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# Litchfield Senior High School Guide for Computer Scheduling

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LITCHFIELD SENIOR HIGH SCHOOL

GUIDE FOR COMPUTER SCHEDULING

(TITLE)

BY

Farrell Flatt

**THESIS**

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF

Specialist Education Administration

IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY  
CHARLESTON, ILLINOIS

1976

YEAR

I HEREBY RECOMMEND THIS THESIS BE ACCEPTED AS FULFILLING  
THIS PART OF THE GRADUATE DEGREE CITED ABOVE

April 22, 1976

DATE

ADVISER

April 22, 1976

DATE

DEPARTMENT HEAD

## INTRODUCTION

This paper is written for the dual purpose of being a guide for the scheduling process at the Litchfield High School and as a paper for credit for Eastern Illinois University courses, Education Administration 6910 and 6920. The emphasis of this paper is concerned with setting an accurate procedural method of scheduling at Litchfield High School and/or other schools of similar size.

In no way does the author claim this method is best for all schools. It has worked successfully for Litchfield High School.

The scheduling process involves each staff member and department with their inputs toward curriculum, sequence of courses, and material taught within the course.

The Litchfield Junior High principal is brought into the planning including course description, content, and sequence of material taught. He is involved in the planning and development of the total schedule due to his part with the management team, and the fact that individual teachers and classrooms are shared between the Junior and Senior High Schools. Rationale for changing from hand (individual) scheduling to a computer (mass) method of scheduling

The Litchfield High School had several reasons for moving from hand to computer scheduling. (A) The Board of Education has made the high school into a four (9-12) year school. The basic reason was to allow freshmen to participate in extra-curricular activities--boys and girls athletics, musicals and plays, and in the marching band and chorus. This allowed for a greater number of students to be scheduled into the tradi-

tional Litchfield High School classes. This also produced an influx of sophomores taking freshmen courses.

(B) The Board of Education, at the request of the 1973-74 faculty, voted to change to a seven-period day. This dropped a 1957 policy of a six-period student day. This change allowed students an opportunity to add to their schedules. The staff has encouraged the students to carry extra courses. It has also created 1/7 additional problems in scheduling.

(C) Perhaps the biggest reason for dropping the manual method was the 1973-74 faculty recommendation for physical education classes to segregate by class as well as sex (9 through 11).

Senior physical education classes are co-ed. The physical education breakdown by classes is as follows:

Freshmen boys	1st and 2nd hours	Full year
Freshmen girls	2nd and 3rd hours	Full year
Sophomores	2nd and 3rd hours	One semester
Juniors	1st and 7th hours	Full year
Seniors Co-ed	4th and 6th hours	One semester

The State of Illinois requirement for Health Education and Safety Education is being met. Sophomores attend physical education one semester and safety education one semester (nine weeks driver education and nine weeks safety education). Senior physical education meets one semester and senior health (graduation requirement) occupies the other semester. In addition to meeting the state requirement, Litchfield High School has reduced the physical education class size from the eighties to between twenty-five and forty-five.

Reducing physical education and adding the health education has resulted in a difficult job of student scheduling. In the past, Litchfield

scheduled students into any physical education class; now, with a definite physical education program for each class, additional scheduling problems have been created. Computer scheduling allows a comprehensive, fast method of scheduling for all extra problems.

(D) In 1970-71, Litchfield High School broke the tradition of English I, II, III, and IV. Eighteen semester length classes are offered in place of English III and IV.

(E) While the student enrollment has remained stable for the Litchfield school district, the scheduling problems have expanded during the last few years. Courses have been added, changed, and a few dropped or replaced. Full year courses, Electronics I and II, Auto Mechanics II, Building Trades, Metal II, Drafting II, Spanish III and IV, and French III and IV, have been added. Semester courses in Consumer Education, Psychology, and Modern Day Problems were added. The nine week Freshmen Orientation course was added in 1971-72 to give an introduction to the vocational program. The student alternates classes each nine weeks between the four classes--Drafting, Wood, Electricity, and Metal. Latin I, II, and III were dropped and others have changed from Home Economics I, II, III, and IV, and Agriculture I, II, III, and IV to different course names (i.e.: Child Care, Foods I and II, Sewing I and II, Family Living, Small Business Management, Plant and Soil Management, and Farm Management and others of similar nature). Many of the changes were of a semester time span.

With the new class changes and the addition of the Freshmen class, the time and energy spent by the office staff, teaching staff, counsel-

ors, and principal would become so time consuming that the normal work load could not be continued without serious results to the normal functions of the school.

For the reasons listed above, the Litchfield Board of Education decided in the winter of 1974 to contract with the Paducah Unit Schools, Computer Center, Board of Education, Paducah, Kentucky.

The remainder of the paper is concerned with the scheduling process including student information, counselor duties, first-run data, curriculum planning, second-run data, final run, and cost factors. The third section of the paper is concerned with the Principal's duties and the time sequence for the total scheduling pattern, and what I have gained from this function. The final chapter will summarize the paper for the reader.



