INVESTIGATION INTO A SELECTED METHOD FOR USING INDIVIDUALIZED INSTRUCTION

by

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ABSTRACT

The general purpose of this study was to compare the difference in student skill performance and attitude in Sunnyside High School's Fashion Design class when the student was given a learning package with written instructions and samples as compared to when the student was given a teacher-demonstration in a small group center plus samples and written instructions in applying buttonholes by the machine and bound methods.

Student skill performance and attitude as measured in the fall semester 1978 was compared with skill performance and attitude measured in spring 1978 when Sunnyside High School was still on the quadrant system of year-around-school. Two units of study were measured as representative of typical units of skill study in the clothing area.

Results of the study showed that:

1. Students developed more psychomotor skills when they followed a teacher-demonstration group learning system.
2. Students had a more positive attitude toward teacher-demonstration group work.

CHAPTER I

INTRODUCTION

At Sunnyside High School, with year-around-school, it became apparent that a new method of instruction was needed. In the multi-track classes, a quadrant of students was going on vacation and another quadrant was coming back from vacation every 3 weeks. Therefore, the groups that remained in school had just completed 3 weeks of instruction and the group of students going on vacation missed 3 weeks of instruction. In a clothing class, the quadrant coming back needed to receive the information given to the other students the previous 3 weeks.

During Dr. Don Clark's class in individualizing instruction in 1975 a series of Learning Activity Packages, LAPs, were developed. They were developed to accommodate learning under the quadrant system in year-around-school. Further work was done with Dr. Naomi Reich and with the State Department of Education during the summer of 1977 in the development of more materials.

The researcher felt that the material she had developed in Dr. Clark's class had been previously used with a fair amount of success. Plans to use the material developed in Dr. Clark's class, Dr. Reich's class and the

State Department Workshop plus material developed with help from Mary Giltner (1977) and material developed by Judy Hernandez of Sunnyside High School were to be used in the clothing classes in the fall semester 1977. The plan was to use this material with individual students working at their own pace.

Under the quadrant system, Mrs. Hernandez started the students in the clothing area for the first 6 weeks. Mrs. Hernandez reported to the rotating teacher that she was inundated by paper work and that students were "turned off" by individualized instruction when the rotating teacher assumed the classroom duties of teaching these classes. The students reported that they hated all the paper work used in teaching concepts.

It was a problem to keep students at their assigned LAPs--often they visited with friends. It was difficult to keep up with the progress of each individual student; therefore, progress charts were established to help eleviate this problem. Group work was set up with more varied activities as quickly as it was possible to get them organized. The student reaction to these activities seemed more favorable. There was a group of students, approximately 6 out of 30 in each class, non-minority, with seemingly good reading skills and good self-direction, who executed all the LAPs quite happily and very quickly. The remaining students were unhappy with the LAP system. To

have students start out on LAPs, strictly on their own and strictly at their own rate of speed, was a good experiment in itself because it revealed dissatisfaction in student attitude.

Even though Sunnyside School District is no longer following the system of year-around-school, there seems to be a great need for developing a system where students would indeed work at their own pace, but student like or dislike of the program in a high school setting is considered to be very important by the researcher. "Old fashion" clothing teachers have "turned off" enough clothing students.

The first part of Johnson's (1968) report could have been written about the materials and systems developed at Sunnyside High School. Introductory learning materials were developed and then another body of material was keyed to steps in the pattern guide construction. Johnson found that junior high students worked very well under an individualized system of this design. The students tested higher in concept learning, actual skill learning, and transfer learning than the control group tested. Unfortunately, observations and findings were quite different at Sunnyside High School.

Previous research has established that students learn at different rates of speed. Students at high school level have different reading level skills. Table 1 depicts

Table 1. Sunnyside High School Reading Scores 1977-78

Grade in School	Total Students in Each Grade	Stanines		
		1-2-3	4-5-6	7-8-9
10th Grade Student Scores	639	172	391	76
11th Grade Student Scores	541	178	304	59
12th Grade Student Scores	417	141	229	47

the reading scores of the 10th, 11th, and 12th grades in the Sunnyside School District (Gardner et al. 1975).

Some students learn better by seeing a model, some by reading written instructions, and some by the demonstration method. Teacher contact is important to students. There are wide psychological differences, such as maturation levels, emotional stability, perceptions of self-worth, and psychomotor skills in the 16 to 18 year old age category. Individual motivation for learning a particular subject is a contributing factor to class success.

Audio-visual presentations can supplement teacher demonstration thus freeing the teacher to give individual help to students. Media helps teach concepts. Simonson and

Volker (1975) stated that the greater the variety of senses stimulated, media used, and activities required of the student, the more effective the learning program. In order to develop a program that will be well suited to individual student needs, it is necessary to be able to supply the students with audio-visual material to aid students in learning concepts within the clothing curriculum area. Media is a very important and a very necessary component to a totally individualized program.

