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A Comparison of Instructor Professional Development Hours and Student Academic Achievement

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**A COMPARISON OF INSTRUCTOR PROFESSIONAL DEVELOPMENT
HOURS AND STUDENT ACADEMIC ACHIEVEMENT**

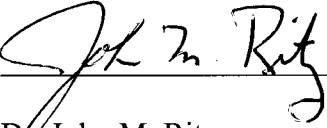
A RESEARCH PROJECT PRESENTED TO THE DEPARTMENT OF OCCUPATIONAL
AND TECHNICAL STUDIES OLD DOMINION UNIVERSITY

IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE
MASTER OF SCIENCE IN OCCUPATIONAL
AND TECHNICAL STUDIES

BY
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APPROVAL PAGE

This research paper was prepared by Thomas L. Langdon under the direction of Dr. John M. Ritz in OTED 636, Problems in Education. It was submitted as partial fulfillment of the requirements for the degree of Master of Science in Occupational and Technical Studies.

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Date

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CHAPTER I

INTRODUCTION

Professional development (PD) has become, according to some experts, the individuals primary responsibility. A survey of Human Resource Development Directors indicated they consider PD to be their least important function (Johansen & Rouda, 1996). This is quite a surprise when considering the positive impact that self-improvement has on the instructor, not to mention the student. What is the impact if the responsibility for learning and development has been designated to the individual?

There is an increasing need for instructors/trainers to take a more active role in their own professional development for a variety of reasons. First, there's an increasing rate of change in organizations, whether it be military or civilian, and in the knowledge and skills needed to perform jobs. Second, career ladders are rapidly shrinking or disappearing as reorganization leads to flatter structures. Third, there is an ever-increasing need for continued learning. It is the only way to keep up with the rapid growth in knowledge and the rate of change of our workplace environments. Finally, and most important, involvement in one's own development fosters greater commitment to the learning process than other-directed activities, and it positively impacts their customer--the trainee.

This responsibility also brings increased control over individual learning and development and the opportunity for a more stimulating and motivating work life.

Although it is sometimes difficult to put a dollar amount on the benefits of an aggressive PD program, it's not as difficult to see the positive effects it has on the instructor and student. This study determined the effects that a proactive PD program had on the student's/trainee's academic achievement.

Statement of the Problem

The problem of this study was to determine if there is a significant positive correlation between Airman Leadership School (ALS) instructors who actively participated in a professional development program and the academic achievement of their trainees.

Hypothesis

H₁: There is a significant direct relationship between instructors who actively participated in a professional development program and the academic achievement of their trainees.

Background and Significance

A student's academic achievement has been universally accepted as an indicator of course material mastery. Who delivers that course material in such a way that the achievement is evident--the trainer. We know that knowledge transfer is significantly

enhanced by the combination of the student's motivation and the trainer's abilities. If this is true, it would logically follow that the more prepared a trainer is, especially professionally, the greater the success of the student.

What is it that makes the trainer grow professionally? Various strategies have been developed to provide guidance toward this end; however, as the realities of job demands change, it is necessary to develop new awareness of self in relation to work. Self-knowledge is an integral competency area in the National Career Development Guidelines (National Occupational Information Coordinating Committee, 1989). Implying that the individual owns much of the responsibility for their development.

This study was undertaken in an attempt to determine if trainees of ALS instructors, who participate in professional development programs, at five different Air Force bases (Louisiana, Nevada, New Mexico, Arizona, Missouri), have a greater propensity for academic achievement. Currently, the Air Force only requires 48 hours of professional development per year. Is this adequate? Are the instructors that exceed the 48 hours increasing the benefits to themselves and their students? The benefit, if substantiated, is stronger justification to significantly increase the instructor's professional development program hours.

Self-knowledge is a locale with many pathways. Historically, self-knowledge--understanding of past experiences and influences that led to one's current level of development--is a key to shaping their future (Anderson, 1995, p. 280). Not only the

individuals future, but also possibly the future of some of the U.S. Air Force's men and women. Is there a strong argument for professional development elsewhere?

The first aspect of continued learning, formal professional development, is included in the National Education Goals; Goal 4 states: "By the year 2000, the nation's teaching force will have access to programs for the continued improvement of their professional skills and the opportunity to acquire the knowledge and skills needed to instruct and prepare all American students for the next century." The inclusion of a national goal for teacher professional development represents an increased focus on professional development as an important vehicle for educational excellence (Sprinthall, Reiman, & Theis-Sprinthall, 1996).

Limitations

This study was held to the following limitations:

1. All data was gathered from five of the sixteen Airman Leadership Schools operated under the purview of Head Quarters Air Combat Command, Langley Air Force Base VA.
2. The instructor data was limited to the availability of the instructor staff at the time of the study.
3. Student academic data was gathered from only three classes from each of the five schools in the 1999 Fiscal Year class schedule (Oct 98 - Sep 99).

Assumptions

In this study, it was assumed that:

1. The students were tested under the same conditions at the same approximate point in the course.
2. The students were evaluated consistently while attending the course.
3. All instructors participated in a professional development program.
4. Funding was not the reason an instructor did not participate in professional development.

Procedures

The five Airman Leadership Schools were contacted and asked to provide student academic results consisting of four multiple-choice tests. Simultaneously, the data was collected on the amount of hours each instructor spent in professional development. Each school superintendent was instructed to provide the required information on professional development participation and academic achievement. The data that pertains to the research goals will be documented. The results from both collection points, instructor and academics, were compiled and evaluated.

Definition of Terms

The following are definition of terms to aid in the readability of this study.

Airman Leadership School: A U.S. Air Force school which was designed to provide the needed education and training to ensure junior enlisted personnel are adequately prepared to take on increased roles and responsibilities as supervisors.

Air Combat Command: The corporate headquarters for the Air Force's largest operational fighter/bomber command. Responsible for over 100,000 people and billions of dollars in aircraft and equipment.

Objective Test: A test constructed to measure the student's mastery of the information in a multiple-choice format.

Performance-based evaluation: The writing and speaking evaluations administered to the students attending a course at the Airman Leadership School.

Instructor/trainer: An Air Force member assigned to an Airman Leadership School.

Student/trainee: An Air Force member attending a course conducted by an Airman Leadership School.

Professional Development: It is the processes and practices that improve the job-related knowledge, skills, and attitudes of the trainer/teacher.

Overview of Chapters

The professional development program requirements for ALS instructors are minimal at best. Therefore, the problem of this study was to determine the effect that a more aggressive program has on the students attending ALS at five different Air Force bases. This chapter provided a brief description of the purpose and the need for conducting this research, the way in which it was conducted, and the various terms used throughout the study. Chapter II will provide information on previous related studies and expert's opinions on this and similar topics. Chapter III will consist of a detailed description of the procedure and process used to reach conclusions. Chapter IV will present all relevant data that were collected and analyzed. The final chapter, Chapter V, will summarize and make recommendations for future research.