## CHAPTER TWO

### THE SCHEDULING PROCESS

This chapter deals with the different areas of concern during the scheduling functions. The reader should note that a lot of staff involvement is related and is extremely necessary for a smooth, durable scheduling act.

Several functions are required prior to the student registration. Teacher input is needed in each of the following areas: (Appendix 1)

1. Classroom Size

- a. Maximum number of students per each different class
- b. Desired number of students per each class section
- c. Determine if the class is suitable for study halls.  
(The classroom would need to have 25 to 35 chair spaces.)

2. Determine the required material, lab spaces and/or material on hand and needed for maximum and/or desired classes. (Staff was given a class count as soon as the first run was returned to Litchfield High School in order to purchase their materials for the following year. This will give the teachers a rough idea as to their class load for the coming year. This information was given to the teachers during April.)

The teacher has another important registration function in the development of the course description. This would include reviewing the course work to be covered within the class and the total department. Each department must see that a logical sequential pattern is followed without gaps or overlap in material.

Changes may be initiated by staff or administration, but agreement must be reached on all fronts. This program is started around the beginning of the second semester (middle January). All changes involving staff



additions will need Board of Education approval. The Superintendent of the unit is kept aware of all progress and problems with weekly meetings on scheduling. The Junior High Principal, Bill Sielschott, and high school counselors are also kept in complete knowledge of all situations.

Each teacher is responsible for the ordering of his or her teaching supplies and materials for the coming year. The budget is developed in March, and the purchase orders are due in May of the prior school year.

#### Student Information

Gathering student information is the heart of any scheduling procedure. Litchfield uses a schedule form (Appendix 2) which has been modified to fit our school system's needs. It is a standard school form which includes the student's name and a corresponding student number. The number stays with the student during his four years of school. New students, including freshmen and transfers, must be assigned a number by the principal's office. We gap our students as freshmen by four numbers in order to be able to insert transfers in alphabetical order. The student number is a seven figure number beginning with three digits (910). The first three digits represent Litchfield High School's code number. The next four digits will represent the student's name in alphabetical order.

The birthday information is used for those students selecting driver education. Litchfield students are scheduled by age, both in the classroom and behind the wheel.

The grade and sex of students are listed to determine physical education and the girls' choir classes.

The students select their courses to be taken after having one week to consult with their parents, friends, and school employees. After the

student turns in his course selection, the principal and guidance counselors review each course program to determine errors and/or poor course selection. In the case of possible poor course selection, the student is called in to confer with the counselor to determine the best solution to each problem. Each student is asked to select alternate subjects in case of subject conflicts. This allows counselors and guidance people to make schedule changes without consulting with all students. Of course a conference with some students will be necessary after the original scheduling.

#### Counselor's Duties

The counselor is a key person for assisting students with scheduling of classes. The counselors, in their original explanation, go through the course description (Appendix 3), the proper way to read it, and the sequence of certain subjects. Each student is called to a class meeting with both counselors, principal, and all available teachers present.

Next, the school and state requirements are explained. (Appendix 2) Litchfield High School requirements are the state minimum.

Physical safety and health education	4 years
English	3 years
Science	1 year
Math	1 year
U. S. History (including the State and Federal Constitution exams)	1 year
Consumer Education	1 semester

Each class is reminded of its particular requirements. Freshmen must take and pass English I, a science course (biology or physical science), math (algebra or general math), physical education, and safety education only if he is old enough. Sophomores must take English II or

English II-C, safety education and health (nine weeks each), and one semester of physical education unless they have had safety education as a freshman, in which case they must carry two semesters of physical education. Juniors must carry U. S. History, two mini-English courses, and physical education. Seniors need one semester of consumer education, one semester of physical education, and one semester of health education.

Each student is required to carry four subjects and physical education and/or health.

Freshmen are eligible for the 100 level classes. Sophomores may carry 100 and 200 level classes. Juniors may sign up for 100, 200, and 300 level classes. Seniors may take all classes, including the 400 level classes. Exceptions may be granted, but only by the instructor and principal.

Extra care must be taken in safety education (including driver education) because of the age requirement. The older students are able to take driver education and sophomore health the first semester and physical education the second semester. Some sophomores will attempt to place themselves in the wrong section. Counselors and the principal check this item against the birthday on the front page of the registration form. An added problem is in the years difference in birthdays (i.e., freshmen who have a January 5, 1950, vs. a sophomore who has a June 5, 1951, birthday). This can become confusing when the counselor works with 185 sophomores and some 20 freshmen plus transfers and drop-outs. (Drop-outs are eligible to take driver education with the school system according to state law.)

As students meet with their counselor or principal the following week, the counselor/principal meets with the student and does a brief

overview with the student to determine if he has met all requirements for classes taken and checks against the failure list to determine if any make-up classes are necessary.