Students could use media individually or in groups. Most teenagers enjoy group interaction. Well developed demonstration material can be used by an individual student. A group of students can also use this material in group learning situations to more fully develop concepts of the material to be covered. Closely associated with the selection of teacher and student activities are the necessary supporting materials that can motivate students and serve in effective ways to explain and illustrate subject material content. An interesting variety of media may encourage creativity in students.

Extraneous influences, such as individual or family problems often have impact on academic performance. Student backgrounds are different and at Sunnyside High School a variety of ethnic backgrounds are included. Student skill backgrounds are also different. They have not all reached the same level of skill performance in the clothing area.

Students feel that home economics classes should not contain a great amount of reading and written work. They seek a diversion in home economics classes. Students with varying degrees of handicaps in learning are now being mainstreamed into all Arizona classrooms. This fact requires the classroom teacher to spend more time on an individual basis with these students.

Lack of funds dictate that individualized instructions be directed through the use of learning packages. Learning packages have been developed and are used. Learning packages require reading and writing skills. Some students do not possess reading and writing skills to a great enough degree to function independently with a learning package. Audio-visual equipment is virtually unavailable. There is one Dukane projector and one cassette recorder for the use of 114 teachers. Filmstrips are the only form of media available. Many filmstrips in the home economics department are available in script form only. Students are not able to work well with a script filmstrip. The researcher is making cassettes to accompany filmstrips, but is limited by time and again the use of audio-visual equipment.

When it is possible to reserve audio-visual equipment to show media, all students, regardless of progress level, need to see the showing of audiovisual presentations at one time due to the unavailability of audio-visual

equipment for everyday classroom use. The clothing laboratory is used for three other classes all consisting of 25 plus students in number. It is not physically possible to have a viewing room for filmstrips. An audio-visual center would have to be limited to a carrel type of arrangement in a crowded corner of the regular classroom.

Due to the availability of some filmstrips, in a list of audio-visual priorities, a Dukane projector and three cassette recorders were thought to be the most versatile, usable pieces of equipment on the market. The projector and three cassette recorders were requisitioned in the 1978-79 budget. Their purchase was approved by the building administration, but the requisition was rejected by the school board and the district administration in their review of the budget.

With the rejection of necessary audio-visual equipment, it was not possible to proceed with any more individual or group audio-visual presentations to supplement samples and teacher-demonstration. Media can only be used occasionally when equipment is available through the central media center.

With all these constraints in mind, the researcher turned to the use of LAPs as the most viable system to teach clothing construction techniques. Because of this constraint, commercial materials were utilized for some

LAPs. This material was preceded by introductions developed by the researcher.

A copy of the learning package for making bound buttonholes will be found in Appendix A; and a copy of the learning package for making machine-made buttonholes will be found in Appendix B. The introductions to LAPs 17 and 18, used in this experiment, have been developed by the researcher. The bound buttonhole LAP has been developed utilizing commercial material from Window Pane-Bound Buttonhole (1967). The machine-made buttonhole LAP instructions have been developed utilizing the Professional Buttonholer (1967).

Sample boards have also been developed to complement the printed instructions. The directions for making a bound buttonhole have been developed in sample form. Each of the fifteen steps of the Armo directions has been illustrated in sample form in a step-by-step progression. A drawing of this display board is found in Appendix C. The directions for making a machine-made buttonhole have also been developed in sample form. A step-by-step progression is used. The sample board illustrates each step of the process in making a machine-made buttonhole. A drawing of this display board is found in Appendix D.

Statement of the Problem

The purpose of this study was to compare the difference in student skill performance and attitude in Sunnyside High School's Fashion Design class when the student was given a learning package with written instructions and samples as compared to when the student was given a teacher-demonstration in a small group center plus samples and written instructions in applying buttonholes by the machine and bound methods.

Student skill performance and attitude as measured in the fall semester 1978 was compared with skill performance and attitude measured in spring 1978 when Sunnyside High School was still on the quadrant system of year-around-school. Two units of study were measured as representative of typical units of skill study in the clothing area.

Assumptions

The following assumptions were made for the purpose of this study.

1. A variety of ethnic backgrounds were represented.
2. Students entered this class with varied experience.
3. Evaluation of the demonstration of skill can be judged using specified criteria.
4. These two units of study are typical of units of skill study in the clothing construction area; therefore, the results ascertained with these skills

are likely to be similar to the results found for other clothing construction skills.

Limitations

For the purpose of this study, the following limitations are applicable.

1. This study was limited in size to one class of students.
2. Because the subjects were not selected, but simply used on the basis of their availability, it was of necessity an incidental sample.
3. The findings and conclusions reached in this study are limited in their application to Sunnyside High School students in the Fashion Design class in spring 1978 and in fall 1978.