CHAPTER II

REVIEW OF LITERATURE

Chapter II will include a review of journals, reports, books and other informational sources about PD programs such as principles involved, program structure, and its impact on the teacher/trainer and student. The sources referenced in this chapter were chosen based on their timely and extensive coverage of the topic. First, it is imperative a common understanding of professional development is provided.

Professional Development Explained

Professional development is the processes and practices that improve the job-related knowledge, skills, and attitudes of the trainer/teacher (IASA, 1995). It may include workshops, independent reading and study, conferences, consultation with peers and experts, or continuing education classes.

In public education, PD typically consisted of district- or school- sponsored full- or half-day workshops and lectures held several times a year, supplemented by limited participation of individual teachers in professional conferences, course taking, and other activities offered by a variety of sponsors. They typically spend between 10 and 32 hours per year in some form of professional development (Corcoran, 1995; Little, 1993).

The United States Air Force requires all of its technical training and professional military education instructors to be involved in a limited amount of professional development annually. Since they are all faculty members of the Community College of the Air Force (CCAF), an accredited institution through the Southern Association of Colleges and Schools, professional development is a requirement. CCAF requires each faculty member to have at least 32-hours of in-service training and 16-hours of continuing education each year.

CCAF policy states "faculty members are encouraged to take the initiative in their own professional development and should seek professional certifications for which they are qualified. Schools should provide periodic in-service training, such as instruction in computer usage, and encourage attendance at professional workshops (CCAF Affiliation Handbook, 1998)."

Basic Principles of Professional Development

The research maintains that all teachers/trainers "bring strengths to the profession and that all are capable of both excellence and improvement. They want their students to achieve and feel good about themselves, and they will attempt new ways of teaching when they are convinced that their students will benefit" (Green & del Bosque, 1994). Green and del Bosque's five principles build on the strengths of educators and their desire to help students; they also meet the tenets of adult learning.

Principle 1. Professional development must build upon practitioner's current foundation of basic skills, knowledge, and areas of expertise. It will link new knowledge of activities with what they already know and are able to do and extend their thinking.

Principle 2. Professional development should include rich and varied opportunities that engage practitioners as learners and offer the opportunity to apply new skills and knowledge.

Principle 3. Professional development should offer practitioners opportunities for practicing new skills, strategies, and techniques. It should provide feedback on performance and continuing follow-up activities.

Principle 4. Successful and effective professional development should be manifested by measurable increases in teacher knowledge and skills.

Principle 5. Professional development should be linked to measurable outcomes in student performance, behavior, and/or achievement.

According to Green and del Bosque (1994), the foundational premise underlying the delivery of professional development, based on these five principles, is that professional development is a cultural, not a delivery, concept. It must be ongoing, flexible and supportive; should be developed **with** the practitioners instead of **for** the practitioner; and must fit within the institutional context of the practitioners. A model would facilitate the incorporation of the principles and provide a road map.

One Working Model

Developing a plan for professional development is essential because it will encourage addressing self-improvement activities in a proactive manner. It will also provide a framework for the discipline and commitment needed to achieve the planned changes inherent in any professional development program (Jones and Lowe, 1985). When the teacher/trainer is not intimately involved in the development of their program the plan becomes flawed. Duke (1993) describes the answer that many teachers give to the question "What does staff development mean to you? As "Four days a year." Why did they feel that way?

According to Green and del Bosque, (1994), much of the professional development offered to teachers/trainers is flawed in that it:

- often fails to meet teachers' needs,
- is often brief, infrequent, and mandated by central administration,
- relies on topics selected by administrators,
- allows little opportunity for practice, feedback, or follow-up,
- is often long and boring, and
- uses outdated in-service training modalities

In an effort to combat the program flaws, The Personal Professional Development Model (PPDM) was developed. The PPDM is a planning process that has been used successfully by teachers in achieving their professional development goals. The model

consists of four phases: initiating, planning, managing, and evaluating (Jones and Lowe 1985, p. 82). Three of the stages are reflective; that is, they involve contemplation and reflection to answer a series of questions. In only one stage--managing--is there activity. Each phase is accomplished by addressing a series of steps as follows:

Initiating Phase (Reflective)

- What do I hope to accomplish?
- What are my learning objectives?
- What is my potential payoff?

Planning Phase (Reflective)

- What resources are available to me?
- What will be my learning activities?
- How will I judge the success of this project?

Managing Phase (Active)

- Complete each activity in the planning phase
- Organize and interpret data
- Record progress and/or report findings

Evaluative Phase (Reflective after the fulfillment of plan)

- To what extent did I achieve my objectives?
- To what extent did I select and pursue appropriate learning activities?
- What are my learning needs now?

Teachers who used this model reported a number of advantages. First they accomplished more because the model contributed to their organization and discipline in achieving their objectives. The model also provided structure and emphasized their responsibility for their own learning. Finally, the model reduced procrastination (Jones and Lowe, 1985).

Professional development efforts should be designed with long term goals based on a grand vision of what is possible. A program might seek to have all students become successful learners, for example. At the same time, that vision should be accompanied by a strategic plan that includes specific incremental goals for three to five years into the future, gradually expanding on what is successful (Fullan, 1992).

Participation

According to the U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (1993-94), 96 percent of public school teachers reported having participated in one or more of the types of professional activities. Participation rates in district- and school-sponsored workshops and in-service training were high. In 1993-94, 88 percent of public school teachers reported that they had participated in district-sponsored programs since the end of the last school year, and 81 percent reported having participated in school-sponsored programs. These high rates reflect the fact that these programs are typically conducted at times when teachers must be in school and that participation in these programs is often required.

A substantially lower proportion of public school teachers had taken college courses in their field or adult education classes since the end of the previous school year (25 percent in each case). Teachers may take courses for many reasons: to obtain certification in a new field, maintain their present certification, earn an advanced degree, qualify for a salary increase, pursue an academic or personal interest, or keep current in their field. Because such courses typically require a much larger commitment of time (and sometimes teachers' own money) than the other types of professional activities discussed here and require that this time be spent outside the school day, most teachers do not engage in this type of course taking every year. (SASS, 1993-94)

Sometimes teachers take courses to retrain in new areas where teacher shortages exist (sometimes at district expense) and then switch assignment fields. In the public sector, bilingual/ESL and special education teachers were more likely than teachers in other fields to report having taken field-related college courses. Participation in professional development activities described in the SASS data was consistently higher for public school teachers than private school teachers (Henke et al., 1996).

