in the required Fitness for Life course. The key question that has emerged over many years is how effective is the course in increasing exercise behaviors? Are the self-reporting logs adequate motivators? Could the use of current technology, such as heart rate monitors, provide more effective results? Three hundred and seven students were recruited for a study that compared the use of heart rate monitors to self-monitoring strategies such as fitness logs. The results were both confirming and informative. The study revealed that there was an overall 10% increase in cardiovascular endurance, therefore providing a corresponding decreased chance of chronic diseases. This finding gave us the assurance that the Fitness for Life program, serving over 300 students per year, is a valuable component of the general education program. Our study did not support the use of heart rate monitors for future classes, however. There was no statistical difference between the group that used the monitor and the group that used self-reporting tools.

Our alumni survey results were encouraging and positive. We surveyed alumni from 2006-2016 (ten year period) and received a 50% response rate. This time frame was selected because of the significant curricular changes that occurred in 2005. Ninety four % of respondents reported feeling well prepared for graduate school. This was gratifying, given the diverse graduate school pursuits identified in the survey. Ninety eight % indicated teaching in the Kinesiology Department to be strong (49%) or superior (49%). Eighty nine % reported securing their first professional job within the first year out of undergrad or graduate school. Along with this overwhelmingly positive input, there were suggestions for improvement that deserved our attention. Common themes centered on career preparation, more elective offerings and the need for a cadaver lab. Students wanted more internship and research experiences. As one will see when reading this report, the Kinesiology Department has made great strides in providing career exposure by adding a required internship or research experience for every major. We are searching for ways to increase career exposure throughout the major, including earlier target exposure. However, we have made no progress on the development of a cadaver lab, despite persistent pleas to the administration.

Two focus groups were conducted to ascertain student satisfaction with our elective offerings. Both groups desired new elective offerings or more consistent teaching of the ones in the KNS curriculum. With the large size of our major and the necessity of teaching multiple sections of required courses, this will likely continue to be a key question. Adding another position in our department seems unlikely. An Endowed Chair in Kinesiology would provide the addition of more regular and diverse offerings.

One of our greatest strengths as a department has been our off-campus programs. In the alumni survey, 82% rated their experience as “quite positive” and 14% “positive.” These rankings and comments about the programs can be viewed in Appendix 6B. We began by offering a Mayterm Europe program in 2001 and continued that program until 2011. We took over 150 students to Europe to study sport science. In the past 6-year cycle, we have focused on research opportunities in Bath, England. We have been a leader in providing international research opportunities, collaborating with doctoral students in exercise research. Our majors have proudly presented their findings to fellow students on campus and at conferences in California. During Mayterm of 2017, we reinstated our highly successful Europe Mayterm program and will look for ways to continue this program in the next 6-year cycle.

The most discouraging findings during this 6-year cycle of review have been the comparison of our overall facilities with other schools in our comparison group. Our facilities help to determine our curriculum offerings. For example, not being able to provide a cadaver experience for our majors is akin to the chemistry department not offering an organic chemistry lab. This is essential needed instruction for the thorough understanding of anatomy. George Fox, Occidental, Gordon, Pt. Loma, all comparable colleges in size, provide cadaver instruction to their majors. In addition, students are not able to fulfill requirements for some graduate schools in the therapies if they lack this prerequisite. Our major simply cannot continue with viability without a cadaver lab. Our office space is inadequate for the kind of collaboration we desire among our faculty and students. The main office space is inadequate and lacks a cohesive design. Classrooms are overcrowded and in need of remodeling. Although the gym was renovated, the lower building has continually been adapted for bigger classes. Those spaces are ill-conceived for good classroom interaction. In order for our major to thrive in the years to come, the kinesiology facilities need to be prioritized in the next building campaign.

While some of the obstacles described rely on administrative action, our responsibility as a department is to continue to strive toward providing the best education possible for our majors. In our next review cycle, we will target ways to provide more and varied elective options. We want to develop a consistent and sequential pedagogical approach for scholarly writing in our major courses. We will seek ways to integrate exposure to career opportunities early and often in our curriculum. We will use and continue to sharpen the research rubric with a larger pool of students. It is a tremendous privilege to serve our students and department in this way.

II. Findings

A. Student Learning

PLO #1: Research. *Select majors will be able to read and interpret research and/or apply the scientific method.*

Overall, the Kinesiology Department has made positive strides in increasing the number of research opportunities for our students, both by offering research classes in the fall and spring and by offering summer research opportunities on campus and in Bath, England. Prior to the 2014-2015 academic year, we had no good tools to assess this program learning outcome. During the spring of 2015, in conjunction with the research class, a grading rubric for student research was developed. The grading rubric can be found in Appendix 3A. The rubric was developed and used to grade the final lab reports in the exercise physiology and research classes as well as the research posters presented at the Student Research Symposium.

In order to determine the feasibility of the rubric, as well as the ability of students to write research papers at the end of the research class, the introduction and methods sections, based on the study done during the class, were written by the seven students who were enrolled in the spring 2015 class. First, the rubric was distributed and was found to be complete and useful to both the students and to the instructor. Second, the introduction to the research papers for most of the students met the highest requirements on the rubric. However, for several students, the introduction lacked enough background and had citation errors, suggesting that improvement was still needed in interpreting and presenting research. All students had good hypotheses and purposes, as this was one of the focuses of the research class. Third, the methods for most of the students were also complete, although there were several small errors or omissions. This was possibly due to poor note-taking during the research process and the failure to fully understand the importance of precision in writing the methods section. This will be an increased focus during the upcoming semester. The results of this initial rubric trial can be seen in Appendix 2A. The two posters presented in the spring semester of 2015 and the posters presented in the spring semester of 2016 were evaluated as well. Overall, the posters were laid out well and were easy to read. However, there was some information missing from both posters, possibly due to the space constraints of the poster format as well as having a larger focus on presenting the results section. The results of the rubric data can be seen in Appendix 2A.