Hypotheses to be Tested

Students in a clothing construction class will develop more psychomotor skills when they follow a teacher-demonstration system than students who follow a strictly individualized system of learning where students are in great part responsible for their own learning.

Students will have a more positive attitude toward the teacher-demonstration system of center learning than students who follow a strictly individualized system of learning where students are in great part responsible for their own learning.

Definition of Terms

The following terms are considered to be important to this study:

1. Attitude--when the word attitude is discussed in this study, it is designated to mean how well a student likes or dislikes a method of teaching.
2. Audio-tutorial--sound and usually visual material keyed to written material for use in individualized instruction.
3. IM--instructional module or learning center.
4. Individualized instruction--by Heathers' (1977) definition consists of any steps taken in planning and conducting programs of studies and lessons that suit them to individual students' needs, learning readiness, and learner characteristics or "learning style."
5. LAP--learning activity packages are designed to allow a student to learn a particular concept or skill, or pursue an area of interest at his or her own learning pace.
6. Learning center--a planned area of activity and learning set up for student learning.
7. Learning contract--a definite contract agreement between teacher and student concerning what the individual student plans to accomplish.

8. Performance based--according to Gilstrap and Martin (1975) performance based is a precise objective in behavioral terms; performance criteria indicators of performance. Modes of assessment and criterion levels are specified and made public along with objectives.
9. PBLAP--performance based learning activity package.
10. Programmed systems--no attempt is made for individual differences--all students work through the same body of material (Clark 1974).
11. Quadrant or quad--a group of one-fourth of the students, chosen geographically, enrolled in Sunnyside High School.
12. Self-paced instruction--no attempt is made for individual differences in students--all students work through the same body of material at their own rate of speed (Esbensen 1974).
13. Skill performance--the use of procedures to produce a quality product.
14. Teacher-demonstration system of center learning--a small group of students work with the teacher as the teacher demonstrates a specific skill.
15. Track--the same as a quadrant of students.
16. Year-around-school--each quadrant of teachers and students went to school for 9 weeks and then went on vacation for 3 weeks all year around.

CHAPTER II

REVIEW OF LITERATURE

Literature concerning the use of individualized instruction in the clothing area became available in the late 1960's. It indicated, in the beginning of its use, that the truly individualized program, with students going at their own rate of speed, would revolutionize education from the junior high level through the college level (Johnson 1968, Reich and Berman 1971).

While the literature concerning the use of individualized instruction is still for the most part very positive in regard to an individualized instructional system, philosophy concerning the implementation of this system is changing.

Courtney (1970) developed a set of individualized instructions for zipper closures because none was available. In testing the final products against a rating sheet, no significant difference was found in the programmed group and the teacher-demonstration group. The slight differences in findings did favor the programmed instruction group. The retention of information presented was determined by an objective test. No significant difference was found between the two groups.

Reich and Berman (1971) writing in the Journal of Home Economics and Reich (1975) writing later in Audiovisual Instruction found that for college students using a media-written, audio-tutorial approach was very successful. Concept learning took place at the rate of speed that challenged the individual's capabilities. The student developed the ability to generalize and apply knowledge and thus arrived at the concept level of learning.

Students were given pretests in both written and construction skills to determine their placement in the program. The results of the posttesting showed that students did better work than was the case in previous non-programmed courses. Students also did very well on pencil and paper tests of conceptual learning. They did equally well in transfer of knowledge from sample garments to full sized garments. The teacher's time was more free for individual help.

Esbensen (1974) felt that learning activity packages were the most important element in individualized instruction. Well designed learning activity packages can be tailor made guides for individualized instruction. Individualized instruction means whatever arrangements make it possible for each student to be engaged at all times in learning those things that are of value to the individual. The purpose of individualized instruction, therefore, is to promote the development of self-directed learning. The

development of well-written learning activity packages can, and does, promote individualized, self-directed student learning.

Fosti and Harmon (1972) state that with a media system, students can "replay" instructions. Media has often produced better results than the conventional lecture because they have been empirically tested and revised. Such programs demand more student participation than do conventional programs. The designer of an instructional system has the task of developing a total system of individualized instruction which will incorporate the best instructional management and media mix for a particular group of students.

"Implementing Personalized Instruction Programs" (1974) suggested that it is the teacher's responsibility to translate individualized instruction into a viable educational experience for his or her students. Personalized instruction is based on the fact that students differ and do not learn at the same rate of speed or the same way. These differences in learning styles and patterns create the necessity to provide a number and variety of options for students as they work toward attainment of learning objectives.

Clark (1974) postulated that students like group activities. Material should be presented in a variety of ways with students allowed to select from several

alternatives. Contracts can help students understand what is expected. Learning packages should be used with care and not overused. Activities should be many and varied.

