

MAXIMIZING STUDENT LEARNING THROUGH
THE CREATION OF A POSITIVE CLASSROOM ENVIRONMENT

by

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ABSTRACT

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The ERAU Extended Campus has short academic terms, a multimodal delivery system, a highly mobile student body, and some 3,000 faculty teaching. They face a more challenging task of creating a positive classroom environment than most traditional universities and programs. The researchers sought to both assess the presence of a positive learning environment and to bridge the gap between the present EC classrooms and a "world class" learning environment. Five graduate and three undergraduate classes at six locations in three states in ERAU Southwest Region were sampled using a researcher-designed survey. Fifty-three respondents indicated that Embry-Riddle's Extended Campus is providing them a very positive learning environment, identified best-practices desired in the classroom environment, and offered constructive criticism. The researchers recommended that the ERAU EC Center for Teaching and Learning Effectiveness create a "positive learning environment" module based on this research for dissemination to all Extended Campus faculty.

Chapter I

Background

With a large, international student body of some 20,000 adult learners and almost 3,000 full-time and part-time faculty, Embry-Riddle Aeronautical University's (ERAU) Extended Campus constantly faces unique time, organization, and faculty development and training challenges. Utilizing a multimodal delivery system of classrooms, distance learning, and hybrids of those models, the Extended Campus exists primarily at night and on the weekends. Of necessity, classroom academic terms are eight or nine weeks, with two-to-five hour "blocks of instruction" the norm. Distance learning courses are normally 12 weeks long, and are primarily asynchronous. The researchers chose to look at the classroom portion of this multimodal delivery system, but will show that many of the tenets and components of positive "classrooms" also apply to distance learning delivery.

It is "almost intuitive" that positive learning environments provide students of all ages maximized opportunities for learning. The researchers sought to remove the subjectivity from that statement by conducting this research study to more scientifically determine the "truth" about how to create and maximize student learning in positive academic environments.

At this time in the history of ERAU's Extended Campus, the administrative and academic model for over 130 centers and teaching sites in the US and Europe has been extensively reorganized. Even though this reorganization is easily the most comprehensive in the 31 year existence of the EC, it also provides an opportunity to transform what many consider the premier aviation university in the world into a truly "world class" academy. One way this transformation from outstanding to "world class" might to happen is for the academy to develop and maximize positive learning environments for faculty and students alike.

The education and training literature speaks of learning, teaching, motivating, the education process, and positive learning environments from preschool through adult education. Not too amazingly, the core principles of positive learning environments (PLE) do not differ that much from "cradle to grave" applications, both in and out of traditional classrooms. While

classroom and distance learning each have their differences, they are easily more alike than different in PLE demands.

Faced with the same time challenges that characterize most large extended campuses, the researchers chose to concentrate on looking at classroom, rather than distance learning data. Working as a research “team”, they reviewed current PLE literature, developed a student survey, and chose a random and representative sample of undergraduate and graduate “adult learner” students across three states in the Southwest Region of the ERAU Extended Campus.

Assumptions and Limitations

The researchers were limited by a very small budget and time constraints which did not allow for a campus-wide population survey. They limited their sample to 53 undergraduate and graduate students in some six centers in three states. The demographic and PLE-experiential characteristics of this sample may not be representative of the international EC. While experienced as both aviation practitioners and adult learner faculty, with over 50 years of combined adult classroom experience, this was the initial formal research done by either researcher on creating a positive learning environment.

Chapter II

Literature Review

Introduction

The researchers began this research study by personally perusing the ERAU Hunt Memorial Library CD-ROM collection, requesting a literature review from the Hunt Library staff, and initiating a query with the *search.com* search engine. The literature review was confined to the past five years, and was principally limited to a review of the classroom environment. Distance learning environment literature was sampled, but this was clearly not the researchers' concentration. Following the literature review, the documents were reviewed and arranged into the following outline for this chapter: distance learning, motivating students, teaching, the learning process, learning styles, and positive learning environments. Following this outline, research questions are stated.

Distance Learning Environments

Longmire (2000), an instructional designer for an e-learning development firm, states that "object-oriented learning" facilitates competency-based learning, an adult learning tenet. Perhaps the greatest benefit that adults can derive from reusable learning objects (RLO) is through the timeless application of this knowledge in different situations. Likewise, classroom "building blocks" such as RLOs can facilitate additional learning and be used over and over again. It appears that E-learning programs utilizing RLOs can help create a positive learning environment.

The Alabama Center for Research on Online Learning (2003, p.1) indicates that the lack of adequately designed research does not allow rating online instruction as "better, or even the same, as traditional forms of classroom instruction." They also found that certain pedagogical practices, such as adequate and timely feedback, student-student and student-teacher interaction, and a safe and supportive climate for learning enhanced online learning. The researchers will show that these "best practices" of online learning also apply to traditional classroom settings.