The total student data are collected and compiled on additional sheets (Appendix 2) for the computer to develop the first run. This takes about two minutes per student.

The computer will return a conflict sheet showing class counts and where students may conflict with other sections. (Appendix 4) The conflict matrix is most helpful in doing the master schedule for the high school. The conflict matrix must be studied and detailed information gathered from it. For example, English I, English 100, will show total students and what conflicts with the required course. Each course will show the number of conflicts with each other.

Utilizing the matrix can allow the principal and counselors to draw a temporary master schedule to start the first part of the computer's second run. The master schedule is drawn up to avoid as many conflicts as possible. The single and double section classes must be given special attention to avoid conflicts. For anyone new in reading the conflict matrix, he/she should spend some time studying the computer print-out before attempting to do the master schedule.

For students who register late, Litchfield uses a form (Appendix 5) to add or drop classes throughout the registration period. A new addition would simply add classes with no drops. Students wanting to change, for whatever reason, would include courses to be dropped, courses to be added, and the personal information on name, sex, class of 19--, and the student



number. Students who notify the school that they are moving or dropping can be dropped by the drop/add form. This process can continue until the final run.

Counselors and mostly the principal will do some hand scheduling for late enrollees and students who have a conflict of this nature (i.e., Physical Education 391 may need to be split at the semester from first to seventh hour. The computer cannot do this under the present procedure). The principal will do most of the drops and add scheduling due to the counselor not being on hand during the summer. The counselors will do most of the late scheduling after school starts. Litchfield had twenty-four late enrollees by the second week of school.

The counselor or principal reads each student's sign-up schedule for errors, conflicts, mis-enrollment and course content before this material is sent to the computer for the course matrix. Each student course selection is either approved or rejected until a counselor conference. After the student-counselor conference, the change is made, corrected or left the same prior to the student-counselor conference. Common errors found included the following: (a) wrong section of driver education; (b) wrong section of physical education; and (c) selection of vocational courses in which the student has little or no background. Student errors were not common, but need to be caught as early as possible. All students' scheduling forms are run in a background check to make sure that they are scheduled in all graduation required classes. This is done the second week of the summer. Failure lists are checked at this point for the student.

### First Run Data

The first run data takes about two weeks for the round trip although less than two hours of computer time. The computer stores all information on tapes; therefore, all written materials are returned to Litchfield to be used during conflict scheduling. Computer print-out sheets on each class (Appendix 6) gives the total section enrollment. A separate print-out sheet listing each class section gives the name of the student, the year of school, and class period. (Appendix 7)

The conflict matrix is returned in the form of another print-out sheet. By using the three forms, the principal develops the master schedule.

Litchfield involved Mr. Roper, Guidance Counselor, and the principal in developing the master schedule. After careful study of our present needs and conflict matrix, we proceeded to develop a temporary master schedule for the second run. (Note--the second run can be run as many times as needed. Litchfield made five second runs.)

During staff reviews, all committees agreed that the physical education policy should be kept as in 1974-75. This was used as a basis for starting the temporary master schedule. The physical education, safety education (nine weeks driver education and nine weeks of sophomore health) and senior health education were placed on the temporary schedule.

Band, chorus, and freshmen-sophomore girls' chorus were the next items to be placed on the master schedule. The 1974-75 schedule was followed except for freshmen-sophomore girls' chorus.

The English classes were placed next on the schedule. The conflict matrix was used to determine the scheduling. The English 300 level courses



were the most difficult to schedule. English 100 and 200 courses had enough sections that they filled each of the seven periods.

The vocational classes were the next areas to be analyzed and scheduled. The freshmen homemaking and industrial education classes were placed away from the possible conflict of physical education and other freshmen level classes. (Note--the total enrollment of the two classes are 131 freshmen.) The junior-senior vocational courses (usually single or double sections) were placed to miss the required courses--physical education, health education, United States History, and consumer education. Child care was placed second, third, and fourth hours because of the Nursery School connected with the class requirements. Food classes were placed back to back in the second semester to help in ordering materials. The other vocational classes were placed in periods where the conflict matrix showed fewest conflicts with the preliminary schedule and the courses already placed in the temporary master schedule. They include Drafting I and II, Wood I, Metal I and II, Welding I, Electronics I and II, and Sewing I.

Math was the next area to be scheduled. Senior (advanced) math was set in accordance to the conflict matrix. (Note--the conflict matrix was consulted in all areas. As the schedule was developed, the conflict matrix was re-checked to avoid conflicts that could be avoided.) Geometry and algebra two were fit in the schedule. Freshmen general math and algebra one were placed on the temporary master schedule.