Simonson and Volker (1975) suggested that an effective method for individualizing instruction consisted of a variety of items. The items that they suggested are: an objective, a pretest, a programming system, an audio cassette to tell students what to do, a visual sample, and a posttest. The greater the variety of senses stimulated, media used, and activities required of the student, the more effective the learning program.

Viewing individualized instruction with the goal of teaching decision making, Lore (1975) wrote that the teacher's time must be made free through individualizing instructions so they can present alternatives for decision making. The opportunities for student decision making that are encountered in constructing a garment provide a most meaningful experience in decision making for students.

Under the individualized system, Gilstrap and Martin (1975) stated the need for students to use a contract system to aid their learning. Students worked on packages at their own pace, but with supervision and accountability to the teacher. With increased use of this strategy, the teacher was hopefully able to guide the students to a greater awareness of the need for being accountable to themselves for their own learning.

Farris (1976) found that individual learning packages plus an audio-tutorial method of instruction in high school was still very successful. Teachers taught by using individualized instruction in the form of learning activity packages. Teachers throughout the state of New York were invited to participate in Farris' research. For her research a clothing construction course was implemented. Participants were sent modules accompanied by audio-visual tapes and readings relating to the package topics.

Teachers' decreased use of lecture was found to be significant by Farris. Teachers and students talked together without having the teacher lecture. In this program pupils were found to talk with the teachers more freely. The increase in use of praise and encouragement by the teachers because their time was more free was significant. There was positive evaluation by administrators, and a low dropout rate in the program.

DeMont and DeMont (1976) stated that in individualized instruction, learning activities are controlled by the learner so that they evoke a high degree of interest and commitment rather than merely a sense of obligation, duty, or requirement. The learner selects or is helped to select learning experiences which are neither too difficult nor too simple and the learner can experience success. The learner paces himself thus allowing sufficient time for

mastery. The learner commits himself to a contract and receives immediate feedback. The individual actively seeks new roles which provide opportunity for realizing learning expectations and is supported and rewarded for each dimension of learning behavior.

Weber (1977) seriously questioned individualized instruction. He stated that learning packages reduce the amount of time teachers and pupils are in personal contact and that record keeping was voluminous. Students often lack the maturity and self-discipline to use the time efficiently; therefore, it became a problem to keep students at their assigned tasks in a productive way. He felt that results need to be the yardstick for measuring the effectiveness of individualized instruction.

Beach (1977) suggested allowing students to work in centers for 45 minutes and then meeting with them at the end of the class period for 15 minutes to pull learning for the day together. Students and teachers should both keep an activity sheet or contract and record daily progress. He recommended this as a workable method for managing a learning center approach to individualized instruction.

If a teacher believes in individualizing a program, then the teacher needs to find a comfortable method for teaching it. Hunsaker and Roy (1977) suggested that the group centered classroom may be a workable alternative to individualized instruction. As students begin to realize

the teacher has an unlimited supply of "individual" work that they can never finish, they develop undesirable work habits. The totally individualized process of learning may increase students' dislike of school and create student dissatisfaction with the learning process. Individualized instruction neglects social development because there is little interaction between students. To grow as a social being, interaction with others is obviously necessary. The group centered classroom helps maintain a healthy social order.

Current literature indicates a great deal of need for change in management of individualized instruction. Barkley (1978) stated that students can have problems of disciplining themselves to do work without time deadlines. Varied and interesting material needs to be presented to hold student interest. A combination of media can accommodate a combination of learning styles and keep students interested in progressing.

In later use of an individualized instructional system at The University of Arizona, Reich (1978) found that all students were in agreement that the demonstrations in close up range via film loop were on a one-to-one basis and much clearer than when demonstrated to the class in the traditional manner. Student evaluation of the program was very positive. It was clearly demonstrated at the college level that advanced techniques could be taught successfully

via film loops, of from 3 to 9 minute duration. The film loops for each course were accompanied by a matched, programmed workbook.

The researcher participated in a course instructed by Reich in the fall semester 1977-78 and found the system very effective for the self-directed student. Three diversified classes met in the same room with no difficulty.

In the late 1960's literature suggested that teachers develop a completely independent and individualized approach to instruction. More recent literature is indicating that students, particularly the pre-college level, cannot handle and do not enjoy a completely individualized program. They are learning more efficiently from a combination of audio-visual material plus learning activity packages. Some literature also suggested that students are learning more efficiently in groups where there is interaction with the teacher and with other student group members.

CHAPTER III

PROCEDURES

Description of Research Design

The groups were subjected to two different treatments in different order and then the order was reversed. A t-test for independent groups was used to compare mean skill scores between teacher-demonstration method of instruction and individualized instruction method for separqte student groups I and II and the composite of all student groups spring semester 1978 to the composite of all student groups fall semester 1978. Significance was determined at t = 1.96 which corresponds to 0.05 level. The same statistical test was used to determine whether differences in attitude existed. Responses on the attitude scale were coded and means calculated for each question per scale. Individual matched items were subjected to a t-test for the two groups. Significance was again set at the 0.05 level.