The Department of Computer Science of the University of York (Na Ubon, 2003) presents the idea of the "online learning community" (OLC), wherein the use of community is seen as a

part of the change in paradigm of “teaching” to “learning.” They describe OLCs as virtual places, with formally and systematically organized learning environments. They see that the OLC connects the participants emotionally and socially, forming a sense of belonging to the community. This concept is seen by the researchers as also present in positive classroom learning environments.

From the three brief descriptions of online learning environments, the reader can see that many of the pedagogical tenets of creating a positive learning environment apply as much, or more, to online learning as well. The concepts of “reusable learning objects”, “best practices of online learning”, and “online learning communities” appear to have value for classroom applications as well.

Motivating Students

Davis (1999, p.1) indicates that, while some students are naturally enthusiastic about learning, many need their teachers to “inspire, challenge, and stimulate them.” Suffice it to say that teachers must at least maintain the level of intellectual curiosity and enthusiasm students bring to the classroom. According to Davis, researchers have identified aspects of the teaching environment that maintain and enhance students’ self-motivation, including the following:

- Give frequent, early, positive feedback that supports students’ beliefs that they can do well.
- Ensure opportunities for students’ success by assigning tasks that are neither too easy nor too difficult.
- Help students find personal meaning and value in the material.
- Create an atmosphere that is open and positive.
- Help students feel that they are valued members of a learning community.

Davis (1999) mentions that good everyday teaching practices are more important than directly working to enhance students’ motivation. She indicates that most students respond positively to a well-organized course taught by an enthusiastic teacher who has a genuine interest in his/her students and what they learn. The researchers wish to emphasize this continuing paradigm shift from teaching to learning.

As general strategies for motivating students (creating a positive classroom environment), Davis (1999) lists the following:

- Capitalize on students' existing needs.
- Make students more active participants in learning.
- Ask students to analyze what makes their classes more or less "motivating"

Eight characteristics from recent research emerge as major contributors to student motivation:

- Instructor's enthusiasm
- Relevance of the material
- Organization of the course
- Appropriate difficulty level of the material
- Active involvement of students
- Variety
- Rapport between teacher and students
- Use of appropriate, concrete, and understandable examples

Concluding her excellent paper on motivating students, Davis (1999) adds that faculty should: incorporate instructional behaviors that motivate students, structure the course to be motivating, de-emphasize grades, respond to students' work, and insist that students do the reading. The researchers wish to emphasize that motivating students is an integral part of creating a positive classroom environment.

According to Luce (2003), some adult learners, lacking study skills, struggling to work jobs, raise families, and deal with financial responsibilities and limited funds, are likely to perceive themselves as outsiders when they enter the teacher's world. Their social identity is challenged, their confidence shaken, and they do not usually realize that they have a right to ask for anything other than what they are given. These struggling adult learners have strong opinions about what they want from their academic experience. They want:

- Individualized instruction, based upon who they are
- Teachers who are real people and approachable
- To be challenged, not decimated

- Caretakers who check on them regularly, and support their individual learning
- Teachers who talk at their level, and who can joke and take a joke
- Clear, complete explanations and concrete examples (Luce, 2003, pp. 1-2)

There are basic principles of motivating learning that seem to exist in any situation. The basic learning principle involved is that success is more predictably motivating than failure (*General principles, 2003*). Included in the list of learning motivators are the following:

- The environment can be used to focus the student's attention on what needs to be learned.
- Incentives motivate learning.
- Internal motivation is longer lasting and more directive than is external motivation, which must be repeatedly reinforced by praise or concrete rewards.
- Learning is most effective when an individual is ready to learn, that is, when one wants to know something.
- Motivation is enhanced by the way in which the instructional material is organized (*General principles, 2003, p.1*)

Instructors must be skilled in assessing student readiness and progress, as learning produces some anxiety. Teachers must help students set goals and provide positive feedback, motivating through affiliation and approval, both strong motivators. Important considerations for faculty interested in motivating student learning are time, student and faculty attitudes, and specific motivational strategies (*General principles, 2003*).

Positive Teaching Styles

To help teachers establish a positive learning environment in the classroom, Povlacs (n.d., p.1), who works at the Teaching and Learning Center of the University of Nebraska-Lincoln, has come up with what she calls "101 things you can do the first three weeks of class." Her list is based on the concept that students will decide very early, possibly on the first day (or night), whether they will like the course, its contents, the teacher, and their fellow students (Povlacs, n.d.).

To start off right, and create a positive learning environment, Povlacs (n.d.) counsels that faculty should help students make the transition from their pre-course lives to their current course involvement. She considers directing students' attention important, especially when class begins and not everyone is ready to learn. Povlacs advises faculty to challenge students, then provide the support necessary for them to take up the challenge. Encouraging students through active, "hands on" learning is advised, and all activities mentioned above are designed to build a sense of community among the teacher and the students.