Closing the Loop

From this process, we can see that our students need more work on the results and discussion sections of the posters, particularly with statistical analyses. These areas will receive greater attention during the upcoming semesters. We determined that the rubric was effective in assessing student work as well as giving students an effective tool to use when writing a research paper.

In the spring of 2017, we implemented the suggestions by the PRC regarding rater-reliability. The rubric was used by several professors to critique three papers written for the research class taught by Dr. Nwaokelemeh. A summary of the results can also be viewed in Appendix 2A. When looking at the rubrics for the papers, there appeared to be some variability in the overall

grading of the papers. However, the individual categories were consistent in that the best paper had the relative highest score and the worst paper had the relative lowest score. This suggests that the rubric has validity, but the reliability needs to be increased. In order to increase the reliability, we will make sure that the instructions or expectations for the paper in terms of citations and methods be included with the rubric when it is used by outside evaluators. Finally, we will consider reassessing this PLO during the next 6-year cycle, using a larger pool of students, as suggested by the PRC. This will enable us to gather data over several semesters and summers.

PLO #2: Exercise evaluation. *Majors will measure the body's ability to adapt to the stress of exercise.*

In 2015-2016, the Kinesiology Department collaboratively assessed PLO #2 in both KNS-105 Exercise Physiology and KNS-110 Cardiovascular Dynamics. In KNS-105, direct assessment methods were used. Standardized laboratory procedures for measuring oxygen consumption and protocol adherence for training were used to examine the effect of REHIT (Reduced Endurance High Intensity Interval Training) training on maximal oxygen consumption. KNS-105 students trained subjects for 10 weeks at 3 times per week. The indirect method of utilizing reflective questions was given at the end of the semester to solicit input from students on the value of the experience. Students were asked to describe what they learned about physiology of exercise, conducting research, and working with people. They were also asked if they would recommend this experience for future classes. In addition, a 7-part question was embedded in the final exam. Discussion regarding the project was ongoing during the semester during class time and labs, reinforcing laboratory techniques, data understanding and research methods. Finally, students conducted and interpreted four maximal oxygen consumption tests, which are used on the job (real world assessment) when determining exercise prescription. In KNS-110 Cardiovascular Dynamics, assessment of the exercise stress test was embedded in a practical exam. The exercise stress test is a common test done in the medical environment to detect electrical abnormalities of the heart with excellent validity, reliability and objectivity. The KNS-105 exam questions and protocol for conducting and interpreting the maximal oxygen consumption test and the KNS-110 grading rubric can be seen in Appendix 3B.

In KNS-105, 74.5% of all students scored “*well developed*” or “*somewhat developed*” when compiling the cumulative results of all seven assessment questions. This met the minimum percentage of our benchmark value of 75%. However, questions 1-4 averaged 63.3%, which was below the benchmark.. A secondary question that emerged was “is it possible to embed a research project in class involving equal contributions from every student?” This was assessed indirectly, and 95% of the students recommended that this experience to be continued in future classes. In KNS-110, out of 15 students, the average grade on the exercise stress test was a 93% with scores ranging from 85.5 to 97.5. All 15 students met the benchmark established. A summary chart of KNS-105 exam questions, KNS-105 student responses and KNS-110 grading results can be viewed in Appendix 2B.

This assessment required collaboration and communication between students. In KNS-105, all 30 students took part in this study. Fifteen students were recruited from the GE class PEA-032

Fitness for Life to participate as subjects. This was a unique opportunity for collaboration between upper class kinesiology students and lower division Fitness for Life students. All maximal tests were administered by students and supervised by the professor.

Closing the Loop

Although this was a time-intensive embedded project, the end result of this assessment was that the process was meaningful and educational to our students. What we learned was to start the process at the onset of the semester and thus have time to complete the analysis of all data. Students in particular appreciated the real world experience that came from this lab experience in both classes. Quote from student: *“In the research sphere, I learned how precision and attention to detail can lead to successful predictions of health and exercise, ultimately improving data. It was particularly enjoyable to see how what I learned in class applies to the real-world experience of exercise and training.”* The PRC suggestion to involve other professors in a future assessment for rater-reliability will be implemented.

PLO #3: Dietary analysis. *Majors will modify their diets to fall with the ADA (Academy of Nutrition and Dietetics) guidelines for healthy eating.*

This PLO was first assessed in 2011-2012 with a follow-up in 2014-2015. Analysis methodology that was current in 2010-2011 was utilized to perform pre/post nutrition analysis in the KNS/BIO-040 course. The American Dietetic Association (ADA) has established standards for healthy eating practices. The categories are based on percent of Calories and are established as follows: Carbohydrates (45 – 55%), Protein (12 – 15%) and Fats (30% or less). In addition, one should demonstrate day-to-day caloric consumption to be within 10% of each other. It is also recognized that students eat differently during the week than they do on weekends.

In Fall 2010, 36 students were evaluated and in Spring 2011, 41 students were evaluated for a total of 77 students. Early in the semester students performed a computerized nutrition analysis (Food Processor) for one weekday’s eating and one weekend day of eating. Students were asked not to change their eating patterns in this initial effort. Following the lecture series on eating within the ADA guidelines, student replicated the initial two day analysis effort, but with instructions to eat in obedience with the ADA guidelines that were taught.

For both the pre and post analysis, students received from 3 points to 0 points in nine categories: % Carbohydrates, % Protein, % Sugar, and % Fat both for their weekday effort and their weekend effort and whether their total Calories were within 10% of each other (weekday Kcals vs weekend Kcals). If the measured value was within 10% of the ADA guidelines a student received three points. If the measured value was within 11-20% of the ADA guidelines a student received two points and if within 21-30% they received one point. The maximum score a student could receive was 27 points (nine fields of evaluation, three points each).