Professional development for all management levels is accepted in business, industry, the military, and government. Business and industry alone spends between two and 15 percent of their annual budgets on professional development--translating into billions of dollars (Bassi & Van Buren, 1999).

Putting Focus on Professional Development

An important lesson learned from the past is that we cannot improve schools or Human Resource Development programs without improving the skills and abilities of the professional educators within them. In other words, we must see change as an individual process and be willing to invest in the intellectual capital of those individuals who staff our schools (Wise, 1991). Success in any improvement effort always hinges on the smallest unit of the organization and, in education, that is the classroom (McLaughlin, 1991). Those that run our schools are the ones chiefly responsible for implementing change. Therefore professional development processes, regardless of their form, must be relevant to them, and must directly address their specific needs and concerns (Sparks & Loucks-Horsley, 1989).

Teacher professional development has traditionally been considered primarily a local responsibility (although supported by state funds and, to a lesser extent, by federal funds as well). Recently, however, the federal government and many state governments have taken a greater interest and assumed a more active role in teacher professional development. In 1994, a goal for professional development was added to the National Education Goals, stating that "by the year 2000, the Nation's teaching force will have access to programs for the continued improvement of their professional skills and the opportunity to acquire the knowledge and skills needed to instruct and prepare all American students for the next century." Both the Improving America's Schools Act of

1994 and the Goals 2000: Educate America Act of 1994 provide new opportunities for teachers to upgrade their skills and emphasize flexible and creative use of resources.

In addition, the U.S. Department of Education has emphasized explicitly the importance of professional development by funding professional development activities through federal programs such as the Eisenhower Professional Development Program, the Comprehensive Technical Assistance Centers, and Title I. Federal funding is also available for professional development in categorical programs such as bilingual education, special education, and vocational education. In addition to the programs administered by the U.S. Department of Education, the federal government has supported professional development through other agencies such as the National Science Foundation (NSF) and by supporting the standards and assessment activities of the National Board of Professional Teaching Standards (NBPTS).

While the impact of these programs would not have been measurable in the 1993–94 SASS report, evidence is accumulating that teaching practice in mathematics and science are being changed through such efforts. A preliminary assessment found many examples of classrooms where teaching and learning have been improved in important ways (Zucker, 1995). An evaluation of the Eisenhower Mathematics and Science Education Regional Consortia Program, conducted in 1996, found that nearly two-thirds (62 percent) of the individuals who had participated in the activities under study reported that they had incorporated some new behavior into their jobs as a result of what they had learned (Haslam, Turnbull, & Humphrey, 1998).

Summary

In the minds of many today there is a clear vision of what would be ideal in professional development. This ideal sees educators at all levels constantly in search of new and better ways to address the diverse learning needs of their students. It sees schools as learning communities and industry as learning organizations where teachers, trainers and students are continually engaged in inquiry and stimulating discourse. The ideas contained in this chapter may seem idealistic when taken at face value; however, they have been presented to you as objectively as possible to provide clarity on this important topic.

CHAPTER III

METHODS AND PROCEDURES

Chapter III describes the methods and procedures used to conduct this study. This chapter includes a description of the population, research instrument, method of data collection, statistical analysis and summary.

Population

The population of this study consisted of 23 Airman Leadership School instructors and 376 of their trainees. The time frame for data collection, for both instructor and student academic achievement, began 1 Jan 99 and ended 1 Apr 99. At the time of the study, the number of instructors represented 27 percent of Air Combat Command's ALS instructor staff. The instructors and students were located at five different Air Force bases throughout the United States (Louisiana, Nevada, New Mexico, Arizona, and Missouri). The student academic achievement data represented 16 percent of the total student population during an average fiscal school year.

Research Instrument

The instrument used to collect the data was a letter, addressed to each of the five school superintendents with attached data collection spreadsheet. Since all the schools addressed in this study report directly to the sender of the letter, full participation was

required. The letter emphasized one of CCAF's affiliation requirements which ensures an instructor participates in some form of professional development during each fiscal year. It went on to explain the headquarters' initiative to justify increasing staff and faculty professional development funding. Since program funding could be impacted, the data was crucial in supporting the initiative. The attached spreadsheets were developed with user friendliness in mind to facilitate a rapid reply. The letter and spreadsheets are in Appendix A.

Method of Data Collection

In the letter, sent to each of the five school superintendents, they were asked to provide the data/information on instructor professional development hours and student academic achievement for the specified period of time. The letter provided instructions for collecting and returning the data in an electronic medium by 1 Jun 99. The date allowed for a workable timeline for a reply.

Statistical Analysis

Once the instructor professional development and student test data was received from each of the five schools, it was inserted into a single spreadsheet. It's important to note that there were three (3) tests scores for each student. In order to apply Pearson's r analysis, the mean was determined by combining the student's three tests and comparing it to the instructor's professional development hours. This provided the two data sets.

The data sets would form the basis for using Pearson's r to determine if a significant direct correlation existed. After analysis, the scores were matched against the Tables of Critical Values at the .05 and .01 Levels for a one-tailed test. The score was then applied against a correlation value to determine the magnitude of the relationship.

Summary

The methods and procedures for conducting this research were explained in this chapter. The population used, the research instrument, the data collection method and the data analysis were described. The data analysis will be accomplished and reported in Chapter IV.

CHAPTER IV

FINDINGS

Chapter IV provides the Findings of the study. The data contained in this chapter was gathered from the five Air Force Airman Leadership Schools detailed in Chapter III. The Pearson's r analysis was used to determine the validity of the hypothesis asserting a significant direct relationship between instructors who actively participated in professional development programs and the academic achievement of their trainees. This chapter details the information that was gathered in tabular form and then the results of the analysis. Actual data collected can be found in Appendix B.

Gathered Data

In order to conduct the analysis, specific data had to be collected. As stated earlier, all the data can be found in Appendix B; however, what's listed here are the major categories of the data and the findings from the statistical analysis in the form of four tables.

Table 1—Student/Instructor Data (Mean and Range)

The information contained in this table shows the instructor PD hour and Student Test mean and range which was used in later Pearson's r calculations. The information in Table 1 shows there are significant differences in the PD hour means between schools, however, the trend does not continue with the test means or ranges.

Table 1

School	PD hour Mean	PD hour Range	Number of Instructors	Student Test Mean	Student Test Range	Number of students
Barksdale AFB LA	119.1	27	6	81.56	38.07	103
Cannon AFB NM	46.10	25	4	82.90	22.09	36
Nellis AFB NV	240.75	86	4	83.21	33.18	119
Whiteman AFB MO	99.75	60	4	84.24	25.00	48
Davis-Monthan AZ	98.75	76	4	85.24	26.67	70

Table 2--Instructor Data Collection

The information contained in this table relates directly to the instructor and the number of professional development hours recorded. The requirement was to provide the school location, the number of instructors (giving each a specific number), and then determining the mean. The number of PD hours range from 34.5 to 273 hours which is a significant spread with the standard instructor staff holding at four (4) instructors on the average. The complete breakdown can be found in Appendix A.