Population

All the Fashion Design class at Sunnyside High School, spring 1978 semester, acted as the subjects for this study. There were 25 members of the class. Twenty class members were on track for the experiment.

There were 12 members of the Fashion Design class fall semester 1978. All 12 members participated in the experimental research.

Sampling Procedures

A systematic sampling technique was used in the spring semester 1978. The teacher assigned the same number of students to each group. Students who were known to have some expertise in the clothing construction area were assigned to both of the two groups. Again a systematic sampling technique was used in the fall semester 1978. Students who were known to have some expertise in the clothing construction area were again assigned to both of the two groups.

In the spring semester 1978, half the students were placed in the teacher-demonstration group and half the students were placed in the group that was purely individualized. The groups were then reversed--the first teacher-demonstration group became the individualized instruction group and the first individualized group became the teacher-demonstration group. Two units of study were measured. The same teacher taught both groups, but the teacher used different methods of approach.

In the fall semester 1978 again, half the students were placed in the teacher-demonstration group and half the students were placed in the group that was purely

individualized. The groups were then reversed--the first teacher-demonstration group became the individualized instruction group and the first individualized group became the teacher-demonstration group. Two units of study were measured. The same teacher taught both groups, but the teacher used different methods of approach.

One group of students, Group I, was given samples and learning package instructions to complete their bound buttonhole. A copy of this learning package can be found in Appendix A. Upon completion of their task, the students were given an attitude questionnaire to complete. Learning Package Only Group Attitude form is found in Appendix E. The students recorded their attitudes toward the method of teaching used and about the task that they performed. Their answers were tabulated.

The other group of students, Group II, was given a teacher-demonstration, samples, and instructions for making a bound buttonhole. This was the same learning package found in Appendix A. The students were given an attitude questionnaire to fill out upon completion of their task. Teacher-Demonstration Group Attitude is found in Appendix F. These students too recorded their attitudes toward the method of teaching used and about the task that they performed. Their answers were tabulated.

The groups were then reversed and Group I became the teacher-demonstration group. Group II worked with the

individualized instructions method for making a machine-made buttonhole. The learning package for making a machine-made buttonhole can be found in Appendix B. Again each of the groups of students were given an attitude questionnaire to complete. Once more the students recorded their attitudes toward the method of teaching used and about the task that they performed. Their answers were tabulated.

Data Gathering Instruments

Both skill performance and attitude toward the two methods of teaching were measured. The same test instruments used to measure skill performance and attitude in the spring semester 1978 were used in the fall semester 1978 for testing purposes.

The instruments were developed in an Introduction to Educational Research, Educational Foundations and Administration, at The University of Arizona. This class was instructed by Claridge (1978). Ideas for the development of these instruments were taken from Best (1977). In conferences, Dr. Claridge also assisted in the development of the instruments.

Aleamoni (1979), from the Educational Psychology Department at The University of Arizona, gave further advice and assistance in the development of instruments used in evaluation of skill performance and attitude.

The same instruments, Bound Buttonhole Evaluation Checklist, found in Appendix G, and Machine-Made Buttonhole Evaluation Checklist, found in Appendix H, were used with both groups to evaluate skill performance.

Two separate evaluation checklist criteria were developed to accompany the Bound Buttonhole Evaluation Checklist and the Machine-Made Buttonhole Evaluation Checklist. The Bound Buttonhole Evaluation Checklist Criteria is found in Appendix I, and the Machine-Made Buttonhole Evaluation Checklist Cirteria is found in Appendix J. Ideas for the development of these instruments were taken from models found in Cross (1973), Dobbins (1973), and Kalak (1970). Rating scales discussed and developed by Cross (1973) and rating scales developed by Dobbins (1973) and Kalak (1970) were used as a reference and served as a model for the ones developed by the researcher. Knorr (1978) gave help and guidance in the development and refinement of each of the checklist criteria.

The checklists to evaluate skill were used on a four point scale (Appendices G and H). A check in the 3 box indicated that the skill had been executed very well, a check in the 2 box indicated very slight discrepancy, a check in the 1 box indicated a need for improvement and a check in the 0 box indicated an unusable product. Each step within the skill was evaluated on a four point scale. The checks in each box were totaled. The total points were

converted to percentages. To receive an A, the student needed to receive an average of 90%; to receive a B, an average of 80% was needed; and a C needed to receive an average of 70%. A grade of D or below indicated an unusable buttonhole product.

Learning Package Only Group Attitude form, found in Appendix E, was used to evaluate attitude toward the teaching method used in that group and in the reversed group, those who achieved the skill in a totally individualized manner. Teacher-Demonstration Group Attitude form, found in Appendix F, was used to evaluate attitude toward the teaching method used with the teacher-demonstration group and the reversed group, to measure attitude toward that method of teaching.