Data for both classes and the two classes combined are provided in Appendix 3C. The initial average score for the Fall 2010 class was 20.47 (S.D. = +/- 4.00), which was 76% of the established ideal score of 27. The initial average score for the Spring 2011 class was 15.95 (S.D. = +/- 3.84), only 59% of the established ideal score. Following the lectures, the fall 2010 class

scored a 17.78 (S.D. = +/- 4.94) and the post lecture scores for the spring 2011 class was 17.71 (S.D. = +/- 4.52). When the two classes were combined, the pre/post scores were 16.56 (S.D. = +/- 3.97) and 17.74 (S.D. = +/- 4.72) respectively. The combined post lecture score of 17.74 was 66% of the ideal score of 27.

The standard established for this PLO was for 80% of the students to fall within the standards established by the ADA. Although students did improve their scores, none of the 77 students demonstrated complete compliance to the established ADA standards. The highest score of all the students surveyed was 26, with only two students scoring 25. Overall, students improved their scores by 7.4% (from 16.56 to 17.74). Of particular note is the large standard deviations noted in all measurable data points. Even though students were instructed to eat carefully and record all eating as accurately as possible, the project was fraught with multiple intervals where errors in data recording could have occurred. Students had to estimate food and drink volumes, as well as estimate the composition of all foods consumed. Most of the eating was done in the Dining Commons for the weekday analysis, but the location of eating on the weekend effort varied considerably.

The department decided to reassess this PLO with new software capabilities, both to improve the accuracy of the findings and to gauge the effectiveness of the interventions used during the semester. The 2015 follow-up assessment was conducted to determine if students were meeting their target nutrition goals given the above changes, as well as improved instruction in the general nutrition class. To assess this outcome, we used an updated software program to do pre/post-course nutrition analysis. A screen shot of this software program can be viewed in Appendix 3C. Students were asked to record their nutritional intake for three consecutive days. The current software does take into account student activity levels and bioavailability of calories/nutrients. Many of the students compete in weekend sport competitions and need to have a moderate to significant caloric variation to match their needs. Our benchmark established was that 80% of students would fall within the standards established by the Academy of Nutrition and Dietetics.

When applying updated 2015 Academy of Nutrition and Dietetics standards, the 2015 values show that students did meet the standard for macronutrient values (87% pre-lecture and 86% post-lecture). The new 2015 recommendations for sugar and ingested calories were used. We found that 14% (standard deviation of .371) of students fell within the recommendations for sugars pre-lecture and 17% (standard deviation of .393) post-lecture. Seven percent of students ingested a greater number of calories than was recommended. Results from the 2015 dietary assessment can be found in Appendix 2C.

Closing the loop

Several changes have been made to improve student learning. The post-lecture analysis demonstrated that sugar intake, as a percentage of total caloric consumption, was still extremely high. More emphasis on learning about “hidden sugars” and making wise nutritional choices were highlighted during 2015-2016 and subsequent years. The importance of meeting their caloric recommendations was highlighted in 2015/2016 and in subsequent courses as well. We are satisfied with the accuracy of the upgraded software program used. Better instruction about student reporting will increase the reliability and validity of the data and will be implemented in

future classes. Future assessments will be done with the same software program, with data stored on Live Text as suggested by the PRC. Although the 2011 data was considered unreliable in many ways with poor software, one area that was addressed was the recommendation that the Dining Commons adhere to ADA guidelines in food choices, reducing guesswork on the part of students regarding healthy eating choices. The Dining Commons has now developed a Student Advisory Board to take concerns to the management regarding the availability of healthy foods and the placement of Nutritional Panels describing the ingredients and macronutrients of food choices.

GELO

Students will write and successfully implement an appropriate fitness program based on the training principles of frequency, intensity, and duration.

All students taking Fitness for Life are required to write an appropriate fitness program based on the training principles of frequency, intensity, and duration. We had 100% participation in this requirement. What is more difficult to measure is how successfully they implemented an appropriate fitness program based on the training principles of frequency, intensity, and duration. Therefore, a study was conducted to determine the successful implementation of the fitness program, with a particular targeted focus on intensity.

Westmont College students who were enrolled in the Fitness for Life class (FFL) (n=307, 119 male, 184 female) were recruited for the study. Of the 307 students, 109 of the students were part of the control group that participated in the class in the spring of 2015. The remaining 194 participated in the Heart rate monitor group in the fall of 2015.

The purpose of this study was to compare the health benefit gains between using a self-report nine-week fitness plan (log card) and a nine-week online heart rate monitoring tool to monitor and record exercise. This study utilized three different exercise paradigms: a 12-minute run/walk, a push-up test, and a curl-up test. It was hypothesized that the use of the Polar heart rate monitor and the associated online exercise monitoring would increase the exercise performance outcomes.

Following the first set of exercise tests, each participant was asked to perform and record four exercise sessions per week for nine weeks. Each participant was asked to do a minimum of 3 cardiovascular workouts and one muscular strength workout per week. Both groups were asked to record all workouts on a log card which was checked by the instructor every 1-2 weeks. The heart rate monitor group (HRM) was given an additional monitoring tool. The software associated with the heart rate monitors was able to upload the information to an online coaching website (Polar Coach) which enabled the instructor to observe and comment on each individual workout. Further, the Polar heart rate monitor allowed the participant to determine and modulate workout intensity based on previous results as well as recommended intensity norms.