Table 2

School	Instructor Number	PD Hours Spread
Barksdale AFB LA	1-6	104 - 131
Cannon AFB NM	1-4	34.5 - 60.5
Nellis AFB NV	1-4	187 - 273
Whiteman AFB MO	1-4	62 - 122
Davis-Monthan AZ	1-4	78 - 154

Table 3--Student Data Collection

This table lists the data categories specifically relating to the academic achievement of the students. It identifies school location, class designator, student reference number, tests 1 - 3 and the instructors that taught in that specific class. As noted here, the student population ranged from 12 to 36 students per class with the student to instructor ratio of 12:1. Since this is only an example of the collection instrument, there are no cumulative test scores listed. Scores can be viewed in Appendix B.

Table 3

School	Class #	Student ID	Average Tests Scores	Instructors Taught
Barksdale AFB LA	99A - 99C	1 - 36	81.56	1-6
Cannon AFB NM	98F - 99B	1 - 12	82.90	1-4
Nellis AFB NV	98F - 99B	1 - 36	83.21	1-4
Whiteman AFB MO	99A - 99C	1 - 24	84.24	1-4
Davis-Monthan AZ	99A - 99C	1 - 24	85.24	1-4

Table 4—Pearson's r Correlation

The correlation coefficient and critical value listed in Table 4 gave us vital information concerning the relationship between the two variables of PD hours and student tests. The strength of the relationship is shown by how large the coefficient is, that is, how close it is to + or - 1. In this study, the Pearson's r correlation coefficient was -.012.

Table 4

Pearson's r Correlation Coefficient	Pearson's Level of Significance
= -.012	One-tailed test results

Summary

The results of the data collection were tabulated, reported and analyzed. The data, collected from five Air Force Airman Leadership Schools, consisted of the academic achievement of 376 student. The professional development hours were compiled from 23 instructors. These results will be summarized in Chapter V where conclusions and recommendations will be made.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Chapter V includes the summary, conclusions and recommendations of this study. The summary will discuss the study, the conclusions will be drawn from the findings of the study, and the recommendations will suggest areas for further study.

Summary

This study was conducted to determine the relationship between instructors participating in professional develop programs and their student's academic achievement. In order to do this, specific data was required to conduct the analysis. It was critical to know how many professional development hours had been documented for each of the 23 instructors used in this study and what their student's (376) cumulative test scores were over a three-class period.

The hypothesis: There is a significant direct relationship between instructors who actively participated in a professional development program and the academic achievement of their trainees.

The background and significance cited numerous instances where recognized educational bodies supported the benefits of strong professional development programs. A student's academic achievement has been universally accepted as an indicator of course

material mastery. Who delivers that course material in such a way that the achievement is evident--the trainer. We know that knowledge transfer is significantly enhanced by the combination of the student's motivation and the trainer's abilities. If this is true, it would logically follow that the more prepared a trainer is, especially professionally, the greater the success of the student. The inclusion of a national goal for teacher professional development represents an increased focus on professional development as an important vehicle for educational excellence (Sprinthall, Reiman, & Theis-Sprinthall, 1996).

The limitations of this study were the following:

1. All data was gathered from five of the sixteen Airman Leadership Schools operated under the purview of Head Quarters Air Combat Command, Langley Air Force Base VA.
2. The instructor data was limited to the availability of the instructor staff at the time of the study.
3. Student academic data was gathered from only three classes from each of the five schools in the 1999 Fiscal Year class schedule (Oct 98 - Sep 99).

The population of this study consisted of 23 Airman Leadership School instructors and 376 students. The test means and instructor professional development hour averages would form the basis for using Pearson's r to determine if a significant direct correlation existed. After analysis, the scores were matched against the Tables of Critical Values at the .05 and .01 levels for a one-tailed test. The score was then applied against a correlation value to determine the magnitude of the relationship.

Conclusions

Hypothesis: There is a significant direct relationship between instructors who actively participated in a professional development program and the academic achievement of their trainees.

There is no relationship between instructors who actively participated in a professional development program and their student's academic achievement. The Pearson's r analysis was performed on the data collected and the correlation coefficient was $-.012$, for 376 pairs of data, N . The table recommendation for the Critical Values at the $.01$ level, one-tailed test, is $.1330$ and $.1075$ at the $.05$ level (using 374 as the df). Since the computed r of $-.012$ does not exceed either value ($.05$ or $.01$), it is not significant at the $.01$ level. A test of magnitude is not required since the significance level is not met. Meaning, there is no correlation between a student's academic achievement and the instructor's participation in a professional development program.

Recommendations

Further studies should be considered based on the following two issues. First, the literature reviewed for this study indicated a strong positive relationship between student achievement and teacher development in the public/private school system in overwhelming numbers. In addition, the reported research conducted by professional organizations such as The Department of Education and the National Teachers

Association can not be discounted and these alone support a more in-depth analysis of the types of professional development the instructors received.

Second, this study was limited based in scope to only five of the Air Force's 68 Airman Leadership Schools. Studies should be conducted on larger populations or stratified to concentrate on specific areas of professional development to determine what type of training/education yields the greatest benefits for both teacher/instructor and student/trainee. For example, more job-specific in-service training may provide greater results for active duty military, whereas, continuing academic education may strengthen the teacher in the public school system.

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Appendix A

MEMORADUM FOR AIRMAN LEADERSHIP SCHOOL FLIGHT CHIEFS

FROM: HQ ACC Enlisted Professional Military Education

SUBJECT: Instructor Professional Development Initiative

1. As you know, the Community College of the Air Force (CCAF) requires all of its technical training and professional military education instructors to be involved in a limited amount of professional development annually. CCAF requires each faculty member to have only 48 hours of professional development--which is minimal at best. Therefore, the headquarters has approved a study to determine the effect that a more aggressive program has on the students attending ALS at five of our schools. Since your student population is quite large and instructor staff diverse, we felt your instructor and student information would contribute significantly to this study.
2. This study was undertaken in an attempt to determine if the students of our ALS instructors, who participate in professional development programs, have a greater propensity for academic achievement. As stated earlier, the Air Force only requires 48 hours of professional development per year. Is this adequate? If not, are the instructors that exceed the 48 hours increasing the benefits to themselves and their students? The benefit, if substantiated, should provide stronger justification to increase the instructor's professional development program hours and funding for such programs.
3. We need your assistance in gathering the information needed to support this initiative. Since you must already maintain this data for other reasons, it should take minimal effort to consolidate it on the attached spreadsheets. The attachments ask you to record instructor professional development hours and student academic achievement scores from your last three classes. Directions are included on each spreadsheet.
4. If you have questions or need clarification, please call me or respond to this email. It's imperative that we get you information by COB on 24 May 99.