In selecting their teacher of the year for 2002, the Providence, Rhode Island school district chose a fifth grade teacher at Lima School (Clement, 2002). Mary Aquino-Dacy creates a positive learning environment in the classroom by making learning fun, being well-organized, and by always encouraging her students to be the best that they can be. Ms. Aquino-Dacy is described by Clement as putting her heart and soul into teaching. She has high expectations for her students, and encourages them to be big stars when they grow up.

This teacher of the year takes risks and is always trying something new in the classroom. She believes in teamwork, conferencing and collaborating with other teachers and staff. It has been noted that her students are happy to be there (Clement, 2002). She attempts to instill trustworthiness, respect, responsibility and fairness in her students. Her students work to their highest abilities, then they share and give assistance to one another as needed. It is clear to the researchers that Ms. Aquino-Dacy is adept at building a sense of community and family, and that her classroom environment tenets will work in higher education classrooms as well.

In developing a positive classroom learning environment, care must be taken to sustain the momentum gained on opening day. One way to achieve this continuing momentum is through the inquiry model of teaching and learning (Blasie, Milne, & Dai, 2001). These researchers used the Socratic, or inquiry method of teaching and learning, not only in the classroom, but amongst faculty and staff as well. They typically began with an initial question, then sought to answer this question from existing information (Blasie et al., 2001).

Armed with the information gathered, Blasie et al. (2001) then moved into a process of reflection and organization, so as to make sense of what they had gathered. Armed with the

results of reflection and organization, they went through a process of peer review before arriving at the completed body of work. In this manner, they were able to use the inquiry method in their research process, the classroom, and amongst their peers. The researchers view Socratic questioning, or inquiry-based teaching and learning, as a key element in sustaining positive classroom environments.

Learning and Teaching as a Process

To more thoroughly appreciate the process of teaching, learning, and evaluation, teachers should become familiar with what is commonly and incorrectly referred to as Bloom's Taxonomy. This taxonomy, derived from the need to determine what to evaluate, is organized along three dimensions: the cognitive, affective and psychomotor "domains" (*Learning domains*, 2003).

The cognitive domain is organized along three practical instructional levels: fact, understanding, and application (*Learning domains*, 2003). There is also a lower and higher order within this domain, with knowledge, comprehension and application "inferior" to analysis, synthesis, and evaluation (Bloom's taxonomy, 2002). While the cognitive domain appears to lend itself to a lecture and objective measurement paradigm, use of the Socratic, or inquiry method of teaching and learning is of much more value over time.

The affective domain pertains to faculty and student beliefs concerning teaching and learning (Bloom's taxonomy, 2002). Key words are awareness, distinction, and integration, by both faculty and students. Faculty should be aware of the dynamics of this affective domain in order to establish and maintain a positive classroom environment.

The third and last of the "Bloom's taxonomy" teaching and learning domains is the psychomotor domain (Bloom's taxonomy, 2002). This domain normally focuses on students producing products. Key concept words are imitation, practice, and habit. It is easy to see that in establishing a positive classroom environment from the start, it will be imitated by the students. Good learning tenets will become practice, and the strong sense of community established will become a habit, and will benefit both faculty and students in the future. Follow-on faculty will be

challenged to produce similar classroom environments or move on, and students will desire positive learning environments to keep their motivation and enthusiasm alive.

Interest in the material to be learned seems to be the best stimulus to learning (*The process of education*, 2003). In the process of education, teachers, not teaching tools or devices, are of principal importance. The first object of any act of learning is that it can serve our students in the present and future. More important than any acquisition of specific knowledge is the development of an attitude toward learning and inquiry. All of the aforementioned are integral parts of the process of education, or, better stated, of teaching and learning (*The process of education*).

Unless detail is placed within a structure, it will be quickly forgotten (*The process of education*, 2003). Students' views of the world are characteristic of their intellectual, psychological and social development, and teachers must base learning upon this precept. Learning is approximately three simultaneous processes: acquisition of knowledge, transformation to make it fit, and evaluation to see if it fits. In designing classroom environments, it is important to challenge, yet not diminish students' self esteem and motivation.

An arousal state somewhere between apathy and wild excitement is ideal for the aroused attention necessary to optimize the learning that might take place (*The process of education*, 2003). Films and visual aids may produce a more passive student who waits to be taught, instead of creating knowledge within him/herself. In the process of teaching and learning, the teacher is seen as an excellent communicator, role model and identification figure for the majority of the students.

In addition to the teaching and learning process of Bloom's taxonomy, and the general educational process "dos and don'ts" discussed above, the process of instructional systems design (ISD) is worth mentioning here. When attempting to create a positive classroom environment, an ISD flow through the needs assessment, objectives development, planning the instructional program activities, implementation of those activities, and evaluation of the program or course or class (Hiemstra, 2003).

In the slightly more sophisticated systems analysis model, the building blocks are need, objectives, constraints, capabilities, alternatives, analysis/selection of alternatives, selection criteria, development and pilot testing, and evaluation (Hiemstra, 2003). The feedback and modification loop is important for this model, as the system is rotated as needed while developing the program.

