

Lawrence Central High School

System Alignment Project
Student Tardies

Report prepared by
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April 7, 1997

Introduction

The Total Quality Improvement (TQI) Certificate Program offered through Indiana University's (IU) Division of Continuing Studies, consists of five core courses representing 84 hours of instruction. One of the requirements of the TQI Certificate Program is for participants to apply the quality theory, process, and tools to a specific project. Students have the option of selecting an Alignment (Standardization) or Improvement Project using support guides developed by Productivity Quality (PQ) Systems of Dayton, Ohio.

Mr. Tom Weakley, Director of Human Resources for the Bindley Western Corporation, while as a student and now a graduate of the TQI Certificate Program, in partnership with the faculty and staff of Lawrence Central High School, applied the quality principles to the issue of students arriving late to school/class. The alignment process was used to document the existing system. Tim Clark is an instructor in the IU TQI Program, serves on the Executive Committee of the Indianapolis Section of the American Society for Quality Control (ASQC), and is the program coordinator for the Indianapolis Quality Leadership Initiative.

Koalaty Kid

The IU TQI Certificate Program was developed in alliance with the Indianapolis Section of ASQC and Productivity Quality Systems. ASQC provides trainers and offers a support network consisting of quality practitioners who represent a wide variety of industries and professions. PQ Systems has developed a Total Quality Transformation (TQT) training system that is being used successfully by colleges and organizations throughout the world. The National Office of ASQC and PQ Systems has also jointly developed a program specifically designed for Education (K-12). This program is referred to as Koalaty Kid.

American Society for Quality

ASQ is a society of individual and organizational members dedicated to the ongoing development, advancement and promotion of quality concepts, principles and techniques. The Society serves over 130,000 individual and 1,100 corporate members. Virtually every significant initiative of the American quality movement can be traced to the Society and its members.

The Indianapolis Section was one of the founding members of ASQ and has been providing quality leadership throughout the Indianapolis community since 1944. For more information about ASQC, call (800) 248-1946 or through the internet via www.asqc.org or www.indyasq.org.

Indianapolis Quality Leadership Initiative

The Indianapolis Section of ASQ provides free quality improvement seminars and workshops through the Indianapolis-Marion County Public Library to support people that want to learn and/or apply the quality theory, process, and tools. To register, contact the Library at (317) 269-5209. Program brochures are available at all Library locations. For more information or if you are interested in volunteering a few hours a year to support this initiative, contact Tim Clark at (317) 897-6246 (email: tjclark@aol.com).

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BACKGROUND INFORMATION

AREA OF OPPORTUNITY

In August 1996, Lawrence Central High School presented a School Improvement Action Plan for the faculty. One of the target goals focused on student citizenship and encourages students to become more responsible and self-directed. As part of this goal, emphasis was placed on reducing the number of tardies to class.

REASON FOR SELECTION

This targeted goal, reducing tardies, is one which has not been previously studied and a wealth of computer generated data is available. It is an ideal project for analyzing the current process of “tardies” and providing a baseline to measure the results of initiatives to improve the process and reduce the number of students late to class.

TEAM MEMBERS

Jane Bird	Media Specialist
Richard Crowder	Business Instructor
Dorothy Root	Computer Services
Carol ODonnell	Information Management Support

TEAM SPONSOR

Mary Ann Burden	Assistant Principal
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SYSTEM SELECTED FOR ALIGNMENT

The system for documenting, recording, and processing tardies.

Define the System

1. System **NAME**: Recording and processing tardies at Lawrence Central High School (LCHS)

2. System **CUSTOMERS**:
 - Direct*: Students and teachers in each class

 - Indirect*: Student body at LCHS, teachers, parents, professional accreditation agencies, School Board.