THOMAS L. LANGDON, SMSgt, USAF
Chief, Enlisted Professional Military Education

Attachments

Instructor PD Log Sheet
Student Test Data

Appendix A - Attachment 1

This table was provide to each location and used to collect the data referring to the instructor.

School Location	Instructor #	# of Individual PD Hours	Cumulative hours
Barksdale AFB LA	1	68	
Barksdale AFB LA	2	91	
Barksdale AFB LA	3	88	
Barksdale AFB LA	4	101	
Barksdale AFB LA	5	77	
			85

$$68+91+88+101+77 = 425$$

$$425/5 \text{ (instructors)} = 85 \text{ Avg PD Hour}$$

Data provided is an example *only*.

Please provide the number of in-service training and professional development hours each instructor completed since 1 Apr 98 (one-calendar year). ***DO NOT*** provide names.

Summing the total hours and dividing by the number of instructors derives cumulative hours

Appendix A - Attachment 2

This table was provide to each location and used to collect the data referring to the trainee academic accomplishments.

ALS	Class	Student #	3-Test Cumulative score	Instructors that taught
Barksdale	99-A	101	88.3	1,3,5

- The first row is an example only.
- Provide student scores (for all three tests) from your last your last three classes. (i.e., classes 99-A, B, C or 98-G, 99-A, 99-B)
- Use the class designator (99-A,B) and student number when filling in the student's test scores.
- Please indicate, by instructor #, those that were present and taught during each class.

Appendix B

The following table is the data provided by the five Airman Leadership School Superintendents. The data refers to the hypothesis, which served as the basis of this study. The categories at the top of the table indicate the compiled data.

ALS Location	ALS Class Designator	Instructors who taught	3-Test Avg	PD Avg
Barksdale AFB LA	99-A	4	87.33	113.33
Barksdale AFB LA	99-A	5	88.67	113.33
Barksdale AFB LA	99-A	6	92.67	113.33
Barksdale AFB LA	99-A	4	85.33	113.33
Barksdale AFB LA	99-A	5	86.67	113.33
Barksdale AFB LA	99-A	6	80.67	113.33
Barksdale AFB LA	99-A	4	82.33	113.33
Barksdale AFB LA	99-A	5	75.00	113.33
Barksdale AFB LA	99-A	6	76.00	113.33
Barksdale AFB LA	99-A	4	83.00	113.33
Barksdale AFB LA	99-A	5	88.33	113.33
Barksdale AFB LA	99-A	6	87.00	113.33
Barksdale AFB LA	99-A	4	86.67	113.33
Barksdale AFB LA	99-A	5	90.00	113.33
Barksdale AFB LA	99-A	6	85.67	113.33
Barksdale AFB LA	99-A	4	71.67	113.33
Barksdale AFB LA	99-A	5	83.33	113.33
Barksdale AFB LA	99-A	6	81.00	113.33
Barksdale AFB LA	99-A	4	90.67	113.33
Barksdale AFB LA	99-A	5	91.33	113.33
Barksdale AFB LA	99-A	6	84.33	113.33
Barksdale AFB LA	99-A	4	84.00	113.33
Barksdale AFB LA	99-A	5	81.33	113.33
Barksdale AFB LA	99-A	6	78.33	113.33
Barksdale AFB LA	99-A	4	87.33	113.33
Barksdale AFB LA	99-A	5	91.67	113.33
Barksdale AFB LA	99-A	6	88.33	113.33
Barksdale AFB LA	99-A	4	82.33	113.33
Barksdale AFB LA	99-A	5	85.33	113.33
Barksdale AFB LA	99-A	6	84.33	113.33
Barksdale AFB LA	99-A	4	83.00	113.33
Barksdale AFB LA	99-A	5	77.00	113.33
Barksdale AFB LA	99-A	6	86.67	113.33
Barksdale AFB LA	99-A	4	90.33	113.33
Barksdale AFB LA	99-B	3	54.67	117.67

ALS Location	ALS Class Designator	Instructors who taught	3-Test Avg	PD Avg
Barksdale AFB LA	99-B	4	78.33	117.67
Barksdale AFB LA	99-B	5	83.67	117.67
Barksdale AFB LA	99-B	3	86.67	117.67
Barksdale AFB LA	99-B	4	83.67	117.67
Barksdale AFB LA	99-B	5	77.33	117.67
Barksdale AFB LA	99-B	3	83.67	117.67
Barksdale AFB LA	99-B	4	88.67	117.67
Barksdale AFB LA	99-B	5	90.00	117.67
Barksdale AFB LA	99-B	3	85.67	117.67
Barksdale AFB LA	99-B	4	84.67	117.67
Barksdale AFB LA	99-B	5	80.33	117.67
Barksdale AFB LA	99-B	3	80.67	117.67
Barksdale AFB LA	99-B	4	89.67	117.67
Barksdale AFB LA	99-B	5	75.00	117.67
Barksdale AFB LA	99-B	3	83.00	117.67
Barksdale AFB LA	99-B	4	78.33	117.67
Barksdale AFB LA	99-B	5	87.00	117.67
Barksdale AFB LA	99-B	3	81.67	117.67
Barksdale AFB LA	99-B	4	77.67	117.67
Barksdale AFB LA	99-B	5	84.67	117.67
Barksdale AFB LA	99-B	3	83.67	117.67
Barksdale AFB LA	99-B	4	81.67	117.67
Barksdale AFB LA	99-B	5	84.67	117.67
Barksdale AFB LA	99-B	3	92.33	117.67
Barksdale AFB LA	99-B	4	92.00	117.67
Barksdale AFB LA	99-B	5	87.00	117.67
Barksdale AFB LA	99-B	3	85.67	117.67
Barksdale AFB LA	99-B	4	86.00	117.67
Barksdale AFB LA	99-B	5	90.67	117.67
Barksdale AFB LA	99-B	3	88.67	117.67
Barksdale AFB LA	99-B	5	90.00	117.67
Barksdale AFB LA	99-B	4	89.67	117.67
Barksdale AFB LA	99-B	5	81.33	117.67
Barksdale AFB LA	99-C	3	81.67	117.67
Barksdale AFB LA	99-C	5	80.33	117.67
Barksdale AFB LA	99-C	6	91.33	117.67
Barksdale AFB LA	99-C	3	83.67	117.67
Barksdale AFB LA	99-C	5	90.00	117.67
Barksdale AFB LA	99-C	6	79.00	117.67
Barksdale AFB LA	99-C	3	72.00	117.67
Barksdale AFB LA	99-C	5	91.33	117.67
Barksdale AFB LA	99-C	6	86.00	117.67
Barksdale AFB LA	99-C	3	82.67	117.67