The Hiemstra and Sisco Individualizing Instructional Process model developed in 1990 follows these steps:

- Activities of various types are performed or designed prior to the first lesson with the learners.
- A positive learning environment is created throughout the learning process.
- An instructional plan is developed based on learners' needs and interests.
- Appropriate learning activities are identified.
- Learning is put into action and the process is monitored.
- Individual learner outcomes, as contracted, are evaluated (Hiemstra, 2003, p.2)

Adult Learning Styles

In understanding the establishment of a positive classroom environment, one of the last pieces of the puzzle is a look at adult learning styles, or the process of andragogy. Zemke and Zemke (1984, p.1) postulated some "30 things we know for sure about adult education". They sorted their list of 30 into three "things we know about groups": adult learners and their motivation, designing curriculum for adults, and working with adults in the classroom (Zemke & Zemke, 1984). The researchers find that their work is still relevant today.

Generally, adult learners are motivated to learn. Unlike their younger peers in residential campus programs, adult learners are self-motivated, and thrive on intrinsic, rather than extrinsic rewards. Course material must be relevant to the position adult learners see themselves in several years in the future. Adult learners thrive on Socratic discussion, interaction between themselves and the instructor and their classmate peers, and on their "hands on" interaction with class and course materials. Field trips to factories and places where their future lies are especially rewarding, and maximize learning opportunities.

In constructing a positive classroom environment for adult learners, focus on their years of experience and the wealth of information they bring to the classroom, not on the gaps in their knowledge (*Principles*, 2003). In the classroom, respect differing beliefs, styles, opinions, and work hard to protect minority opinions. The following short list is helpful:

- Use a variety of teaching strategies, especially for longer classes.
- Assess adult experience and learning needs early on, and make all material relevant, and based on those needs.
- Teach in shorter intervals, or teach interactively, but in no case, for more than 45-50 minutes.
- Work on building self-esteem, as adults are often “out of the box” just being in classrooms.
- Strive for mutual and individual inquiry, offering assistance as needed.
- Teaching to individual differences is especially important, as adult students may range from post-teens to grandparents.
- Always apply learning to a practical, rather than abstract, setting.

Felder (1996) indicates that students different learning styles must be understood, and that program, course and classroom design must take these difference into account. The Myers-Briggs Type Indicator (MBTI) model classifies students according to their preferences on scales derived from psychologist Carl Jung's theory of psychological types: extraverts, sensors, thinkers, and judges. Felder discusses Kolb's Learning Style Model, which classifies students along two continuums: concrete experience or abstract conceptualization, and active experimentation or reflective observation.

In the Hermann Brain Dominance Instrument (HBDI), students are classified into four different models based on the task-specialized functioning of the physical brain (Felder, 1996). These four models take into account the logical, emotional, analytical, quantitative, visual, etc. combinations that affect learning. Last, Felder looks at his own Felder-Silverman Learning Style Model, which classifies students as sensing, visual, inductive, active, and sequential learners. In these four models of individual learning style differences, Felder poses that teaching must be

performed to elicit learning, and that the adult learning style continuum is perhaps more complex than meets the eye.

Gardiner (1996) takes faculty to task in his paper on student learning and faculty teaching. He insists that faculty teach as they are taught, even though they are knowledgeable regarding principles of adult education. In one national study, he states that only 35 percent of the faculty strongly emphasized their institution's goals, only 12 percent utilized feedback from students, and only 8 percent used expert viewpoint. Involving students in discussion is a highly regarded and mentioned tenet of adult education, yet 70 to 90 percent of the faculty used traditional lecture as their primary instructional strategy.

In another study, Gardiner (1996) points out that the questioning of students comprised .2 percent to 9.2 percent of class time. In only .3 percent to 2.5 percent of class time, were students required to use the much more complex skill of evaluation. Only 17 percent of 1,700 faculty respondents at a research university said they used essay tests. Only 13 percent of their questions involved problem solving.

In rounding out this section on adult learning styles, the researchers feel it is appropriate to discuss active learning, as modeled by Fink (1999). In his Active Learning Model, Fink sees the need to move past passive learning, to active learning. In his model, he suggests that all learning activities involve some kind of experience or some kind of dialogue. He divides experiencing into doing and observing, and dialogue into self and other dialogue.

Creating a Positive Learning Environment

The State of Kansas is creating a positive learning environment by enhancing education through technology. The Kansas State Board of Education hopes to improve student achievement, enhance teaching quality, and reinvent the learning environment (*Responses*, 2003). They quote the National Educational Technology Plan, which states that the latest research and evaluation studies demonstrate that school improvement programs that employ technology for teaching and learning yield positive results for students and teachers (*Responses*, 2003). They feel that teachers who teach with classroom technology will be able to draw upon

extensive course content knowledge, pedagogical (andragogical) knowledge, in combination with technological knowledge.