All statistics were performed using Excel/Statplus for Mac. To evaluate the effectiveness of the class in increasing physical fitness outcomes, paired t-tests were performed comparing the pre- and post-exercise 12-minute run/walk, push-up test, and curl-up test. In order to examine whether the heart rate monitor was effective in causing greater increases in fitness than the

control group, equal variance t-tests were used to examine differences between groups. All data were presented as mean \pm standard deviation, with significance set at an $\alpha < 0.05$.

Results: For the 12-minute run/walk test, there was a significant increase in distance run for all groups, whether they took the class for credit or pass/fail. However, there was no difference in increase between the control and HRM groups for the distance run ($p < 0.05$). There was also a significant increase in the number of push-ups and curl-ups performed for all groups following the training period ($p < 0.05$) though there was not a difference between the control and HRM groups ($p > 0.05$). Charts of all results can be seen in Appendix 2D.

Discussion: The initial purpose of the study was to determine if heart rate monitors improved exercise outcomes more than just monitoring log cards. Unfortunately, heart rate monitors did not increase exercise outcomes more than log cards. However, we did determine that the Fitness for Life class did improve all measured exercise outcomes.

One of the big questions in our department is whether the Fitness for Life program improves exercise outcomes. This study demonstrated that health outcomes were greatly improved over the course of the class. One of the primary health outcomes that is associated with longevity and reduced mortality is cardiovascular endurance. This was measured by the 12-minute run/walk test during our study. This study determined that there was a 10% increase in cardiovascular endurance, suggesting that there is a decreased chance of mortality, a decreased risk of coronary heart disease, and an increased protection from non-cardiac diseases such as non-insulin-dependent (Type II) diabetes, hypertension, and several other diseases. This data suggests that the FFL class is effective at teaching and implementing basic exercise training principles. Therefore, the basic requirements of the class will not be changed.

One other component of this study is that it allowed us to determine a benchmark level for cardiovascular fitness, based on the 50% fitness category as defined by the American College of Sports Medicine. The students in our two semesters on average exceeded this benchmark as males were in the 75th percentile and women were in the 60th percentile.

Closing the Loop

Even though heart rate monitors were not effective in increasing fitness outcomes over log cards alone and will no longer be used in class, we will continue to innovate within the Fitness for Life class in order to ensure increased knowledge and exercise outcomes in the students. In the future, we hope to try to utilize a psycho-social motivational approach through assigning workout partners to increase motivation and by trying to measure baseline activity levels through the use of pedometers. Overall, the kinesiology department is currently satisfied with the current Physical Education GELO and overall results of the class.

B. Alumni Reflections

In the fall of 2017, we implemented a kinesiology alumni survey using the institutional alumni template provided and Survey Monkey. We contacted graduates from 2006-2016 (ten years) totaling 357 requests. We received 180 responses or a 50.4 response rate. The gender breakdown was as follows: 65.6 females and 34.4 males, which is generally consistent with the institutional

gender breakdown during that same time period. A template of the survey can be found in Appendix 6A. We spent a day as a faculty in a retreat analyzing the results of the survey. This was helpful in determining which aspects of our program have been successful, as well as areas that could be strengthened, including curriculum.

It was gratifying to read the responses and comments about their experience as kinesiology majors. Ninety eight percent indicated teaching in the Kinesiology Department to be strong (49%) or superior (49%). We discussed this finding in length. Although our facilities barely meet our needs and our student/teacher ratio is higher than most departments, the most often cited positive aspect of our program is the teaching and personal interaction with professors. Many comments centered on the interactive pedagogy, the passion displayed by professors and our availability to students outside of class. Students most often commented on the relationships built with faculty, especially their approachability. Sample response to the question regarding strengths in our program: *The amazing professors! They are so very talented and have such a passion for teaching students. I have never forgotten my conversations and classes with each of them. They have truly made a personal impact on my life.* We receive this data with true humility and gratitude. It inspires us to approach each class with enthusiasm and excellent preparation. We will be searching for two positions in the upcoming year. These results press upon us the need to, first of all, hire excellent teachers. This is the best approach for securing a meaningful future for our department and students. The results of the survey can be found in Appendix 6B.

Alumni were asked to respond to seven areas of transferable disciplinary skills and knowledge in the kinesiology discipline: written communication, applicable skills in the workplace or lab setting, ability to work productively in groups, ability to develop rewarding interpersonal relationships, leadership, oral communication and the ability to correctly use APA style in scholarly and professional/technical writing. In all areas, with the exception of the use of APA style, over 50% of students reported very high importance and satisfaction. Seventy nine percent identified the category of “very satisfied” with their ability to work in group settings. This is a highly desirable skill in the allied health fields. The one exception, use of APA style, will be a targeted program learning outcome (PLO) for the next 6-year cycle. The data on transferable skills can be found in Appendix 6B.

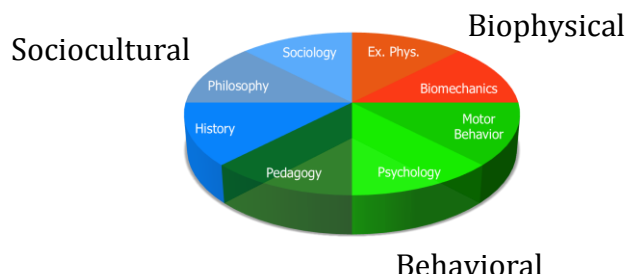
General satisfaction with the preparation they received for life after Westmont as kinesiology majors was high. Ninety-four percent of respondents reported feeling well prepared for graduate school (71% excellent; 23% good). This was satisfying to our faculty, given the diverse graduate school pursuits identified in the survey. Throughout the undergraduate experience, students are exposed to a variety of classes that influence and broaden their ideas of jobs and careers to pursue. Eighty-nine percent reported securing their first professional job within the first year out from undergrad or graduate school. However, areas of improvement were also cited. The most common cited suggestions for improvement centered on career preparation and the need for a cadaver lab. Alums wish that they had more internships and research opportunities. They wished that more and varied options related to kinesiology had been addressed throughout the curriculum. We had a lengthy discussion about how to improve in these areas. Our foundations and senior capstone classes could be strengthened to include other options outside of the allied health fields. Other elective classes could expose students to career options they might not have considered. One encouraging note is that we made significant changes to our curriculum in 2014,

requiring either an internship or research component. No doubt the next alumni survey will reflect these changes. The need for a cadaver lab became abundantly clear as our department reviewed the results. Without this lab, students are not prepared adequately for graduate school programs, particularly in the field of occupational therapy. This concern will be revisited in the sections on curriculum review and facilities. Data on post-graduation experiences and suggestions for improvement on career preparation can be found in Appendix 6B.