ALS Location	ALS Class Designator	Instructors who taught	3-Test Avg	PD Avg
Barksdale AFB LA	99-C	6	78.33	117.67
Barksdale AFB LA	99-C	3	79.33	117.67
Barksdale AFB LA	99-C	6	84.00	117.67
Barksdale AFB LA	99-C	3	87.67	117.67
Barksdale AFB LA	99-C	5	89.33	117.67
Barksdale AFB LA	99-C	6	88.00	117.67
Barksdale AFB LA	99-C	3	83.00	117.67
Barksdale AFB LA	99-C	5	92.67	117.67
Barksdale AFB LA	99-C	6	83.00	117.67
Barksdale AFB LA	99-C	3	83.67	117.67
Barksdale AFB LA	99-C	5	88.00	117.67
Barksdale AFB LA	99-C	6	75.00	117.67
Barksdale AFB LA	99-C	3	77.33	117.67
Barksdale AFB LA	99-C	6	88.33	117.67
Barksdale AFB LA	99-C	3	79.33	117.67
Barksdale AFB LA	99-C	5	82.00	117.67
Barksdale AFB LA	99-C	6	82.67	117.67
Barksdale AFB LA	99-C	3	78.00	117.67
Barksdale AFB LA	99-C	5	84.67	117.67
Barksdale AFB LA	99-C	6	87.33	117.67
Barksdale AFB LA	99-C	3	89.00	117.67
Barksdale AFB LA	99-C	5	74.00	117.67
Barksdale AFB LA	99-C	6	74.00	117.67
Barksdale AFB LA	99-C	5	82.67	117.67
Barksdale AFB LA	99-C	6	91.00	117.67
Cannon AFB NM	98-F	1	77.28	57.25
Cannon AFB NM	98-F	2	79.06	57.25
Cannon AFB NM	98-F	1	81.71	57.25
Cannon AFB NM	98-F	2	82.69	57.25
Cannon AFB NM	98-F	1	87.60	57.25
Cannon AFB NM	98-F	2	80.84	57.25
Cannon AFB NM	98-F	1	74.76	57.25
Cannon AFB NM	98-F	2	85.57	57.25
Cannon AFB NM	98-F	1	86.06	57.25
Cannon AFB NM	98-F	2	81.74	57.25
Cannon AFB NM	98-F	1	79.98	57.25
Cannon AFB NM	98-F	2	86.93	57.25
Cannon AFB NM	99-A	1	80.18	57.25
Cannon AFB NM	99-A	2	84.61	57.25
Cannon AFB NM	99-A	4	88.42	50.00
Cannon AFB NM	99-A	1	79.60	50.00
Cannon AFB NM	99-A	2	83.41	50.00
Cannon AFB NM	99-A	4	78.28	50.00

ALS Location	ALS Class Designator	Instructors who taught	3-Test Avg	PD Avg
Cannon AFB NM	99-A	1	87.34	50.00
Cannon AFB NM	99-A	2	82.21	50.00
Cannon AFB NM	99-A	4	86.39	50.00
Cannon AFB NM	99-A	1	88.42	50.00
Cannon AFB NM	99-A	2	88.79	50.00
Cannon AFB NM	99-A	4	81.01	50.00
Cannon AFB NM	99-B	1	79.60	50.00
Cannon AFB NM	99-B	2	80.18	50.00
Cannon AFB NM	99-B	4	81.51	50.00
Cannon AFB NM	99-B	1	83.66	50.00
Cannon AFB NM	99-B	2	94.99	50.00
Cannon AFB NM	99-B	4	82.33	50.00
Cannon AFB NM	99-B	1	84.36	50.00
Cannon AFB NM	99-B	2	76.25	50.00
Cannon AFB NM	99-B	4	83.53	50.00
Cannon AFB NM	99-B	1	87.47	50.00
Cannon AFB NM	99-B	2	72.90	50.00
Cannon AFB NM	99-B	4	84.73	50.00
Davis-Monthan AFB AZ	99-A	1	80.33	105.67
Davis-Monthan AFB AZ	99-A	2	85.33	105.67
Davis-Monthan AFB AZ	99-A	3	90.67	105.67
Davis-Monthan AFB AZ	99-A	1	78.00	105.67
Davis-Monthan AFB AZ	99-A	2	84.33	105.67
Davis-Monthan AFB AZ	99-A	3	89.33	105.67
Davis-Monthan AFB AZ	99-A	1	80.67	105.67
Davis-Monthan AFB AZ	99-A	2	86.67	105.67
Davis-Monthan AFB AZ	99-A	3	87.67	105.67
Davis-Monthan AFB AZ	99-A	1	76.67	105.67
Davis-Monthan AFB AZ	99-A	2	84.00	105.67
Davis-Monthan AFB AZ	99-A	3	90.33	105.67
Davis-Monthan AFB AZ	99-A	1	83.67	105.67
Davis-Monthan AFB AZ	99-A	2	86.67	105.67
Davis-Monthan AFB AZ	99-A	3	80.67	105.67
Davis-Monthan AFB AZ	99-A	1	93.67	105.67
Davis-Monthan AFB AZ	99-A	2	86.67	105.67
Davis-Monthan AFB AZ	99-A	3	86.00	105.67
Davis-Monthan AFB AZ	99-A	1	85.33	105.67
Davis-Monthan AFB AZ	99-A	2	86.67	105.67
Davis-Monthan AFB AZ	99-A	3	86.00	105.67
Davis-Monthan AFB AZ	99-A	1	86.33	105.67
Davis-Monthan AFB AZ	99-A	2	85.67	105.67
Davis-Monthan AFB AZ	99-A	3	90.33	105.67
Davis-Monthan AFB AZ	99-B	2	85.00	105.67