 - Internal*: Administration and Staff

3. Customer **NEEDS**: Develop good habits and improve self-directed behavior by being on-time to class.

4. System **PURPOSE**: To assist students develop a sense of accountability and responsibility

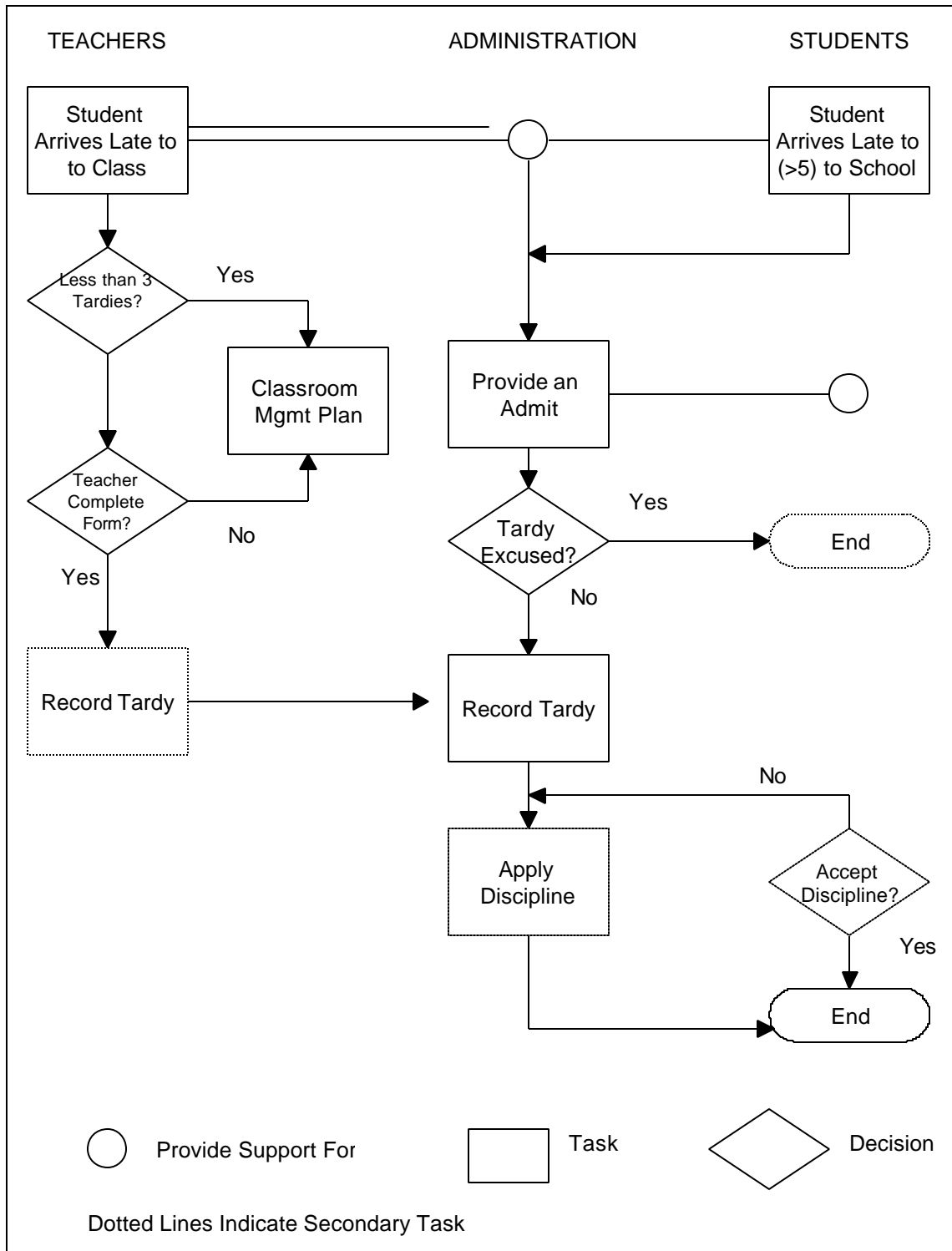
5. System **OUTPUT**: The number of students on-time or late to class.

6. Customer **EXPECTATIONS**: Students arrive to class on-time and ready to learn.

7. **RESOURCES**:
 - a. Materials: School Services Handbook (1996-97), Behavioral Conduct Report (BCR)
 - b. People: Students, faculty, staff, parents and administrators.
 - c. Environment: Well equipped for educational opportunities, excellent state of the art facility.
 - d. Equipment: Computers, database, school busses providing safe and dependable transportation to school.
 - e. Information Aids: School policies, Individual Classroom Management Plans.