Social studies curriculum was reviewed and re-designed. World history (sophomore level) and geography (freshmen level) were reduced from

full year courses to semester courses. American government and economics were added as semester courses. Two sections were filled for each course. Reasons for the changes were (a) economics was not included in our 1974-75 curriculum, (b) the American government area was being covered only partially in the U. S. History class in connection to the United States and Illinois Constitution classwork and exams, (c) world history and geography as full-year classes were less than successful because of the texts used and the long time span. It was felt that a semester level class would be more beneficial for the students.

The senior level contemporary problems, psychology and the required consumer education classes were scheduled with regard to the conflict matrix and teacher vacancy. (Note—all three classes are taught by the same instructor.) U. S. History (six sections) was placed to miss one of the largest physical education classes for junior level boys and girls. Otherwise, U. S. History fills the full day. Freshmen-sophomore level world history, geography, economics, and American government were then scheduled to avoid conflicts with regard to teaching vacancies.

Art I and II were then scheduled with regard to teacher vacancy. (Half-time teacher.)

The last area to be scheduled was the science field. The single sections of physics, chemistry II and biology II were placed in accordance to the conflict matrix. Physical science, biology one and chemistry one were placed by the conflict schedule and staff openings.

After the schedule was completed on a temporary master schedule, Litchfield did a rough count as to possible total number per hour. (Note:

the computer's second runs will give exact numbers. (Appendix 8) If we had one hour off balance, we made an effort to balance the class load in respect to teachers available for study hall and the total class count. Each change made must be checked against the conflict matrix.

When the point develops that you feel the temporary master schedule is complete, we do a study hall listing to determine if we can cover all necessary study hall areas including staff, rooms large enough, and the total of the students.

After the staff feels we are fairly complete in our temporary master schedule, the materials must be placed in pencil on sheets for the computer. (Appendix 9, 10, 11) Even though this is done in pencil, it must be accurate. The listing must be re-checked by different parties to determine if it is correct. (Note--we also hand-check the computer print-out each time a change was made.)

#### Submitting Data for the Second Run

The T-1, T-2, and course master sheet is filled out by the principal for reproduction and storage on the computer tape system. The T-1 lists all courses and the number of sections for each course including the number of sections for each course. T-2 repeats the course by number, amount of credit and the length of the classes. T-1 and T-2 are used to properly set up the course master sheet.

The course master sheet gathers the following information: course number, course name, length of time and which semester it is offered, first, second, or both, number of sections offered, periods offered, room numbers, number of days it meets, credits, maximum number of seats or

pupil space, if the course is required, instructor's name and instructor's computer number. This procedure is done for each class beginning with the lowest class number and building to the highest class number. Multiple period classes are denoted by using the same course number and the same section number with different period numbers.

When completed, Litchfield sends the second run materials to the Western Kentucky Vocation Center for the first part of the second run print-outs.

#### Return and Review of the Second Run

The second run returns contain a print-out on each of the following:

(a) list of student schedule conflicts (b) room load, (c) teacher load (d) updated master schedule (e) course master list by period and (f) utilization by period.

Litchfield reads the updated master schedule to determine which areas are low or high. What classes have filled? What changes appear to be possible to make? The changes are logged and kept in mind as we go through the student conflicts. The course master list (Appendix 12) by period will give the course number, course name, length, period, room, credit, seats used and open, and the teacher's name and number. The seats used and open are our keys to further planning.

The course totals by period are used to help balance study hall totals.

Each student that has a conflict (Appendix 13) will appear on a computer print-out. Information contained will include the following:

(a) name of student (b) class in school (c) student number (d) course load and (e) course that is in conflict and the period it conflicts.



Litchfield reads the conflict and determines the conflicts among the course load. In the early runs, conflicts may be solved by simple changes. Juniors and seniors often conflict with semester-length English single section classes.

Corrections are done by dropping and/or adding courses according to the alternatives selected by the student, changing courses' hours, adding subjects teaching areas or adding to the maximum allowed in class.

If necessary, we call the student in for consultation for him/her to drop and add necessary classes.

When each student's individual conflict is corrected and the temporary master schedule corrected or adopted, the material is submitted back for further computer checking. Materials submitted will include: (a) all conflict print-out sheets, (b) all new students, (c) changes made by students or staff, (d) updated master schedule including all courses (additions and/or drops) as well as room and instructor changes.

The second run may be repeated as many times as necessary. When the conflicts are reduced to ten or less, it is safe to go into the final run. For 1975-76, Litchfield used five copies of the second run.

Litchfield finalized its master schedule at the end of the second copy of the second run. The final run was submitted on July 25, 1975.

#### Final Run

Litchfield's final run was completed on August 5, 1975. Finally, all of the pre-work on the computer scheduling pays off with excellent dividends when the final run is returned.

Each course section will have a complete class list with a breakdown by code class number, grade, sex and an alphabetical listing by name.