The concerns raised in this survey help us to address one of our key questions: How well is our curriculum serving our students?

C. Curriculum Review

The kinesiology curriculum has philosophically been based on a liberal arts approach to the discipline. Imagine a wheel with spokes, each one representing the subdisciplines most often agreed upon when developing a kinesiology curriculum. Some institutions have chosen to become more specialized, but our department has always felt that a focus on the scholarly subdisciplines provides an appropriate curriculum that demonstrates both breadth and depth. This broad-based exposure reinforces the liberal arts framework of the college. Those scholarly subdisciplines (spokes) include the **biophysical**: biomechanics, exercise physiology with prerequisite courses in anatomy and physiology; **behavioral**: psychology of movement, pedagogy, and motor behavior; and **sociocultural**: sociology of movement, philosophy, history (Hoffman, 2009).



In addition, a strong kinesiology curriculum includes disciplinary knowledge and skills in applied fields. Our department has chosen to expand the breadth of knowledge by including these additional subject areas as part of the core curriculum: disability, exposing students to diverse populations; research; and internships. In addition, our elective offerings provide additional exposure to areas that might become areas of interest for our students, such as health (with an emphasis on both public and global health), gerontology, pain science, strength and conditioning, athletic training and cardiac rehabilitation. As we examine our curriculum, we are satisfied that we offer courses in each of these important targeted areas. The sequencing of these courses seems appropriate and the range of offerings each year is adequate for completing the requirements in 4 years or less. Only 1.85% of respondents on the alumni survey indicated that

completing requirements for graduation took longer than 4 years. These alumni survey results can be viewed in Appendix 6B.

Eighty-seven % of alumni survey respondents indicated an above average or stronger rating for preparation within our major relative to their peers. Seventy-one % indicated they received excellent preparation for an advanced degree. When asked about the best aspects of our program, they cited our strong curriculum as second only to the quality of professors in our department. The well-rounded curriculum was often cited. Sample response from question asking best aspects of the Kinesiology program: *“The combination of high-caliber (and high-expectation) science classes (Anatomy, Exercise Physiology, Biomechanics, etc.) with various sociological coursework interspersed (Psychology and Sociology of Movement, Food Systems, Special Populations). The department is very well-rounded.”* A summary of alumni comments can be viewed in Appendix 6B.

When asked in the alumni survey what improvements were needed in the curriculum, common themes were as follows: more internships and research opportunities, more elective offerings that emphasize potential career paths, and more labs, especially a human cadaver lab. A summary of improvement suggestions can be seen in Appendix 6B. We have made considerable strides in providing research and internship opportunities. This became a requirement in our major in 2014. We would expect these additional courses to be cited as strengths in future surveys. Elective offerings have decreased in the past five years because of the rapid growth of the major. Professors have needed to teach multiple sections of core courses to meet the demand. As our numbers stabilize, we hope that we will be able to add additional elective course offerings. We do want to keep in mind this goal of providing more diverse elective courses as we consider hiring needs in the next few years.

In addition, our department desires to support the college Global Awareness and Diversity ILO. We recognize that not all of our students are interested in pursuing the allied health fields of therapy and medicine. We are appreciative of the college’s decision in 2015 to allow us to combine several adjunct positions into a fulltime tenure track position in global health. With the arrival of Dr. Cynthia Toms to our staff in 2016, we are now able to pursue coursework and mentoring in global health, including oversight of the Global Health in Uganda semester program and the proposed minor in global health. Course content on gender, ethnicity and socioeconomic influences needs to be more thoughtfully and consistently woven into our curriculum. Therefore, we proposed an increase in units in our KNS-157 course from 3-4 units to allow for these additions. Senate approved this in February 2017 and it was implemented in the 2016-2017 academic year. The syllabus for this expanded KNS-157 course can be found in Appendix 17A.

To determine if our curriculum is comparable to curricula of similar departments at relevant peer institutions, we conducted a survey of 5 colleges with similar programs: Taylor, George Fox, Occidental, Gordon and Pt. Loma. A look at the core and elective requirements from each of the targeted colleges further reinforces the confidence we have in our present curriculum. As stated earlier, it prepares our students well for graduate school and career pursuits. Data from the five selected comparison schools can be found in Appendix 7. However, the offering of a cadaver lab remains a significant gap in our curriculum. Anatomy with cadaver is becoming a prerequisite

requirement in more and more occupational therapy schools. The inability to meet this need is a grave disservice to our students. George Fox, Occidental, Gordon, Pt. Loma all provide cadaver instruction to their majors.

Closing the loop

We would like to make the following change in our curriculum during the next 6-year cycle and include this change as one of key questions. We want to increase our major's ability to write scientific/scholarly/technical papers using proper source guidelines. This needs to be taught early in the curriculum and reinforced throughout. Twenty-six % of students cited confidence in their ability to do so in the alumni survey.