Document the Process

LAWRENCE CENTRAL HIGH SCHOOL TARDY REPORTING PROCESS



Design the Measurement System

1.0 OUTPUT INDICATOR 0₁ Total Number of Tardies

2.0 PROCESS INDICATORS n/a

3.0 DATA GATHERING PLAN:

WHAT DATA	HOW	HOW MUCH	HOW OFTEN	WHERE	WHO	METHODS
Measure #1: Tardies	BCR Form is completed; Data is entered into the computer	100%	Weekly	Office	Teacher, Counselors, Support Staff	BCR Form, Computer

OPERATIONAL DEFINITION

Quality Measure: 0₁

1. Characteristic of Interest: Tardies
2. Measuring Instrument: BCR Form, Computer
3. Method of test: The LCHS Student Services Handbook provides the policies and procedures that define the circumstances and consequences for students arriving late for class (appendix A). The LCHS Administrative policies and procedures provides guidelines for the development of the Teacher’s Classroom Management Plans as to how each teacher will support the school goals in ensuring students arrive to class on time and ready to learn.
4. Decision Criteria. A tardy is recorded when a student has an unacceptable reason for being more than five minutes late for school and/or class.

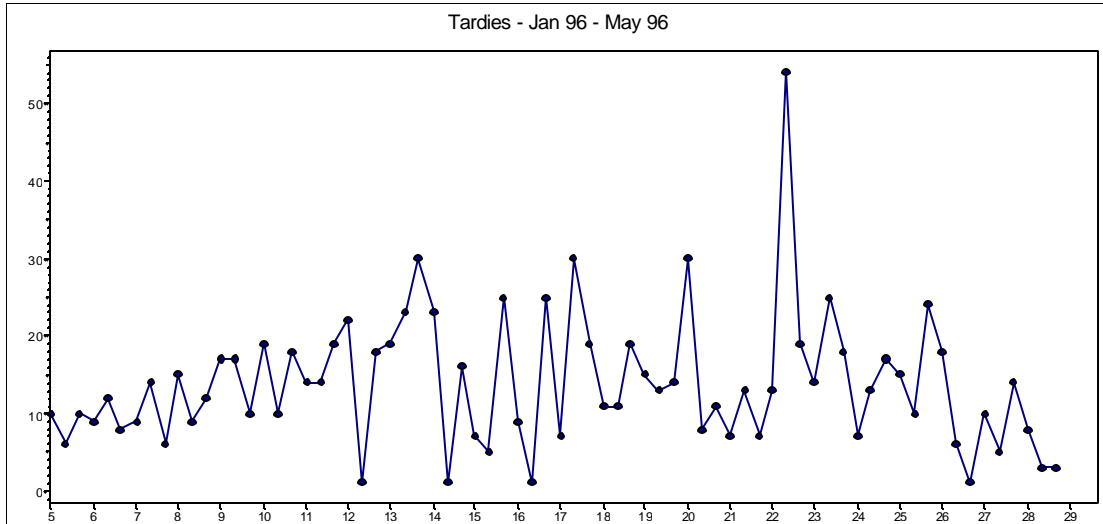
Information to Support Future Improvements

Appendix B provides a summary and additional analysis of the information that was obtained from computerized records relating to the issue of tardies. This information may be helpful for future improvements.