Riley (2000) discusses the concept of creating a responsive or invitational learning environment to accommodate gifted and talented students. He sees that classroom environment created by both the teacher and physical classroom environment. Riley presents material from Maker and Nielson which describes this ideal classroom: learner-centered, teacher independent, open to new people, complex, open to acceptance, open to varied groupings, flexibly managed, and tolerant of mobility of movement, in and out of the classroom.

The researchers have presented a review of literature from distance learning environments, motivating students, positive teaching styles, learning and teaching as a process, adult learning styles, and creating positive learning environments. In all of these areas of literature review, the area with the fewest material was, unfortunately, the last area: creating positive learning environments. It could be successfully argued that by using distance learning technology's learning community approach, motivating students, adopting a positive teaching style, understanding teaching and learning as a process, and understanding adult learning styles, teachers will tend to create a positive learning environment.

Statement of the Research Questions

There were three research questions of great importance to this study. The first, and probably the most important, was: Does the ERAU Extended Campus provide adult learners with a Positive Learning Environment in the classroom? The second research question was: Which PLE elements are considered most important in the classroom? The last research question was: Which adult learning classroom environment elements detract the most?

Chapter III

Method

Research Design

With the usual limitations of time, funding and distance, the researchers chose a descriptive research model for this study. They collected informational data through a literature review and directly sampled adult student input through a survey. This study was conducted over some six months, three states, and seven adult education classrooms.

Population Sample

Conducted by two researchers over a six month period at two geographically separated locations, the sample for this study consisted of 53 undergraduate and graduate students in the Southwest Region of Embry-Riddle Aeronautical University's Extended Campus. Selected by cluster sampling, the 27 graduate students and 26 undergraduate students had an average age of 34. The 27 graduate students were all enrolled in the Master of Aeronautical Science Program, while the 26 undergraduate students were a mix of Professional Aeronautics (21), Aviation Maintenance technology (4), and Bachelor of Science in Technical Management Operations (1).

Only five respondents, or nine percent, were female. All students combined averaged six courses with Embry-Riddle, with a range from one to 32. On average, all students combined needed some 33 more hours to complete their degree programs. The average grade point average (GPA) of all 53 students was an amazing 3.75, which was startling to the researchers.

Data Collection Device

The researchers were unable to locate a suitable existing survey for this study, and consequently designed and developed a Student Learning Environment Survey (SLES), which is attached to this study as the Appendix. The SLES contains eight demographic questions, three Likert Scale items, a prioritized 26-item five-choice sort, and two open-ended questions at the end of the survey. The survey was pilot tested on a graduate class taught by one of the researchers, and changes were made to the survey.

The SLES was administered in class, at seven ERAU Extended campus centers in three Southwest Region states, over a 60 day period. Completion of the survey took approximately 15 minutes, and all surveys were filled out completely.

Chapter IV

Results

The respondents answered all three research questions through their cumulative survey responses. They overwhelmingly indicated that the Extended Campus of Embry-Riddle provides adult learners with a Positive Learning Environment in the classroom. They indicated which PLE elements are considered most important in the classroom. Next, they indicated which adult learning classroom environment elements detract the most. Last, they offered additional PLE observations and insights. The following portrayal of result data will begin with the three Likert Scale items on the SLES, present the prioritized PLE components, and then list the PLE detractors and other comments pertaining to maximizing the student learning environment.

Likert Scale Items

Item nine stated, "I am satisfied with the 'average' ERAU Extended Campus learning environment in my classes." The 53 respondents' average response on a seven point Likert Scale was 5.98/7, or a 85 percent rating. The graduate students' isolated response was 6.15/7, or a 88 percent rating. The undergraduate students' isolated response was 5.81/7, or a 83 percent rating.

Item 10 stated, "My ERAU professors work hard to provide me with a maximized learning environment." The 53 respondents' average response on a seven point Likert Scale was 6.10/7, or a 87 percent rating. The graduate students' isolated response was 6.46/7, or a 92 percent rating. The undergraduate students' isolated response was 5.73/7, or a 82 percent rating.

Item 11 stated, "Compared to other colleges attended, ERAU's Extended Campus provides a maximized learning environment." The 53 respondents' average response on a seven point Likert Scale was 5.86/7, or a 84 percent rating. The graduate students' isolated response was 5.87/7, or a 84 percent rating. The undergraduate students' isolated response was 5.85/7, also a 84 percent rating.