ALS Location	ALS Class Designator	Instructors who taught	3-Test Avg	PD Avg
Davis-Monthan AFB AZ	99-B	3	92.33	105.67
Davis-Monthan AFB AZ	99-B	4	81.67	105.67
Davis-Monthan AFB AZ	99-B	2	85.00	105.67
Davis-Monthan AFB AZ	99-B	3	96.00	105.67
Davis-Monthan AFB AZ	99-B	4	90.67	105.67
Davis-Monthan AFB AZ	99-B	2	84.00	105.67
Davis-Monthan AFB AZ	99-B	3	91.33	105.67
Davis-Monthan AFB AZ	99-B	4	92.67	105.67
Davis-Monthan AFB AZ	99-B	2	91.33	105.67
Davis-Monthan AFB AZ	99-B	3	88.00	105.67
Davis-Monthan AFB AZ	99-B	4	81.67	105.67
Davis-Monthan AFB AZ	99-B	2	88.33	105.67
Davis-Monthan AFB AZ	99-B	3	97.00	105.67
Davis-Monthan AFB AZ	99-B	4	76.33	105.67
Davis-Monthan AFB AZ	99-B	2	87.33	105.67
Davis-Monthan AFB AZ	99-B	3	75.33	105.67
Davis-Monthan AFB AZ	99-B	4	91.33	105.67
Davis-Monthan AFB AZ	99-B	2	91.67	105.67
Davis-Monthan AFB AZ	99-B	3	79.33	105.67
Davis-Monthan AFB AZ	99-B	4	89.00	105.67
Davis-Monthan AFB AZ	99-B	4	87.67	105.67
Davis-Monthan AFB AZ	99-C	1	79.00	98.75
Davis-Monthan AFB AZ	99-C	2	87.33	98.75
Davis-Monthan AFB AZ	99-C	3	76.67	98.75
Davis-Monthan AFB AZ	99-C	4	92.33	98.75
Davis-Monthan AFB AZ	99-C	1	83.33	98.75
Davis-Monthan AFB AZ	99-C	2	84.00	98.75
Davis-Monthan AFB AZ	99-C	3	84.67	98.75
Davis-Monthan AFB AZ	99-C	4	85.00	98.75
Davis-Monthan AFB AZ	99-C	1	77.67	98.75
Davis-Monthan AFB AZ	99-C	2	79.00	98.75
Davis-Monthan AFB AZ	99-C	3	91.33	98.75
Davis-Monthan AFB AZ	99-C	4	87.67	98.75
Davis-Monthan AFB AZ	99-C	1	73.67	98.75
Davis-Monthan AFB AZ	99-C	2	78.33	98.75
Davis-Monthan AFB AZ	99-C	3	80.33	98.75
Davis-Monthan AFB AZ	99-C	4	81.33	98.75
Davis-Monthan AFB AZ	99-C	1	79.33	98.75
Davis-Monthan AFB AZ	99-C	2	87.33	98.75
Davis-Monthan AFB AZ	99-C	3	70.33	98.75
Davis-Monthan AFB AZ	99-C	4	78.00	98.75
Davis-Monthan AFB AZ	99-C	1	88.67	98.75
Davis-Monthan AFB AZ	99-C	2	85.00	98.75

ALS Location	ALS Class Designator	Instructors who taught	3-Test Avg	PD Avg
Davis-Monthan AFB AZ	99-C	3	91.67	98.75
Davis-Monthan AFB AZ	99-C	4	90.33	98.75
Nellis AFB NV	98-F	1	87.71	240.30
Nellis AFB NV	98-F	3	75.42	240.30
Nellis AFB NV	98-F	4	76.25	240.30
Nellis AFB NV	98-F	1	76.71	240.30
Nellis AFB NV	98-F	3	78.28	240.30
Nellis AFB NV	98-F	4	84.24	240.30
Nellis AFB NV	98-F	3	73.64	240.30
Nellis AFB NV	98-F	4	75.30	240.30
Nellis AFB NV	98-F	1	80.43	240.30
Nellis AFB NV	98-F	3	64.79	240.30
Nellis AFB NV	98-F	4	81.26	240.30
Nellis AFB NV	98-F	1	85.32	240.30
Nellis AFB NV	98-F	3	88.91	240.30
Nellis AFB NV	98-F	4	90.69	240.30
Nellis AFB NV	98-F	1	86.39	240.30
Nellis AFB NV	98-F	3	88.54	240.30
Nellis AFB NV	98-F	4	90.81	240.30
Nellis AFB NV	98-F	1	79.60	240.30
Nellis AFB NV	98-F	3	69.09	240.30
Nellis AFB NV	98-F	4	93.55	240.30
Nellis AFB NV	98-F	1	77.91	240.30
Nellis AFB NV	98-F	3	76.96	240.30
Nellis AFB NV	98-F	4	77.70	240.30
Nellis AFB NV	98-F	1	90.81	240.30
Nellis AFB NV	98-F	3	90.81	240.30
Nellis AFB NV	98-F	4	86.76	240.30
Nellis AFB NV	98-F	1	79.23	240.30
Nellis AFB NV	98-F	3	75.30	240.30
Nellis AFB NV	98-F	4	78.86	240.30
Nellis AFB NV	98-F	1	74.72	240.30
Nellis AFB NV	98-F	3	87.59	240.30
Nellis AFB NV	98-F	4	85.32	240.30
Nellis AFB NV	98-F	1	84.36	240.30
Nellis AFB NV	98-F	3	82.83	240.30
Nellis AFB NV	98-F	4	78.53	240.30
Nellis AFB NV	99-A	1	82.87	240.75
Nellis AFB NV	99-A	2	83.95	240.75
Nellis AFB NV	99-A	3	86.54	240.75
Nellis AFB NV	99-A	4	81.34	240.75
Nellis AFB NV	99-A	1	91.71	240.75
Nellis AFB NV	99-A	2	84.72	240.75