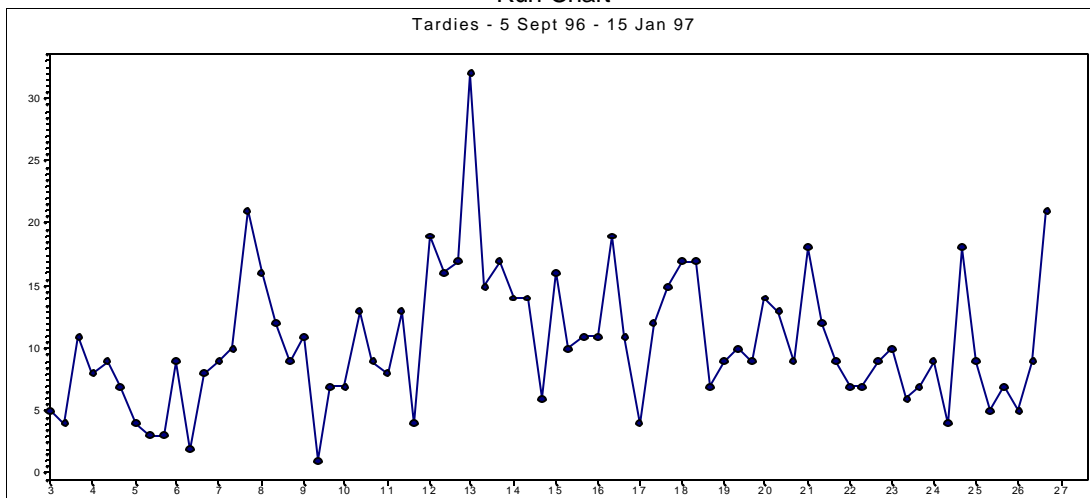
Operate the System

OUTPUT MEASURE

Spring 96 Semester -- Total Tardies Per Day
Run Chart



Fall 96 Semester -- Total Tardies Per Day
Run Chart



SYSTEM ALIGNMENT

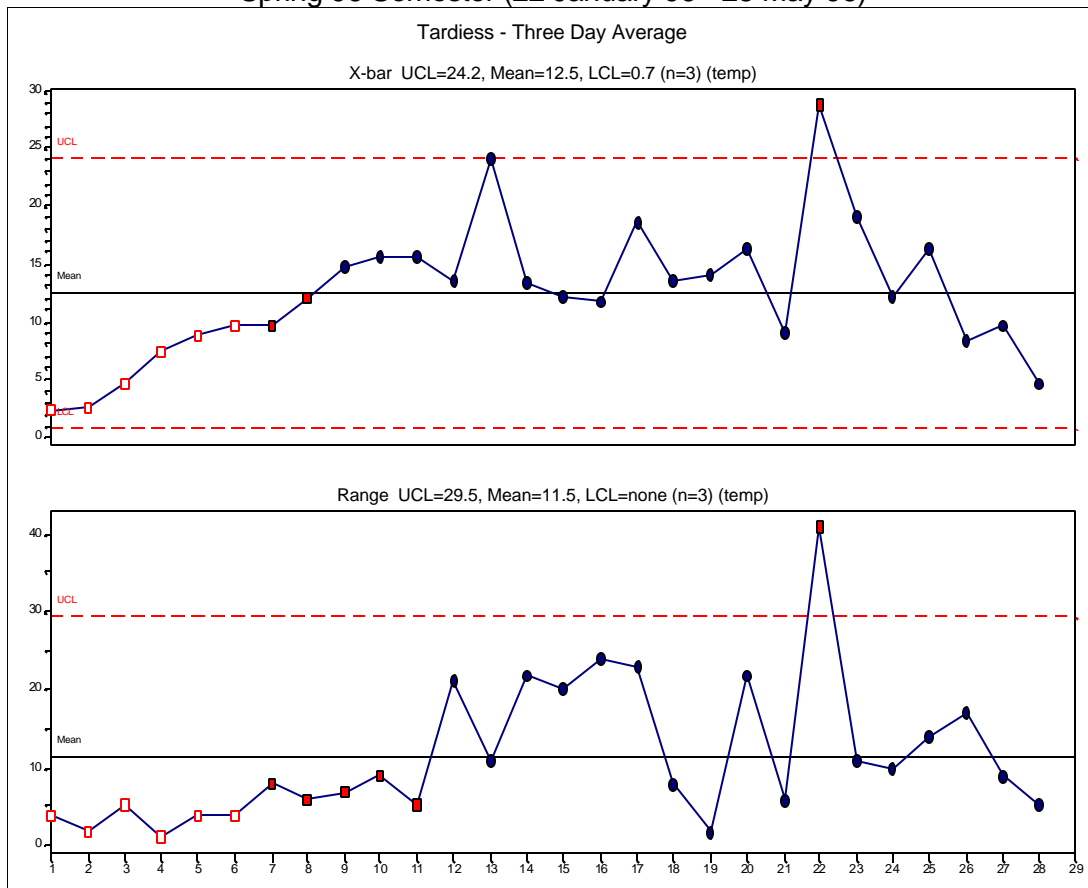
INSTRUCTIONS

<u>Item</u>	<u>Measure</u>	<u>Reference Document</u>
1. Record Tardies ¹		BCR Form
2. Enter Tardies into Computer		Computer instruction manual
3. Print Reports	01	Computer instruction manual
3. Update Control Chart	01	PQ Systems Pocket Tools

Study the System

OUTPUT MEASURE

Behavior-Over-Time (Control) Chart²
Spring 96 Semester (22 January 96 - 28 May 96)