We need to continue to work with the Office of Advancement and the Provost's office to pursue funding for a cadaver lab.

We conducted two senior focus groups: Group A consisted of students who intend to pursue advanced degrees. Group B students will seek employment directly after college. Both groups highlighted the need for a broader and more diverse selection of elective offerings to help expose students to more career potentials. We have been having ongoing department discussions on the need to change our elective offering requirement in our curriculum to require more kinesiology-specific electives and have been in discussion with Academic Senate on how to accomplish this.

D. Program sustainability and/or Adaptability

As a department, we have chosen to address both of these topics. As depicted below, we have enjoyed consistent growth in our major during the past six years. There are a number of reasons why this has occurred, and many would point toward the increased demand for professionals in the health care related fields. This is largely due to the expanding demographics of the "baby boomer" generation, leading to high demand of allied health care professionals in physical and occupational therapy and the medical role of physician assistant, as well as an increased knowledge of the effectiveness of exercise as medicine. While this has been a driving force behind our increased numbers in the major, we don't want to become complacent. For this reason, we want to continually look for ways to adapt by exposing our students to new career fields.

The Program Demographics

Our major has experienced significant growth since 2012. In 2014, 2015 and 2016, we had the highest number of graduates of any major at Westmont. Since 2012, the average graduating class in our major has been 45. From 2012-2017, the kinesiology students were on average 41.5% male and 58.5% female with a minority/ethnic/racial representation of 36%. We have five fulltime faculty positions, one of which is currently a shared position. Out of these individuals, we have three males and three females, one of which represents a racial/ethnic minority. This gender and ethnic data can be viewed in Appendices 9 and 10. This increase in the number of majors, in particular, has put considerable strain on our staff. Adding additional sections of courses each year and increasing the number of students in our courses have been necessary accommodations. Advising loads have steadily increased for most kinesiology faculty. These

required changes have increasingly come at a cost, decreasing preparation and research time, as well as daily contact time with students, and elective course offerings. For example, in our two student focus groups, the most consistent comment made was disappointment over the range of electives offered. Information about instructional and advising loads can be found in Appendix 8.

Program Service to Westmont and Society

Each year, a number of students from the Biology Department take kinesiology courses in anatomy, nutrition and food systems. A number of our students choose to do a minor in Spanish, causing an increase in numbers in the upper division Spanish courses and the Westmont in Mexico program. Students in our strength and conditioning course provide personal training programs to faculty and staff as part of their learning goals. The Global Health Semester in Uganda, a program available to all students, is a partnership program between Westmont College and the Council for Christian Colleges and Universities that provides a unique opportunity to pursue coursework and internships in Africa. The department chair oversees the physical education program. Over 50 physical activity courses per year are provided. The Fitness for Life program, required of all students, contributes to the overall wellness of the student body.

Almost all of our students pursue careers in the “helping professions,” which by definition means the nurturing or growth of a “person's physical, psychological, intellectual, emotional or spiritual well-being” (www.yourdictionary.com/helping-profession). Our graduates provide services to premature infants, children, people with disabilities, athletes, adults with acute and chronic diseases, underserved populations here and abroad and the variety of needs particular to older adults. The professions of physical and occupational therapy have more job opportunities than available graduates from master and doctoral level programs. According to the Bureau of Labor Statistics, expected job growth between 2014-2024 is strong for the following professions: Nurse Practitioner 35%, PT 34%, OT 27% and PA 30% <https://www.bls.gov/>

Closing the loop

In summary, as long as our numbers remain constant and do not increase, we can maintain our current curriculum and institutional service. However, we do recognize the need to expose our students to other career possibilities outside of the therapies and medicine. We have had numerous conversations this spring about how to best accomplish this. One way is to increase our elective offerings. Each offering provides a window for potential interest in a new aspect of kinesiology. We would like each student to take a minimum of three elective offerings and have been working with Senate on ways to change our curriculum to accomplish this. Another way to expose students to more career offerings is to increase targeted exposure in two courses: KNS 072 Foundations and KNS 190 Internships and to integrate career options in other required and elective classes when appropriate.

E. Additional Analysis

1. Student Focus groups

Student Survey

We conducted two senior focus groups, graciously led by Lesa Stern.

Group A: (7) Students planning to pursue advanced degrees. Group B (5) Students seeking employment directly after college. The full report submitted by Dr. Lesa Stern can be found in Appendix 11. Both groups were asked the following four questions:

1. How has the current kinesiology curriculum prepared you for your chosen interest?
2. What changes would you suggest in the elective offerings?
3. How has your faith been impacted by courses in the KNS Department? Please give examples.
4. What other comments would you like to make about the KNS major?

Full responses from both groups are provided in Appendix 11.

Department review of results

1. How has the current kinesiology curriculum prepared you for your chosen interest?

Summary of student comments:

Group A: Comfortable with the breadth of the program, but desired more depth in science offerings; unanimous about the need for a cadaver lab;

Group B: Foundations helpful for career preparation; would like to see more psych/social integration; wanted more hands on courses

Discussion: Our major is intentionally designed to provide a broad exposure to the sub-disciplines of kinesiology. We need to do a better job educating students about this philosophical approach and give a rationale for why “hands on” courses are professional, not discipline-specific courses and therefore not appropriate for our curriculum. A cadaver lab would provide more depth, but students didn’t realize that other elective offerings such as cardiovascular dynamics and pain neuroscience are actually advanced courses. This is the last generation of students under our old curriculum, which did not require an internship.

Closing the loop

We have increased our psycho/social exposure in KNS-157 Psychology/Sociology of Movement beginning Fall’17. More career information will be included earlier in the undergraduate curriculum in KNS-190 Internship, which is now required of all majors (and is often taken before spring of the senior year). We have inserted information on the philosophical difference between the discipline of kinesiology and professional preparation in our foundations course.