This allows the staff to determine their breakdown by each of the above listings. The student names and student numbers are internal checks within the computer. (Appendix 14, 15, 16, 17, 18, and 19)

The school receives three copies of the student's schedule. Litchfield uses the schedules in the following manner: (a) one copy to the student (b) one copy to the counselor's office and (c) one copy to the principal's office. The office copy is kept current at all times as to locker number and combination, schedule changes and textbooks checked out to the student. A schedule change will be placed on the counselor's copy as soon as possible. The locker number will be inserted on the counselor's and student's copy prior to being given out. The student's copy also contains the combination to his/her locker. Student copies are handed out during the week before school starts.

Each class section has a complete list of students by name, sex, grade, course, room, hour, and instructor. In addition, a breakdown of totals is given for each course according to seats used and available.

The study hall list is completed by name, sex, class, room, hour, and instructor. The study halls at Litchfield are scattered throughout the school in vacant classrooms.

The computer gives a complete breakdown of each room and its usage. (Appendix 14) It shows the different classes and instructors that use the classroom on an hourly basis including all study halls.

The computer prints out a teacher usage sheet. The print-out shows each class and room that the teacher is scheduled to teach. This also includes study halls. The class load is indicated with a maximum capacity, seats used and vacancies. (Appendix 15)



In addition to a complete breakdown by course, student's sex, and year of school, the computer gives us a study hall breakdown by room, teacher, and student's sex, class in school, and name.

#### Final Cost

The final cost factors cannot be accurately determined. We have the following expenditures logged: mailing \$38.00, phone calls \$19.24, and computer cost at sixty-five cents per student \$425.75. The total of \$482.99 is close, and I can safely say the cost was under \$500.00.

### CHAPTER THREE

#### TIME LOG FOR PRINCIPAL'S INVOLVEMENT

This section is a brief rundown of the principal's function. Some schools may assign part or all of these functions to another staff member. It needs to be someone who can spend time with the program and not be interrupted by everyday duties. Litchfield does not enjoy this type of staff member, and the principal has the responsibility for this management function.

The time log was kept during the 1974-75 school year to keep track of the time spent and activities that have consideration during the scheduling process.

#### Time Log for Principal's Involvement

November 4, 1974--Spoke to Jerry Fenton, Litton Industries' salesman, about scheduling for the 1975-76 school year. Mr. Fenton explained his program and asked to be allowed to submit a bid for the scheduling of Litchfield students. (Appendix 20)

November 4, 1975--Called Mr. Bill Whitlow, Paducah Director of Data Processing, in connection to scheduling for 1975-76. Determined the fee (sixty-five cents per student), starting point, and availability of computer space. (Note: Mr. Whitlow is a relative of the Assistant Superintendent for the Litchfield Unit. They had previously discussed the rates and the possible utilization of the Paducah services.)

November 5, 1974--Conferred with Superintendent Dr. Harold Reents and Assistant Superintendent Bill Comman in connection with scheduling for the following year. Discussion items included: (a) fees (b) service

(3) time and distance and (d) extra costs. Paducah has considerable mailing costs and no (personalized) service within the school, only by phone. From this standpoint, Litton offered the most serviceable program.

It was decided that we would wait until Litton Industries made their final proposal before deciding which computer company to employ.

November 26, 1974--Litton's proposal was seven hundred twenty-one dollars higher. Exact cost could not be determined due to the extra cost with the Paducah situation--mailing, phone and extra time expended.

November 26, 1974--Visited Superintendent's office with the information from Litton. We decided that Litchfield would go with the Paducah public schools for our registration help.

November 26, 1974--Called Paducah Computer Center and informed them that Litchfield would like to contract Paducah for our 1975-76 student scheduling. A follow-up letter was sent to confirm the decision.

December 3, 1974--A time schedule of events concerning the schedule was developed and approved by the counselors, staff, and unit office.

December 3, 1975--Called Mr. Fenton and explained why the contract had been given to Paducah.

January 6, 8, 10, 22, 1975--Staff meetings were held concerning the total educational program. The staff was broken down into departments and areas for discussion concerning next year's (1975-76) program.

#### Results of the Vocational Department

A. Agreement was reached to continue the Automotive Mechanics, Nurses Aid, and Cosmetology programs. These programs were in the first year of a two-year program. This was a continuation of the 1974-75 planning committee.

B. Building Trades was cut back from three periods per section to two periods per day to add Wood I sections.

C. Vocational Electronics II (a two-hour advanced class). Changes B and C were made with no staff additions.

The vocational staff was increased by two half-time positions. Auto Mechanics changed from part-time to full-time and the Nurses Aid position changed from half-time to full-time. The Litchfield School Board approved these changes as called for in the five year vocational plan.

#### Results of the English Department

The Yearbook English class and the Newspaper class be consolidated into a single section. In the past, the Yearbook class was a full year and the Newspaper (Purple Light) was a semester class with four editions of the school paper coming out only in the first semester. With the change, Litchfield will have the Purple Light each month for the school year. This saving of one semester of English was picked up in the adding of another section of Contemporary Novels. (This was not known until the master schedule was developed.)