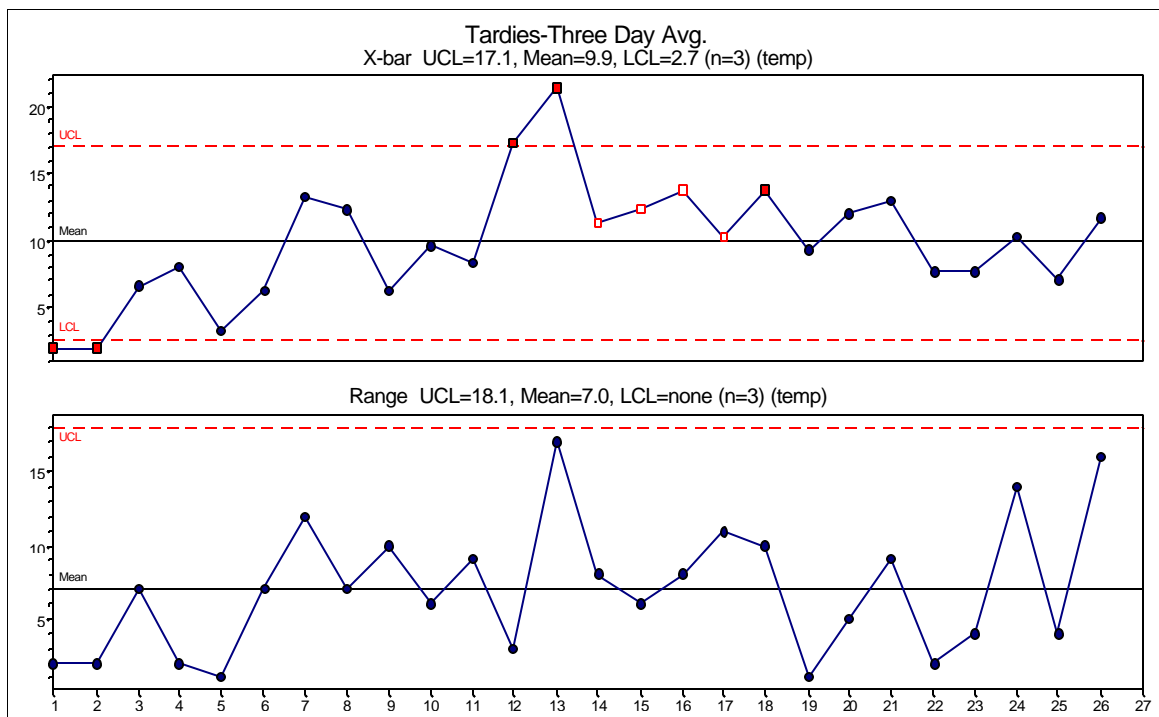


¹ No tardies are recorded for the first week of each new semester. This will allow students an opportunity to become familiar with their new class schedules. All teachers are reminded that their individual Classroom Management Plans must operate within the school's policies and procedures. The need for consistency throughout the school is emphasized.

² The daily number of tardies were consolidated into subgroups of three. The average for the subgroup was then calculated and plotted on the control chart. The top chart records the subgroup average. The bottom chart records the differences or range, between subgroups. Appendix B provides a brief introduction to control charts.

SYSTEM ALIGNMENT

Behavior-Over-Time (Control) Chart Fall 96 Semester (5 September 1996 - 15 January 1997)



Stabilize the System

A comparison of the two semesters indicates that the three day average number of tardies decreased from 12.5 to 9.9 for a decrease of 2.6.

The process was statistically unstable for both semesters as determined by criteria outlined in Appendix C.

1.0 Study Special Causes

This project was begun during the Fall 96 Semester with the intent of assessing system stability based on Spring 96 semester data. At the request of the LCHS Assistant Principal, the datum on the number of tardies for the Fall 96 Semester were also added to the project to determine the effects of improvement initiatives.

Actions on special causes are taken by the people closest to the process at the time the special cause occurs. A special cause could include an accident, closed roads due to weather, etc.

Spring 96 Semester. During the start of the semester, the number of reported tardies trended upward seven points in a row. On Wednesday, May 1, 54 tardies were reported which resulted in the three day average exceeding the upper control limit. No particular cause was assigned to the reason for the 54 recorded tardies.

Fall 96 Semester. At the beginning of the semester, two data points fell below the lower control limit (which is good) and points 12 and 13 exceeded the upper limit (not so good).

2.0 Act on Special Causes. During the fall semester, counseling teams were formed to work with incoming ninth graders to emphasize individual responsibility and the importance of arriving to class on time.

Plan for Improvement -- Alternatives.

Typically, there are two general course of actions involved in any continuous improvement initiative. These are alignment or standardization and improvement. Improvement represents either incremental (evolutionary) change or radical (revolutionary) change.

Alignment or Standardization. The faculty and Staff at LCHS can choose to monitor the existing system by “plotting points” (appendix D), investigating special causes when they occur and then taking appropriate action.