PLE Sort Items

Item 12 on the SLES stated, "Please arrange the following components of a positive learning environment according to your first priority, etc. Feel free to add other components that do not exist on this list." The items on the list consisted of 26 possible PLE components decided on by the researchers, as follows:

communication before class
clear academic goals
warm, caring instructor
great classroom
open discussion
challenging class/program
computers in the classroom
easy to understand syllabus
open communication throughout the class
accessibility to the instructor
academic support outside of the classroom
great classmates
great instructor
great personal growth
great class
feeling of belonging
feeling of "family"
great textbooks
fair testing and grading
adequate homework
great field trips
trusting environment
respecting environment
entertaining environment
humorous environment
instructor storytelling

The 53 respondents indicated that their choices for the "top five" components of a positive learning environment were as follows, based on a score of "5" for first choice, four for second choice, etc:

Great instructor	115
Clear academic goals	103
Challenging class/program	88
Open communication throughout the class	79
Fair testing and grading	61
Open discussion	60
Respecting environment	39
Great personal growth	33
Accessibility to the instructor	32
Warm, caring instructor	22
Great class	21
Academic support outside of the classroom	21
Entertaining environment	20

Trusting environment	16
Adequate homework	8
Great textbooks	8
Instructor storytelling	8
Feeling of belonging	7
Feeling of "family"	5
"Hands-on" training	4
Critical thinking skills	4
Humorous environment	4
Computers in the classroom	3
Easy to understand syllabus	3
Great field trips	3
Great classroom environment	2
Great classmates	2
Industry experience	2
Great syllabus and materials	1
Modern subject matter	1
Great oral communication practice	1

Re-sorting the PLE-Sort items into "human-centered", and "academic-centered" categories produced some very interesting results. Note that, while the "sort" was subjective, the "human-centered" items received 65 percent of the point total, while the "academic-centered" items received 35 percent of the point total.

Human-centered

Great instructor	115
Open communication throughout the class	79
Fair testing and grading	61
Open discussion	60
Respecting environment	39
Great personal growth	33
Accessibility to the instructor	32
Warm, caring instructor	22
Entertaining environment	20
Trusting environment	16
Instructor storytelling	8
Feeling of belonging	7
Feeling of "family"	5
Humorous environment	4
Great classmates	2
TOTAL:	503

Academic-centered

Clear academic goals	103
Challenging class/program	88
Great class	21
Academic support outside of the classroom	21
Adequate homework	8
Great textbooks	8
"Hands-on" training	4
Critical thinking skills	4

Computers in the classroom	3
Easy to understand syllabus	3
Great field trips	3
Great classroom environment	2
Industry experience	2
Great syllabus and materials	1
Modern subject matter	1
Great oral communication practice	1
TOTAL	273

Open-ended Questions

The SLES ended with two open-ended questions designed to elicit respondent comments regarding detractors from a positive learning environment and any other aspect of maximizing their student learning environment not covered. In response to question 13, "Please list all of the detractors from a positive learning environment that you have ever experienced, at any age, at all schools, it was interesting that 51 of 53 respondents listed detractors. A synopsis of question 13 responses is presented below. The detractors are grouped by subjectively-selected categories of detractors, with some noticeable overlap between categories.

Positive Learning Environment Detractors

Frequency

In-Classroom Detractors

poor or disruptive classmates	17
noise inside and outside the classroom	6
poor classroom environment	5
classroom interruptions	4
high student-teacher ratio	3
cell phones in the classroom	2
profanity allowed in the classroom	1
boring and unchallenging environment	1
dull class	1
boring distance learning course	1
negative people	1
student afraid to ask questions in class	1
TOTAL:	43

Instructor-based Detractors

know-it-all instructors	8
incompetent instructors	7
unprepared instructors	6
no/little student/instructor interaction	5
uncaring instructors	5
boring instructor	4
instructor wanders off the subject	3
poor teachers	3
one-way communication	3
instructor late	3
preferential treatment of classmates	3

storytelling not on course topic	2
poor instructor communication skills	2
no open discussion in the classroom	1
instructor mispronouncing words	1
closed-minded instructor	1
inflexible instructor	1
instructor not fluent in English	1
covering the same material over and over	1
not fulfilling student expectations	1
flight instructor teaching style	1
instructor profanity	1
tenured professors failing students	1
unfocused instructor	1
confused instructor	1
instructor expects too much	1
no out-of-class contact with instructor	1
different rules for instructors	1
lazy instructor	1
instructor prejudiced against women in aviation	1
instructor not interested in teaching	1
inadequate explanation of complex material	1
TOTAL:	73

Classroom Technology Detractors

classroom technology breakdown/obsolescence	3
training aids outdated	1
TOTAL:	4

Course or Class-Related Academic Detractors

poor textbooks	3
unclear course objectives	2
expensive textbooks that are not used	2
too much homework	1
rote memory tests	1
term paper/PowerPoint presentations in every class	1
term papers in technical courses	1
outdated course materials	1
unattainable course goals/assignments	1
homework for the sake of homework	1
bell curve grading	1
test on uncovered material	1
classes too long	1
poor syllabus	1
tests too difficult	1
unrealistic grading standards	1
too much travel time to class	1
classes too long	1
TOTAL:	22

Outside-Classroom Detractors

not enough time in the day	3
work detractors	2
outside detractors	2

TDY schedule

1

TOTAL

8

There were approximately 150 positive classroom learning environment detractors mentioned by 51 respondents, for an average of three per respondent. Of the 150 detractors mentioned, 73, or 49 percent, pertained to “instructor-based” detractors; 43, or 29 percent, pertained to “in-classroom” detractors; 22, or 15 percent, pertained to “course or class-related” detractors; 8, or 5 percent, pertained to “outside classroom” detractors; and 4, or 3 percent, pertained to “classroom technology” detractors.