#### Results of the Social Studies Department

Wholesale changes were made at the Freshmen and Sophomore level. The Geography and World History classes were changed from a year's length to a semester's time. American Government was added as a semester class. Previously, this class, under the title of Civics, was dropped about ten years before. Economics was added as a sophomore class. Both American Government and Economics were offered and filled in each semester. No staff additions were needed with the Board approved changes.

### Results of the Music Department

The mixed chorus was large during the past year. The staff decided that a change would have to be made. A freshmen-sophomore course was added for girls who did not take chorus in prior years. This reduced the size of the mixed chorus to seventy-six students with forty-eight students in the new freshmen-sophomore course.

No other department made any curriculum changes for the coming year.

February 3-10, 1975---Staff was asked to write the 1975-76 course descriptions. Each course description was approved by the principal, re-typed, and returned to the teacher for approval before developing the course outline. The 1974-75 course description was used as a basis for the older classes. New classes were done from our information and texts.

February 12, 1975---Met with counselors and determined Litchfield's future in reference to our scheduling plans. Results included the following: (a) Registration week would begin after the State Basketball Tournament and Easter break. April 3 through 11, 1975, was the choice. (b) A time limit of one week would be imposed upon the student to plan his schedule. (c) A letter would be sent to the parents three days in advance of the literature being handed out to the student. The letter was an encouragement for the parent to be active in the scheduling process. (It was also a public relations move to send positive information home.) (d) The committee decided that a partial filling out of the scheduling form would be done on the first day. Items that were required by the state would be filled out as the directions are given.



February 14, 1975--Discussed with Mr. Whitlow, of the Paducah Computer Center, our plans as outlined above. All plans were acceptable to the center.

March 1-30, 1975--Proofread registration materials for content and accuracy. Office staff prepared the final copy for student distribution.

April 1, 1975--Letter was sent to each family explaining the registration procedure, time schedule, how to receive special information if they needed it.

April 4-11, 1975--Students were assembled by class (i.e., Eighth, Freshmen, Sophomores, and Juniors) and given a full explanation of material and procedures. Each class took two periods for the explanation and partial filling out. The student was told of the letter and encouraged to seek help from his parents, teachers, counselors, and principal for information toward their schedule and future needs.

The student scheduling became the number one priority for the principal and guidance personnel. I (the principal) took responsibility for the Freshmen, Miss Cordera took the Sophomores, and Mr. Roper worked with the Juniors and the Eighth grade. (Mr. Roper works as the full-time counselor)

April 14-16, 1975--Checked out the student schedules for accuracy, birthday, course selection, alternative courses, and reviewed with the Sophomores any problems I found in their schedule. Mr. Roper and Miss Cordera did the same for the other three classes. The student conference usually took less than five minutes. If no problems existed, the time spent was less than two minutes. Students were called from their study hall if a conference was necessary, except for the eighth grade students, and they were taken from their physical education class.



April 18-24, 1975--Completed the original hand-written forms consisting of the T-1, T-2, student numbers and had the office girls develop a list of all students not registered that should have been included.

April 25, 1975--Mailed to Paducah the completed student schedule, T-1, T-2, and student numbers.

May 5, 1975--Received and reviewed the computer print-outs on the course matrix, student numbers, staff numbers, and room usage.

May 6-7, 1975--Chuck Roper, Guidance Counselor, and I took two days of school time and went to my house to fully review, plan, and develop the 1975-76 master schedule. With these two days, we covered more material than we could have in two weeks of school time with all of the interruptions of a normal school day.

May 8, 1975--Held a staff meeting to determine if the staff was in agreement to what was done toward the development of the temporary master schedule. A hand-out sheet was given to all staff members showing the following: course number, course title, number of planned sections, number of total students and instructor.

The staff was in basic agreement with the program. No changes were made, but some questions were raised concerning the high number of students in chorus, welding, and metal classes. It was decided to allow the program to stand, as the number was not as high as in past years, and perhaps this was a large number for one year only.

May 9, 1975--Sent the temporary master schedule to Paducah to apply the student schedule with the master schedule.

May 19, 1975--Received the master schedule print-out with the student schedule print-out of their class schedule. Total materials received in-

cluded: (a) class load by section, hour of day, teacher, room number, student number and student name (b) room load report with seats used and vacant and (c) teacher load report. (Note: the study halls are not included until the final second run.)

May 19-June 4, 1975--The master schedule was reviewed in light of two staff members taking a year's leave of absence due to pregnancy. No changes were necessary at this time. Litchfield replaced both positions with qualified people to teach the same courses. Home Economics, English II, Bible as Literature, and Spelling and Vocabulary were the subjects to be covered.

One hundred forty student conflicts appeared in the first running of the second run.

Mr. Roper worked with the Eighth graders and the Juniors, Miss Cordera covered the Freshmen, and I took the responsibility for the Sophomores.