The same instruments, Bound Buttonhole Evaluation Checklist, Appendix G, and Bound Buttonhole Evaluation Checklist Criteria, Appendix I; and Machine-Made Buttonhole Evaluation Checklist, Appendix H, and Machine-Made Buttonhole Evaluation Checklist Criteria, Appendix J, were used with both groups to evaluate skill performance.

Student skill performance and attitude as measured in the fall semester 1978 were compared with skill performance and attitude measured from the spring semester 1978 when Sunnyside High School was still on the quadrant system of year-around-school. The effects of year-around-school on attitude toward the teacher-demonstration method

of center learning and individualized instruction were compared.

Data Gathering Procedures

In the spring semester, the class met from 7:55 until 8:50 a.m. in the morning on Monday, Tuesday, and Friday. On Wednesday it met from 9:05 a.m. until 10:35 a.m. on the extended day. It took 4 class sessions to complete the project and gather the data. All work was controlled in the classroom.

In the fall semester, the class met from 11:00 a.m. until 11:50 a.m. in the morning Monday through Friday. It took 5 class sessions to complete the project and gather the data. Again, all work was controlled in the classroom.

In both the spring semester and the fall semester, students in Group I were given learning package instruction materials plus samples in step-by-step form for making a bound buttonhole. They were asked to complete a bound buttonhole. They were working independently from other members of the group; however, they were free to discuss steps in construction with other student group members. The teacher was available to assist upon student request.

Students in Group II were given a teacher-demonstration as a group. After the teacher-demonstration, they were given the same learning package with directions

for making the bound buttonhole. They were also given samples in step-by-step form for making a bound buttonhole. These students worked with other members of the group by their own choosing.

The groups were then reversed and asked to make a machine-made buttonhole. The first teacher-demonstration group, Group II, became the individualized instruction group and the first individualized instruction group, Group I, became the teacher-demonstration group.

Data Analysis Procedures

The evaluation instrument scores on skills and attitude were tabulated. Differences and sameness in skill and attitude were ascertained.

A t-test for independent groups was used to compare mean skill scores between teacher-demonstration method of instruction and individualized instruction method for separate student groups I and II and the composite of all student groups spring semester 1978 to the composite of all student groups fall semester 1978. Significance was determined at $t = 1.96$ which corresponds to 0.05 level.

The same statistic test was used to determine whether differences in attitude existed. Responses on the attitude scale were coded and means calculated for each question per scale. Individual matched items were subjected to a t-

test for the two groups. Significance was again set at the 0.05 level.

Students' skill performance and attitude as measured in the fall semester 1978 on the basis of 9 months school was compared with skill performance and attitude measured from spring semester 1978 when Sunnyside High School was still on the quadrant system of year-around-school.

Data Presentation

The findings from each group are presented in table form in Chapter V for the purposes of comparison.

Criteria for Drawing Conclusions

There should be a difference in student performance of skill based on the evaluation form in order to draw a conclusion that one method of teaching is superior to the other method of teaching. There may be no difference in performance of skill.

When the word attitude is discussed in this study, it is designated to mean how well a student liked or disliked a method of teaching. There should be a difference in student attitude on the forms designed to measure attitude in order to draw the conclusion that one method of teaching is superior to the other method of teaching. There may be no difference in attitude toward the two teaching methods.

Two units of study were measured as representative of typical units of skill study in the clothing area. The same instruments, Bound Buttonhole Evaluation Checklist and Machine-Made Buttonhole Evaluation Checklist, were used with both groups to evaluate skill performance. Learning Package Only Group Attitude form was used to evaluate attitude toward the teaching method used in that group and in the reversed group, those who achieved the skill in a totally individualized manner. Teacher-Demonstration Group Attitude forms were used with the teacher-demonstration group and the reversed group, to measure attitude toward that method of teaching.

CHAPTER IV

ANALYSIS OF DATA AND DISCUSSION

A t-test for independent groups was used to compare mean skill scores between teacher-demonstration method of instruction and individualized instruction method for separate student groups I and II and the composite of all student groups spring semester 1978 to the composite of all student groups fall semester 1978. Significance was determined at t = 1.96 which corresponds to 0.05 level.

The same statistical test was used to determine whether differences in attitude existed. Responses on the attitude scale were coded and means calculated for each question per scale. Individual matched items were subjected to a t-test for the two groups. Significance was again set at the 0.05 level.

Student's skill performance and attitude as measured in the fall semester 1978 on the basis of 9 months school was compared with skill performance and attitude measured from spring semester 1978 when Sunnyside High School was still on the quadrant system of year-around-school.

Analysis of Student Skill Performance

The students were divided into two selectively sampled groups. Students who were known to have good

skills in the clothing construction area were placed in both groups. One group of students, both semesters, were given samples and learning package instructions to complete their bound buttonhole. They helped each other to a certain extent because they felt somewhat like a group.