2. What changes would you suggest in the elective offerings?

Group A: More depth in elective course offerings; offer the electives that are already listed; count more non-departmental science offerings as elective credit

Group B: Offer electives that are already listed but not currently taught; offer more “hands on” courses.

Discussion: We are in agreement that we need to offer the electives already listed in our curriculum, as well as more and diverse elective offerings. Alumni echoed this sentiment as well. To do so would require additional faculty added to our department, which is highly

unlikely. If our numbers decrease, even slightly, we can return to a reduction in yearly offerings that would allow for more load designation toward elective offerings.

Closing the loop

Next year, we will begin discussing the option of hiring adjunct help with some lab classes to free up faculty loads to accommodate more elective offerings. This will require a lengthy department discussion about teaching priorities.

3. How has your faith been impacted by courses in the KNS Department? Please give examples.

Group A and B:

Both groups had similar responses. Students cited that their interactions with specific faculty members in our department provided deep and meaningful faith encounters and modeling. They would like to see more seamless faith integration in classes. Two classes were consistently cited as being models of faith integration: anatomy and special populations.

Discussion

We had a lengthy and provocative discussion on the student responses to this question. Faith integration is important to the entire KNS faculty and the responses were discouraging. Some expressed concern that students often do not recognize faith interaction done well and in a seamless manner unless called to their attention. Newer faculty need time to learn how to do this and it is the responsibility of older, more experienced faculty to model this. We want to be known for our faith integration and will take seriously the comments made by students. This discussion reminded us that ultimately our personal habits of Bible study, prayer and church attendance are the foundations of faith integration.

Closing the loop

We began the practice this year of beginning each department meeting with an example of faith/integration practices and will continue next year. This was deemed as an effective way to model expressions of our faith in the classroom.

We are not required on the current course evaluation forms to ask for feedback on faith integration. We would like to include a supplement evaluation on faith/integration that will give us better feedback on this important area.

4. What other comments would you like to make about the KNS major?

The responses were varied with no real pattern in both groups and several of the issues expressed have already been addressed in other sections of the report, such as “hands on” classes. Overall, students were pleased with the major. This sentiment is reinforced in a very tangible way at the annual senior breakfast, where students have a chance to share about their experiences as a kinesiology major. It is the highlight of the year for our kinesiology faculty!

2. Lab facilities

In an effort to see how the laboratory space and equipment for the Kinesiology Department compared with other colleges and universities (i.e. CCCU or comparable liberal arts colleges), a survey was emailed to 18 institutions in November of 2016. Seven colleges/universities responded. When doing a comparison of the physical lab space(s), we ranked lowest of the responding colleges with between half and two-thirds the total lab square footage. In addition, this survey demonstrated the glaring lack of a Cadaver Lab. Laboratory equipment comparison showed that our Human Performance Lab has the basic equipment comparable to like institutions, but contained approximately one-half of the quantity of specific pieces of equipment. A summary of the data from the seven schools can be seen in Appendix 12.

3. Vocation/career/internships

Both the Alumni Survey and student focus groups identified the need to increase vocational and career exposure in the Kinesiology major. Twenty-eight percent of alumni specifically listed better preparation for post-graduate careers as an area of needed improvement. The need for earlier and broader exposure to careers was a consistent theme in the student focus groups. We have had a long history of collaboration with the Office of Career Development and Calling, utilizing their resources yearly in our senior capstone course. In the introductory course in our major, Foundations of Kinesiology, approximately one fifth of the curriculum is focused on vocation and career development, beginning with instruction on the concept of vocation and reinforced with site visits of career possibilities after graduation. The syllabus for KNS-072 Foundations can be found in Appendix 17B. We realize that these efforts, while effective, are not enough for today's student. As a department, we have been discussing ways to integrate vocational focus throughout the curriculum. The steps we took in 2014 to require an internship/research class have begun to better meet this need. For example, in the 2016-2017 academic year, we had 21 students take KNS-190 Internship and 10 students in KNS- 198 Research. During the summer of 2017, we had 9 students in the KNS-190 Internship class. We have adapted a supervisor evaluation rubric from other departments to assess student performance. This rubric has allowed us to give better direct feedback to student interns. This rubric can be seen in Appendix 13A. Our students are performing at a high level. The average overall performance score for the 2016-17 year is 9.12 (on a 1-10 scale). The results of the 2016-17 year can be viewed in Appendix 13B.

Closing the loop

We take seriously the need to provide career information earlier in the major. We wanted strategies for the following questions:

- 1) How can we expand our network of internship contacts for our major?
 - a. The Kinesiology Department met in April, 2017 to discuss ways of mapping known existing contacts in the Santa Barbara community
 - i. Dr. Toms led us in asset mapping; a technique used in community development, but can be adapted to any context. We focused on mapping our SB institutional and individual access levels (partnership-

potential/referral/educational). A google document was created with the following categories: training and performance, sport, medical, rehabilitation, disabilities, older population, community and public health, nutrition, and education. The template used for asset mapping can be viewed in Appendix 13C.

- ii. Collectively, we were able to list 56 agencies in Santa Barbara that could potentially be internship sites for our majors. The data collected using the asset mapping Google document can be seen in Appendix 13D.
 - iii. This document will be updated regularly in our department meetings as we secure new contacts.
- b. How can we provide earlier exposure to career opportunities in our major?
- i. We are in the process of shifting much of the career exposure that we typically cover in the KNS-195 Senior Capstone class to the KNS-190 Internship class. This is now possible because of the internship/research requirement in our major.
 - ii. A question we will need to resolve in the next six-year cycle is how to insure that students who elect to take the research class instead of the internship class receive the same valuable career input. Although this group of students is small, it is a dilemma that will need to be solved.