Three master schedule changes were made. A physical science section was moved to another period; sixth hour now has two physical science sections. English I and English I-R were exchanged from first to seventh hour. Both changes were made to relieve some of the conflicts that occurred with the master schedule.

Chemistry II was added because of additional enrollment (third hour).

Most of the one hundred forty-six conflicts were solved by the schedule changes and by utilizing the alternative courses.

May 26, 1975--Graduation and all that it entails took priority over registration during this week.

May 28, 1975--Final day of school for the 1974-75 school year was a short student day.

June 3, 1975--Returned to Paducah the following information:

- a. new master list of course offerings
- b. corrected individual student scheduled conflict forms
- c. new enrollee or drop forms for students enrolling or dropping
- d. and drops, adds, or changes from within the present student body.

June 10, 1975--Received the print-out data from the Paducah Computer Center. It contained the following information:

- a. Updated master schedule with course number, sections, course name, semester offered, period, room number, credit for the course, seats open-used-vacancies, and the teacher number.
- b. Course master list by period including all of the above information. (The first period classes are listed together, the second period classes are listed together, and so forth.)
- c. The student utilization sheet is used to determine the class load per hour and will give the reader their possible study hall requirements.
- d. Teacher class load print-out includes the teaching load, room and vacancies.
- e. The room load print-out includes the same information as (d) except the room information is exchanged with the teacher number.
- f. Conflict print-outs are returned on student schedules pointing out the conflicting class. (Note--the conflict pointed out may not be the only class in conflict.)

June 10-25, 1975--All materials were reviewed and checked against our records. Each print-out proved to be accurate.

The student conflicts were most time-consuming. Since all counselors were off for summer vacation, I did all the student conflict changes.

Phone calls or personal interviews were necessary in about twelve cases. The computer has submitted thirty-four conflicts, of which six were unsolvable by the computer; but individual arrangements were made to allow the six students to carry their needed classes. (Appendix 13) (i.e., split U. S. History into semesters to cover their problem and arranged for three additional students to carry Vocational Drafting in a different time period.)

A complete room check was verified by the teacher and room usage charts.

Class load was checked to see if we were running as expected. Totals were complete except for the thirty-four conflicts and additional transfers.

The student utilization print-outs were reviewed in light of our study hall situation and availability of suitable rooms. We developed the complete study hall requirements and alternate plans. (extra personnel and/or rooms)

The master schedules were reviewed to determine if we were still in agreement with the total program. We found that no major changes could be made at this late date even if we wanted to reorganize.

The new students were added with the drop and add forms. Changes were made on the drop and add form for students wanting to change their schedule. Nine students were forced to drop the Nurses Aid I class due to overenrollment. The class could carry only fifteen students and twenty-five students registered: one had dropped school and nine were eliminated by the use of the Litchfield St. Francis Hospital's Nurse Aid

test. These nine students were forced to take pre-selected alternate courses. Four of the nine students had to be called in for a scheduling conference because of the conflicts.

Change of teachers' names were made for Dale Stilwell, Wood I and Building Trades, and Dave Hendricks, Electricity and Wood I.

The master schedule was not changed as to time, period, or subject.

June 25, 1975--Returned all material to Paducah to allow further work on the computer. (Note: At this point, most of the work toward scheduling is complete. We could have made this the final run with only a few more conflicts with the present information.)

July 7, 1975--Received the same type of print-outs as the June 10 data.

July 8-24, 1975--Reviewed and checked all computer print-out information against our hand copies. After determining everything was in order, Litchfield was ready to prepare for the final run.

The conflict students were reviewed, corrected, and changed to meet their needs in line with the master schedule. Thirty-four students showed a conflict.

The study hall classes, rooms and staff were placed in the master schedule. A master study hall sheet was prepared to send to the computer. Material included the teacher and teacher number, room with seating capacity, hour and semester. Submitted the drop and add slips for the new students. Submitted the master sheet without any changes. (Note: This section was completed in less than eight work hours. A week's vacation was taken during this two-week period.)



July 23, 1975--Sent the final run to Paducah for the third and last run via the regular route, Greyhound Bus Line.

August 4, 1975--Received a phone call from Paducah concerning some minor problems. Results were that I added two seats in all English I and II classes. Also, I added two seats to English 304, 307, and 308. Five sections were added to (women's) physical education 391.

August 8, 1975--Received the total final run from Paducah. Items included the following:

- a. three sets of individual schedule cards
- b. master schedule
- c. master schedule by period
- d. conflict schedule (eight not solved by the computer)
- e. master teacher print-out
- f. master room usage print-out
- g. two class schedule lists
- h. student utilization (totals) by period
- i. study hall master list

August 11-12, 1975--Secretaries assigned lockers and placed the student locker number on all three student schedule cards. The student card also carried the combination numbers.