The last question on the SLES asked students to feel free to comment about any other aspect of maximizing their student learning environment not covered so far. Twenty-nine of the 53 respondents, or 55 percent, offered additional comments. A brief synopsis of their responses is presented below, separated into positive and negative comments. The 35 separate comments were seen as 71 percent positive, 29 percent negative.

Positive Comments

enjoy discussing current trends in the course
enjoy discussing future developments in courses
courses should be demonstrative
good instructor professional experience
great instructors (2)
instructor professionalism
focused classroom environments
classroom interaction valuable
networking is great
interweave computers into the classroom work
caring instructors/professors
open class discussions
ERAU brings classes to you (on base)
stress computer skills
current events
effective and interesting coursework
instructors who are enthusiastic, passionate and mentoring
enjoyable/fun learning environment
comfortable learning environment—human factors designed
clear goals
clear objectives
caring instructor
computers in the classroom
class organization

Negative Comments

hate \$100 textbooks
not all students are the same; treat us differentially
give the ERAU faculty body an enema—flush out the poor ones

poor ERAU instructors—bottom of the barrel
more diversity needed in the classroom
poor center-to-center continuity for student advisement
let all ERAU students know of local job fairs, especially at ERAU residential campuses
loud noises distracting
Blackboard is NOT student friendly
Update textbooks to post-911

Results Summary

The 53 respondents, considered a small, but representative, sample from 58 percent of the centers in the ERAU Extended Campus Southwest Region, overwhelmingly indicated that the Extended Campus of Embry-Riddle provides adult learners with a Positive Learning Environment in the classroom. They indicated that great instructors, clear academic goals, challenging classes and programs, and open communication throughout the class were the four PLE elements considered most important in the classroom. Last, they indicated that poor or disruptive classmates, know-it-all instructors, and incompetent instructors were the adult learning classroom environment elements that detract the most. In response to the last question in the survey, the 53 respondents offered some 35 additional observations concerning PLEs, of which 71 percent were seen as positive, and 29 percent were seen as negative.

Chapter V

Discussion

Research Questions Answered

The 53 respondents answered all three research questions through their cumulative survey responses. They overwhelmingly indicated that the Extended Campus of Embry-Riddle provides adult learners with a Positive Learning Environment in the classroom. They indicated which PLE elements are considered most important in the classroom. Last, they indicated which adult learning classroom environment elements detract the most, and most offered additional observations concerning positive learning classroom environments. From the Likert responses, it was obvious that a small, yet representative sample of both undergraduate and graduate students in the Southwest Region of ERAU's Extended Campus felt that ERAU provides a positive classroom learning environment.

Likert Scale Items

In answering survey item nine which stated, "I am satisfied with the 'average' ERAU Extended Campus learning environment in my classes", the 53 respondents' average response on a seven point Likert Scale was 5.98/7, or 85 percent. Graduate students indicated a mean response of 6.15/7, or 88 percent, while undergraduate students indicated a mean response of 5.81/7, or 83 percent. It is apparent that both undergraduate and graduate ERAU Extended Campus students are satisfied that the university provides them with a PLE in the classroom. While the mean score of 5.98 can be considered a very positive indication, there is also obviously room for Improvement.

Survey Item 10 stated, "My ERAU professors work hard to provide me with a maximized learning environment". The 53 respondents' mean response on a seven point Likert Scale was 6.10/7, or 87 percent. The graduate students' mean response was 6.46/7, or 92 percent. The undergraduate students' mean response was 5.73/7, or 82 percent. Of the three Likert Scale items on this survey, this item had the most favorable response. On this item, the graduate students were significantly more satisfied with their instructors than the undergraduate students.

The researchers feel that enhancing undergraduate instructors' PLE-creation skills is the most significant effect of this research study.

Likert Scale item 11 stated, "Compared to other colleges attended, ERAU's Extended Campus provides a maximized learning environment". The 53 respondents' mean response on a seven point Likert Scale was 5.86/7, or 84 percent. The graduate students' mean response was 5.87/7, or 84 percent. The undergraduate students' mean response was 5.85/7, also a 84 percent rating. This Likert Scale item produced the lowest mean response of the three items. Unlike the other two items, both the undergraduate and graduate students' mean responses were practically identical.