ALS Location	ALS Class Designator	Instructors who taught	3-Test Avg	PD Avg
Nellis AFB NV	99-A	3	74.72	240.75
Nellis AFB NV	99-A	4	91.90	240.75
Nellis AFB NV	99-A	1	89.60	240.75
Nellis AFB NV	99-A	2	83.61	240.75
Nellis AFB NV	99-A	3	97.97	240.75
Nellis AFB NV	99-A	4	83.70	240.75
Nellis AFB NV	99-A	1	90.88	240.75
Nellis AFB NV	99-A	2	90.09	240.75
Nellis AFB NV	99-A	3	90.67	240.75
Nellis AFB NV	99-A	4	87.84	240.75
Nellis AFB NV	99-A	1	93.80	240.75
Nellis AFB NV	99-A	2	85.15	240.75
Nellis AFB NV	99-A	3	85.94	240.75
Nellis AFB NV	99-A	4	75.59	240.75
Nellis AFB NV	99-A	1	93.95	240.75
Nellis AFB NV	99-A	2	83.58	240.75
Nellis AFB NV	99-A	3	78.74	240.75
Nellis AFB NV	99-A	4	81.89	240.75
Nellis AFB NV	99-A	1	80.60	240.75
Nellis AFB NV	99-A	2	88.59	240.75
Nellis AFB NV	99-A	3	90.70	240.75
Nellis AFB NV	99-A	4	89.01	240.75
Nellis AFB NV	99-A	1	74.34	240.75
Nellis AFB NV	99-A	2	78.46	240.75
Nellis AFB NV	99-A	3	75.01	240.75
Nellis AFB NV	99-A	4	86.84	240.75
Nellis AFB NV	99-A	1	70.99	240.75
Nellis AFB NV	99-A	2	87.11	240.75
Nellis AFB NV	99-A	3	77.44	240.75
Nellis AFB NV	99-A	4	81.55	240.75
Nellis AFB NV	99-A	1	84.25	240.75
Nellis AFB NV	99-A	2	76.40	240.75
Nellis AFB NV	99-A	3	86.96	240.75
Nellis AFB NV	99-A	4	79.54	240.75
Nellis AFB NV	99-A	1	71.09	240.75
Nellis AFB NV	99-A	2	86.77	240.75
Nellis AFB NV	99-A	3	90.68	240.75
Nellis AFB NV	99-A	4	73.36	240.75
Nellis AFB NV	99-A	1	79.68	240.75
Nellis AFB NV	99-A	2	76.67	240.75
Nellis AFB NV	99-A	3	97.88	240.75
Nellis AFB NV	99-A	4	93.86	240.75
Nellis AFB NV	99-B	1	91.89	230.00

ALS Location	ALS Class Designator	Instructors who taught	3-Test Avg	PD Avg
Nellis AFB NV	99-B	2	88.29	230.00
Nellis AFB NV	99-B	3	89.62	230.00
Nellis AFB NV	99-B	1	87.34	230.00
Nellis AFB NV	99-B	2	88.78	230.00
Nellis AFB NV	99-B	3	91.89	230.00
Nellis AFB NV	99-B	1	83.41	230.00
Nellis AFB NV	99-B	2	85.44	230.00
Nellis AFB NV	99-B	3	84.85	230.00
Nellis AFB NV	99-B	1	82.21	230.00
Nellis AFB NV	99-B	2	91.77	230.00
Nellis AFB NV	99-B	3	77.27	230.00
Nellis AFB NV	99-B	1	94.87	230.00
Nellis AFB NV	99-B	2	85.32	230.00
Nellis AFB NV	99-B	3	86.76	230.00
Nellis AFB NV	99-B	1	82.70	230.00
Nellis AFB NV	99-B	2	93.80	230.00
Nellis AFB NV	99-B	3	87.00	230.00
Nellis AFB NV	99-B	1	81.96	230.00
Nellis AFB NV	99-B	2	77.57	230.00
Nellis AFB NV	99-B	3	83.53	230.00
Nellis AFB NV	99-B	1	84.36	230.00
Nellis AFB NV	99-B	2	76.74	230.00
Nellis AFB NV	99-B	3	75.30	230.00
Nellis AFB NV	99-B	1	87.71	230.00
Nellis AFB NV	99-B	2	92.96	230.00
Nellis AFB NV	99-B	3	80.55	230.00
Nellis AFB NV	99-B	1	82.58	230.00
Nellis AFB NV	99-B	2	84.12	230.00
Nellis AFB NV	99-B	3	87.00	230.00
Nellis AFB NV	99-B	1	85.44	230.00
Nellis AFB NV	99-B	2	83.78	230.00
Nellis AFB NV	99-B	3	92.72	230.00
Nellis AFB NV	99-B	1	81.72	230.00
Nellis AFB NV	99-B	2	81.26	230.00
Nellis AFB NV	99-B	3	89.74	230.00
Whiteman AFB MO	99-A	1	95.00	112.33
Whiteman AFB MO	99-A	2	98.00	112.33
Whiteman AFB MO	99-A	3	82.67	112.33
Whiteman AFB MO	99-A	1	79.33	112.33
Whiteman AFB MO	99-A	2	78.67	112.33
Whiteman AFB MO	99-A	3	88.00	112.33
Whiteman AFB MO	99-A	1	87.00	112.33
Whiteman AFB MO	99-A	2	85.00	112.33

ALS Location	ALS Class Designator	Instructors who taught	3-Test Avg	PD Avg
Whiteman AFB MO	99-A	3	82.67	112.33
Whiteman AFB MO	99-A	1	74.00	112.33
Whiteman AFB MO	99-A	2	73.33	112.33
Whiteman AFB MO	99-A	3	82.67	112.33
Whiteman AFB MO	99-B	1	81.00	99.75
Whiteman AFB MO	99-B	2	75.33	99.75
Whiteman AFB MO	99-B	3	84.67	99.75
Whiteman AFB MO	99-B	4	86.33	99.75
Whiteman AFB MO	99-B	1	95.00	99.75
Whiteman AFB MO	99-B	2	87.00	99.75
Whiteman AFB MO	99-B	3	83.00	99.75
Whiteman AFB MO	99-B	4	80.67	99.75
Whiteman AFB MO	99-B	1	73.00	99.75
Whiteman AFB MO	99-B	2	87.00	99.75
Whiteman AFB MO	99-B	3	80.67	99.75
Whiteman AFB MO	99-B	4	85.33	99.75
Whiteman AFB MO	99-C	1	88.67	99.75
Whiteman AFB MO	99-C	2	84.67	99.75
Whiteman AFB MO	99-C	3	78.00	99.75
Whiteman AFB MO	99-C	4	76.00	99.75
Whiteman AFB MO	99-C	1	79.00	99.75
Whiteman AFB MO	99-C	2	84.33	99.75
Whiteman AFB MO	99-C	3	82.00	99.75
Whiteman AFB MO	99-C	4	83.33	99.75
Whiteman AFB MO	99-C	1	91.67	99.75
Whiteman AFB MO	99-C	2	88.33	99.75
Whiteman AFB MO	99-C	3	81.33	99.75
Whiteman AFB MO	99-C	4	87.33	99.75
Whiteman AFB MO	99-C	1	88.33	99.75
Whiteman AFB MO	99-C	2	96.67	99.75
Whiteman AFB MO	99-C	3	87.33	99.75
Whiteman AFB MO	99-C	4	81.33	99.75
Whiteman AFB MO	99-C	1	85.33	99.75
Whiteman AFB MO	99-C	2	89.33	99.75
Whiteman AFB MO	99-C	3	84.67	99.75
Whiteman AFB MO	99-C	4	83.33	99.75
Whiteman AFB MO	99-C	1	75.33	99.75
Whiteman AFB MO	99-C	2	85.67	99.75
Whiteman AFB MO	99-C	3	85.67	99.75
Whiteman AFB MO	99-C	4	90.33	99.75