August 13-15, 1975--Secretaries and four office girls (high school students) handed out the schedule cards, locker keys to about 140 lockers, and certain textbooks. This information was recorded on the office copy. Wednesday morning was for the Sophomores, Thursday morning was for the Juniors, and the Seniors picked up their information on Friday; the Freshmen were given their official introduction to the high school on Friday afternoon.

August 18-22, 1975--Made some late registration changes for new students and hand-placed them into the schedule. Informed the counselors as to the changes that were made during their absence.



article on scheduling prior to the actual enrollment in the future to allow parents to assist their children in the scheduling process.

## CHAPTER IV

### SUMMARY AND EVALUATION

#### Problems Solved By Using The Computer Type Scheduling

Computer scheduling has solved either in part or totally our overload in physical education and health education.

This gives the principal's office, counselors, and teachers an accurate class list by sex, class, and name, and adds greatly to our pre-planning for the master schedule.

Health education, physical education and classroom driver education have been tied together to reduce overloaded sections that Litchfield had prior to computer scheduling. (Note: This was partially achieved because of requirement changes and because of the balance of enrollment by the computer maximum limit.)

By the hand or manual method of scheduling, our class lists were often out of date and/or poorly kept. The teachers did not dare to fill in the grade book until the third or fourth week of school. We would have some students attempt to schedule themselves a free period, i.e., study hall in the parking lot, uptown, gym, or restroom. With the computer class count lists, most of these problems are solved. The computer has given Litchfield High School a greater degree of accountability for the student.

#### Problems Created Or Shown

The use of the computer has some problems. Litchfield has found that the time factor is a problem. Reasons include the fact that the Paducah computer is used only during the school hours by school personnel.

Another problem is the distance of 211 miles each way with no direct line of communication other than the mail or Greyhound bus via St. Louis. Litchfield uses the bus system which can be fast or extremely slow. One must allow four days per mailing time each way. (Our time span this year was one day to four days excluding week-ends.) The bus is about half as expensive as direct mail.

The use of the computer helped to show two overlooked areas of the school's changes of the past year. First, I have recommended the Board change the graduation policy to allow students to graduate early and under what conditions. Second, I have also requested that we raise the graduation requirements by a half credit per year over the next four years so that we do not have an overflow of early graduation requests (Appendix 2). This would partially solve the problems of having students in classes that they do not need to pass in order to graduate (i.e.: The student has met the state and local requirements for graduation; therefore, a small minority of students do not feel a need to pass or attempt to pass the course work of the second semester during their senior year.) (Note: Presently, Litchfield only meets the state minimum on requirements necessary for graduation.)

One problem was shown that was not projected. Students who fail a semester of a required class must presently re-sign up for the entire year. We are wasting a semester of the student's scheduling time by not letting him/her sign up for the semester only. We can solve this problem by allowing the class to be taken by semesters. For example, Freshmen level English I can easily be scheduled as two semester level classes. This would

allow the student to sign up only for the needed semester class and allow the other semester for another possible class.

This change will call for a larger size computer schedule card. The 1975-76 student schedule card consisted of twelve spaces. During 1975-76, Litchfield had a few students (six) who used more than twelve class spaces on the computer print-out schedule card. With the above semester change, we will have more schedules with this problem of not enough class spaces on the schedule card.

The Paducah people tell us that a larger card can be used. The expense will be higher because of a totally different card than they have used in past years. The price is not known at this time.

I am convinced that the computer has saved the Litchfield staff many man hours of work at very little additional expense.

## APPENDIX

May be found in the Education Department  
Eastern Illinois University  
Charleston, Illinois

- EXHIBIT 1. Teacher-Room Requests (Sample Page)
- EXHIBIT 2. Registration Guide
- EXHIBIT 3. Course Description
- EXHIBIT 4. Course Talley Sheet (Sample Page)
- EXHIBIT 5. Student Add/Drop Slip
- EXHIBIT 6. July 8, 1975, Courses with Student's Name (100 level)
- EXHIBIT 7. Enrollment Sheet
- EXHIBIT 8. July 8, 1975, Course Master List
- EXHIBIT 9. T-2 Form
- EXHIBIT 10. T-1 Form
- EXHIBIT 11. Course Master List (complete)
- EXHIBIT 12. July 8, 1975, Total Course Master List by Period
- EXHIBIT 13. Student Conflict Print-Out (one student's)
- EXHIBIT 14. Aug. 6, 1975, Final Room Load Report (sample page)
- EXHIBIT 15. Aug. 6, 1975, Final Teacher Load Report
- EXHIBIT 16. Aug. 6, 1975, Final Master Schedule (sample page)
- EXHIBIT 17. Aug. 6, 1975, Final Course Master List by Period
- EXHIBIT 18. Aug. 6, 1975, Final Course Master List by Period (totals)
- EXHIBIT 19. Aug. 6, 1975, Final Study Hall List by Period and Semester
- EXHIBIT 20. The Litton Proposal