Improvement. The alignment process documented the existing system and provides a baseline from which future improvements can be evaluated. ASQC’s Koalaty Kid Alliance provides support for schools that are interested in making system improvements.³ The Alliance links an ASQC Section and a Business Partner with the school. The respective business and ASQC provides funding and technical support and the school is responsible for providing a sponsor, facilitator, and improvement team.

Concluding Remarks

The principles and methods of continuous quality improvement represent an improved approach for solving problems, making decision and achieving goals. It was estimated by Dr. W. Edwards Deming that 95% of changes made by process owners using traditional methods result in no improvement. Application of the quality theory, process and tools helps to ensure the majority of changes due result in improvement.

³ Improvement Guide for Education (K-12). Steps include: Define the System, Assess Current Situation, Analyze Causes, Try Out Improvement Theory, Study the Results, Standardize Improvements, Plan Continuous Improvement.

Excerpts -- LCHS Student Services Handbook

The following excerpts from the LCHS Student Services handbook, page 16-17.

Almost all tardiness is avoidable. One of the excellent features of this building is the ease of student traffic. A student is tardy at the beginning of the period if he/she is not in their seat when the signal sounds.

Tardy to School. Anytime a student is late to school more than five (5) minutes he must report to the attendance office for an admit. Every unexcused tardy to school of more than 5 minutes after the third tardy will be considered a disruptive tardy and the appropriate consequence will be applied. A student who is late to school less than 5 minutes may go directly to class without an admit from the dean's office.

Tardy to Class. If a student is tardy to first period class (less than 5 minutes) or between classes, he will go directly to his class without a tardy slip and be admitted as unexcused, unless he has been detained by another faculty member. In this case, the faculty member must give him a note to present to his next teacher. If a student is tardy to school after the first period, he must report to the attendance office. **A student who enters (unexcused) his assigned classroom or activity more than five minutes late will be given a disruptive tardy. A disruptive tardy is a major and requires a Saturday school.**

Student must realize that UNEXCUSED tardiness will naturally detract from the grade for the class.

Appendix B

Fact Sheet - Additional Information

	Spring 96 Jan-May 96	Fall 96 Sept-Jan 97
Total Number of Tardys	1049	780
Total Students Tardy	410	382

Table 1

Spring 96 Total Tardies by day of week	
Mon	217
Tue	168
Wed	255
Thu	224
Fri	182
Sat&Sun	3
Total	1049

Table 2

Table 1 Narrative Example: During the spring 96 semester, a total of 410 students were tardy and a total of 1049 tardies were recorded. Table 2: The number of total tardies during spring 96 semester (1049) by day of the week.

Recorded Tardys by Class					
Tardys by Class	Spring 96			Fall 96	
	No. of Students	Total Tardys	No. of Students	Total Tardys	
9	3	6	114	230	
10	123	291	107	222	
11	114	285	90	214	
12	101	301	71	114	
AG	69	166	0	0	
Total	410	1049	382	780	

Table 3

Table 3 Narrative Example: During the Fall 96 semester, grade 9 accounted for 230 of the 780 recorded tardies.

No. tardies per student:	Tardy Frequency			
	Spring 96 Total Students	Spring 96 Cum Tardys	Fall 96 Total Students	Fall 96 Cum. Tardys
1	186	186	197	197
2	84	168	88	176
3	43	129	49	147
4	29	116	23	92
5	24	120	10	50
6	15	90	5	30
7	14	98	4	28
8	7	56	2	16
9	4	36	0	0
10	1	10	1	10
11	1	11	2	22
12	0	0	1	12
13	1	13		0
16	1	16		
19	0	0		0
Total	410	1049	382	780

Table 4

Table 4 Narrative Example: During the spring 96 semester, 186 students only had one recorded tardy. One student had 16 tardies.

Appendix B

Number of Teachers Recording Tardies and the Quantity Reported					
Spring 96			Fall 96		
Total Tardys Reported:	No. of Teachers	Tot Tardys	No. of Teachers	Total Tardys	
314	1	314	0	0	
40-50	2	82	1	50	
30-39	3	103	2	71	
20-29	1	21	5	121	
10-19	21	287	18	230	
5-10	24	159	34	225	
1-4	47	83	41	83	
Total	99	1049	101	780	

Table 5

Table 5 Narrative Example. During the spring 96 semester, 99 teachers reported tardies. One teacher recorded 314 tardies and 47 teachers recorded between 1 and 4 tardies.