The other group of students, both semesters, was given a teacher-demonstration, samples, and instructions for making a bound buttonhole. Students definitely worked as a group. They were supportive and helpful to one another.

The groups were then reversed and Group I became the teacher-demonstration group. Group II worked on individualized instructions for making a machine-made buttonhole. The same teaching materials were used by the reversed groups.

Grades for samples were measured by the Bound Buttonhole Evaluation Checklist, Appendix G, and Machine-Made Buttonhole Evaluation Checklist, Appendix H. Criteria were developed for the two separate evaluation checklists, Bound Buttonhole and Machine-Made Buttonhole. The criteria for Bound Buttonhole Evaluation Checklist are found in Appendix I and criteria for Machine-Made Buttonhole Evaluation Checklist are found in Appendix J.

The samples were graded by the researcher using the evaluation checklists and the criteria for bound buttonholes and machine-made buttonholes. The samples were then

regraded by Hardy (1978), a home economics teacher at Sunnyside High School. Ms. Hardy used the same evaluation checklists and the same criteria lists. When student scores based on grade were coded for analysis, a grade of A received a 5 point weight, B a 4 point weight, C a 3 point weight, D a 2 point weight, and F a 1 point weight (Table 2).

Table 2. Spring 1978 Student Scores in Expertise Based on Bound Buttonhole Evaluation and Machine-Made Buttonhole Evaluation, Student Group II

Group II Students	Column A Teacher-Demonstration Group Skill Score Bound Buttonhole	Column B Individualized Skill Score Machine-made Buttonhole
A A	5	4
B B	5	4
C C	5	4
D D	4	4
E E	5	5
F F	3	4

n = 6

The effect of class size on the analysis of these experimental research data needs to be mentioned in the beginning of this discussion. In the public schools, few classes are as small as this class was. Any results of this experiment need to be evaluated with the small class size in mind. It was possible for students to receive much more personal attention from the teacher in both the teacher-demonstration group and the individualized instruction group than is possible in most classes.

In comparing the first group of student scores, Group II, teacher demonstration, Column A, with individualized instruction scores, Column B, in spring 1978, there was little difference in the means and the t-value. The t-value was not significant at .40 (Table 3).

Table 3. Group II Skill Score Means Spring 1978

	Means	SD	T Value
Column A (Teacher-Demonstration)	4.5000	.837	.88*
Column B (Individualized Instruction)	4.1667	.408	

n = 6

*nonsignificant

As can be seen in Table 4, Group I, spring 1978, teacher-demonstration scores, Column C, are compared with individualized instruction scores, Column D. This comparison proved highly significant at .005 (Table 5). These scores were obtained during year-around-school.

In the fall 1978, Group II teacher-demonstration scores, Column E, compared with individualized instruction scores, Column F, proved significant at .006 (Tables 6 and 7).

In fall 1978, Group I scores comparing teacher-demonstration method, Column G, with individualized instruction method, Column H, showed nonsignificant at .82 (Tables 8 and 9). These scores were obtained in the traditional 9 months school.

At this point in the traditional school year, the teacher and the students were very well acquainted. The students asked for help very freely regardless of groups and perhaps that was why there was so little difference in the scores between groups in the traditional 9 months school year.

In compiling all teacher-demonstration groups, Column A and Column C, and all individualized instruction groups, Columns B and D for spring 1978, a significant difference was found (Tables 10 and 11). The scores of teacher-demonstration groups were higher with a t-value of

Table 4. Spring 1978 Student Scores in Expertise Based on Bound Buttonhole Evaluation and Machine-Made Buttonhole Evaluation, Student Group I

Group I Students	Column C Teacher-Demonstration Group Skill Score Bound Buttonhole	Column D Individualized Skill Score Machine-made Buttonhole
J J	5	3
K K	5	5
L L	5	3
M M	5	3
N N	5	5
O O	4	3
P P	5	4
Q Q	5	4

n = 8

Table 5. Group I Skill Score Means Spring 1978

	Means	SD	T Value
Column C (Teacher-Demonstration)	3.7500	.886	3.33*
Column D (Individualized Instruction)	4.8750	.354	

n = 8

*Significant at .005

Table 6. Fall 1978 Student Scores in Expertise Based on Bound Buttonhole Evaluation and Machine-Made Buttonhole Evaluation, Student Group II

Group II Students	Column E Teacher-Demonstration Group Skill Score Machine-made Buttonhole	Column F Individualized Skill Score Bound Buttonhole
A A	5	2
B B	5	4
C C	5	3
D D	5	4
E E	5	5
F F	5	3

n = 6

Table 7. Group II Skill Score Means Fall 1978

	Means	SD	T Value
Column E (Teacher-Demonstration)	5.0000	0	3.50*
Column F (Individualized Instruction)	3.5000	1.049	

n = 6

*Significant at .006

Table 8. Fall 1978 Student Scores in Expertise Based on Bound Buttonhole Evaluation and Machine-Made Buttonhole Evaluation, Student Group I