4. Collaboration with the departmental library Liaison:

In the last six years the liaison for the Kinesiology Department has changed three times. For the first year (2011/12) Claudia Scott was liaison. When Claudia retired, Molly Riley took over this responsibility until her departure in 2015/16. After Molly's departure Mary Logue took over in 2016/17 with the assistance of Jana Mullen for instruction for the department. While this amount of change is not preferred, it was unavoidable.

Instruction:

The library has consistently partnered with the department in the last six years to provide instruction to the students in the Foundations class. The library has expressed gratitude for this chance to work with kinesiology students and hopes in the future to expand work with the department to include assistance in other classes as well. Information on library holdings, resources and class instruction can be found in Appendix 14.

III. Looking forward: Changes and Questions

A healthy department begins with a clear mission. Our department took a careful look at the mission statement that has been the foundation of our efforts for the last six years:

The Westmont College Kinesiology (KNS) Department celebrates the whole person by focusing on an integrated, scientific approach to the study of the ability of the human mind and body to create and understand movement. Embedded within this mission statement is the understanding that the mind, body and spirit are inseparable. The health of the body impacts our intellectual abilities and our preparedness to worship our Creator. Westmont College has entrusted our

department with the responsibility and privilege to assist students in their personal and pre-professional journey to discover, celebrate, execute and communicate these interactions.

Our new role as a member of the Natural and Behavior Sciences firmly establishes movement science at the core of our discipline. At the same time, we would like to affirm the important, but sometimes hard to define aesthetic quality of movement as well. Together we have developed a new, more concise statement that reaffirms both art and science as philosophical roots to this discipline.

The Westmont College Kinesiology (KNS) Department celebrates the whole person by examining human movement through the lens of science and art. We seek to develop devout servants of our Creator who are thoughtful scholars who understand and can effectively communicate the inseparable nature of the mind, body and spirit as it relates to movement in all stages of life.

In the past few years, we have addressed a number of changes that were viewed by us (and confirmed in the alumni survey) as weaknesses in our curriculum. First and foremost, we realized the need for an internship requirement. We simply could not prepare students for the next professional step without this essential exposure. As well, many of the graduate programs that our students pursue require internships for admission. With an average graduating class of 48 students per year, this has been a daunting task. To accommodate these high numbers, we offer both a fall and spring on-campus internship course. In addition, we have developed a summer on-line course that allows students the option of completing an internship in their hometown. The syllabus for KNS-190 Summer Internship Course can be found in Appendix 17C.

As full contributing members to the Natural and Behavioral Sciences division, we realize the importance of providing research opportunities for students. Prior to this current 6 year review cycle, research opportunities for students with professors were rare. This has perhaps been the most dramatic change in our department. What we have accomplished in the past 6 years in this regard is astounding! Selected students have been working with Dr. Tim VanHaitsma on fatigue research in the summers for the past three years. Dr. Gregg Afman has taken two groups of students to the University of Bath, England to engage in international research in exercise physiology. Dr. Ogechi Nwaokemele has involved students in local public health research. Dr. Cynthia Toms, along with her students, has partnered with the Food Bank of Santa Barbara to research food security. These research projects have been featured in the yearly research symposiums, as well as regional conferences.

We are aware of other weaknesses that we have not been able to address during this 6-year review cycle. Despite a clear strategy to incorporate writing skills in the curriculum, we find some students in their senior year ill-equipped to write scholarly papers. We have come to realize that this will require consistent reinforcement of excellent form and content in all of our courses, using the foundations course as a starting point and building on scholarly writing skills in upper division courses.

In both the alumni survey and the student focus groups, comments emerged about the need to strengthen the psycho-social component of our major. As a result, we have implemented a 1-unit increase in our KNS-157 Psychology and Sociology of Movement required course in our major.

Dr. Cynthia Toms is now co-teaching this course, bringing needed expertise in the social sciences.

In addition, we have struggled to provide a full complement of elective courses for our students. This has been hampered by the necessity to offer multiple sections of required courses. We need to explore a number of possible solutions, including the offering of fewer and larger sections of courses, and perhaps putting a cap on our number of majors. Both of these options have major ramifications impacting the quality of student experiences and overall college enrollment. Finally, we hope to one day have a Kinesiology Endowed Chair, with the potential of attracting a top researcher and teacher to our department, as well as more course offerings.

As we look to the future and dream about a Kinesiology Department operating at the highest levels, our first priority must be facilities. We all realize that we have been playing “above our heads.” Our facilities do not match the quality of our courses or research pursuits. We will be looking to fill two positions this fall, but cannot accommodate their potential research interests in our inadequate lab or provide adequate office space. Two of our fulltime professors share an office space. As noted earlier, our students are gaining admission to the finest graduate programs in the country, but we are hearing reports that they are limited in where they can apply because they cannot complete the often-required cadaver lab in our department. Despite numerous attempts on our parts to establish a cadaver lab at Westmont, we have made no progress in the past six years. As stated before, we are one of the largest majors on campus. Without proper facilities, we will no doubt lose students to programs elsewhere that can provide what students need. A second story on the current Murchison classroom complex has been in the master plan for years. This would go a long way toward providing much needed classroom and lab space, as well as a central space for all professors and students that would enhance collaborative opportunities.

In conclusion, we have put into place strategies for a bright future for our department. We have sharpened our mission, cemented our role and responsibilities in the Natural and Behavioral Sciences, and added essential preparation courses such as internship and research to help prepare students for their future pursuits. We have identified areas of weaknesses in written communication and elective offerings, which will be addressed in the next review cycle. We will explore ways to continue to offer high quality off-campus experiences for our majors. Finally, we know that all of this can only be sustainable if the college will support quality facilities to match our present program.