PLE Sort Items

Of a possible total of 776 points, using a rating scale ranging from 5 points for selecting an item first, to one point for selecting it last, the top five items; **great instructor, open communication throughout the class, fair testing and grading, clear academic goals, and challenging class/program**, received a combined total of 50 percent of the points. It can be argued that, of these five, only "great instructor" pertains directly to the instructor. It can also be successfully argued that all five are closely tied to instructor-related variables, indicating, in both cases, that establishing positive learning environments in at least existing classrooms must be accomplished by the instructors.

Open-ended Questions

Question 13, "Please list all of the detractors from a positive learning environment that you have ever experienced, at any age, at all schools", produced some 150 PLE detractors from 51 of 52 respondents. While there were approximately 68 slightly or greatly different detractors mentioned, most detractors were people-centered, pertaining to people such as classmates or instructors. The top three PLE detractors mentioned were: **poor or disruptive classmates, know-it-all instructors, and incompetent instructors**. Most surprising to the researchers were the "top of the list" detractor, "poor or disruptive classmates", and the fact that nearly all (51/53) respondents took the time to write down a response to this question.

Discussion Summary

While the satisfaction with past and current Embry-Riddle positive classroom environments was appreciably high with both undergraduate and graduate students, the undergraduate students were significantly less satisfied with their instructors than the graduate students. Both groups of respondents offered insightful input when asked about detractors from PLE classrooms. Future research will involve looking at the difference between undergraduate and graduate respondents, between Extended Campus locations, and between military and civilian students.

Chapter VI

Conclusions

From the data gathered through the Student Learning Environment Survey, it was indicated that, overall, ERAU Extended Campus students from Southwest Region centers were very satisfied with their classroom environment. It was concluded that undergraduate students were significantly less pleased with their instructors' PLE skills. Respondents indicated that great instructors, clear academic goals, challenging classes and programs, and open communication throughout the class were the most important PLE components.

It was concluded that nearly all respondents had been exposed to PLE detractors somewhere in their academic preparation. PLE detractors mentioned most often were: poor or disruptive classmates, unprepared instructors, and incompetent instructors. It was also concluded that most of the PLE detractors mentioned were human-centered, with classmate and instructor detractors mentioned the most.

The researchers concluded that additional research in determining PLE indices and parameters is necessary. They intend to expand this research study into a more comprehensive and overarching research design.

Chapter VII

Recommendations

The researchers recommend that Embry-Riddle's Extended Campus fund additional PLE research. They recommend that the Faculty Senate Research Committee and the Center For Teaching And Learning Effectiveness (CTLE) be tasked to oversee this research.

The researchers recommend that immediate research be conducted to determine why ERAU EC undergraduate students are significantly less pleased with their instructors than graduate students are. Last, the researchers recommend that the basic thrust of this research study be expanded to look at : (1) additional undergraduate and graduate student PLE differences, (2) differences in PLE perception and satisfaction between military and civilian students, and (3) Extended Campus-wide PLE data.

In their review of current related literature and research, the researchers saw that an educational paradigm shift from teaching to learning has already begun. They recommend that ERAU provide this paradigm-shift training to all faculty, and especially to all EC adjunct faculty.

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APPENDIX

STUDENT LEARNING ENVIRONMENT SURVEY

Student Learning Environment Survey

For items 1 through 8,
either **Circle one of the answers provided** or **Fill in the blank**

1. graduate undergraduate
2. ERAU Academic program enrolled in: _____
3. Age: _____
4. Gender: _____
5. Number of courses taken with ERAU: _____
6. Semester hours remaining to degree completion: _____
7. Occupation: _____
8. Approximate ERAU GPA: _____

For statements 9 through 11, **CIRCLE A NUMBER** from 1 to 7 that **BEST DESCRIBES** your opinion or experience.

Completely Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Completely Agree
1	2	3	4	5	6	7

9. I am satisfied with the "average" ERAU Extended Campus learning environment in my classes. 1 2 3 4 5 6 7
10. My ERAU professors work hard to provide me with a maximized learning environment. 1 2 3 4 5 6 7
11. Compared to other colleges attended, ERAU's Extended Campus provides a maximized learning environment. 1 2 3 4 5 6 7

12. Please arrange the following **components of a positive learning environment** according to your first priority, etc. **Feel free to add other components that do not exist on this list.**

- communication before class
- clear academic goals
- warm, caring instructor
- great classroom
- open discussion
- challenging class/program
- computers in the classroom

easy to understand syllabus
open communication throughout the class
accessibility to the instructor
academic support outside of the classroom
great classmates
great instructor
great personal growth
great class
feeling of belonging
feeling of "family"
great textbooks
fair testing and grading
adequate homework
great field trips
trusting environment
respecting environment
entertaining environment
humorous environment
instructor storytelling

A. 1st choice: _____

B. 2nd choice: _____

C. 3rd choice: _____

D. 4th choice: _____

E. 5th choice: _____

13. Please list all of the detractors from a positive learning environment that you have ever experienced, at any age, at all schools:

14. Please feel free to comment about any other aspect of maximizing your student learning environment not covered so far.