Group I Students	Column G Teacher-Demonstration Group Skill Score Bound Buttonhole	Column H Individualized Skill Score Machine-made Buttonhole
G G	4	5
H H	3	5
I I	5	4
J J	4	5
K K	5	5
L L	4	4
M M	5	1

n = 7

Table 9. Group I Skill Score Means Fall 1978

	Means	SD	T Value
Column G (Teacher-Demonstration)	4.1429	1.464	.23*
Column H (Individualized Instruction)	4.2857	.756	

n = 7

*Nonsignificant at .82

Table 10. Spring 1978 Student Scores in Expertise Based on Bound Buttonhole Evaluation and Machine-Made Buttonhole Evaluation, Student Groups I and II

	Teacher-Demonstration Group Skill Score Bound Buttonhole	Individualized Skill Score Machine-made Buttonhole
Group II Students	Column A	Column B
A A	5	4
B B	5	4
C C	5	4
D D	4	4
E E	5	5
F F	3	4
Group I Students	Column C	Column D
J J	5	3
K K	5	5
L L	5	3
M M	5	3
N N	5	5
O O	4	3
P P	5	4
Q Q	5	4

n = 14

Table 11. Group I and Group II Skill Score Means Compared Spring 1978

	Means	SD	T Value
Columns A and C (Teacher-Demonstration)	4.7143	.611	3.09*
Columns B and D (Individualized Instruction)	3.9286	.730	

n = 14

*Significant at .005

3.09 when grouped (Table 11). These data were collected during year-around-school.

A compilation of all scores from students in teacher-demonstration groups, Column E and Column G, and all scores from students in individualized instruction groups, Columns F and H, for fall 1978 are presented in Table 12. The difference in scores was not quite significant at .065 (Table 13).

In pooling all teacher-demonstration scores from spring and fall 1978 and comparing them with all pooled individualized instruction scores from spring and fall 1978, there is a significant difference in scores between teacher-demonstration and individualized instruction scores with a t-value of 3.40 (Table 14).

Analysis of Attitude Scores

The attitude questions were used to measure the student like or dislike of a method of teaching. Each question on the matched item attitudinal questionnaire will be discussed in sequence. Copies of the Questionnaires, Teacher-Demonstration Group Attitude and Learning Package Only Group Attitude are found in Appendices F and E, respectively.

In comparing matched items from the attitudinal questionnaire, in spring 1978, the actual t-value was 1.23

Table 12. Fall 1978 Student Scores in Expertise Based on Bound Buttonhole Evaluation and Machine-Made Buttonhole Evaluation, Student Groups I and II

Group II Students	Column E Teacher-Demonstration Group Skill Score Machine-made Buttonhole	Column F Individualized Skill Score Bound Buttonhole
A A	5	2
B B	5	4
C C	5	3
D D	5	4
E E	5	5
F F	5	3

Group I Students	Column G Teacher-Demonstration Group Skill Score Bound Buttonhole	Column H Individualized Skill Score Machine-made Buttonhole
G G	4	5
H H	3	5
I I	5	4
J J	4	5
K K	5	5
L L	4	4
M M	5	1

n = 13

Table 13. Group I and Group II Skill Score Means Compared Fall 1978

	Means	SD	T Value
Columns E and G (Teacher-Demonstration)	4.6154	.650	1.93*
Columns F and H (Individualized Instruction)	3.8462	1.281	

n = 13

*Nonsignificant at .065

Table 14. Group I and Group II Skill Score Means Compared Spring 1978 and Fall 1978

	Means	SD	T Value
Teacher-Demonstration	4.6667	.620	3.40*
Individualized Instruction	3.8889	1.013	

n = 27

*Significant at .001

and proved not to be significant (Table 15). In the fall 1978, the t-value was 2.68. This showed a significant preference for teacher contact.

Table 15. Attitude Toward Direct Contact with Teacher

	Teacher-Demonstration		Learning Package		T
	Means	SD	Means	SD	Value
Spring 1978	2.79	0.43	2.43	0.76	1.23
Fall 1978	2.77	0.44	1.92	0.86	2.68*

*Significant beyond .05

A possible explanation for this may be because Sunnyside High School had gone off year-around-school. One teacher had followed the class for the entire semester. By the time the experimental research was conducted, the teacher and the students had developed a good rapport.

On year-around-school, two teachers shared students during a semester. Since quadrants entered on a multiphase system, students, at times, were more on their own as other students entered and teachers changed classes.

The question of difference in attitude toward group work was not found to be significant (Table 16). In the

Table 16. Attitude Toward Group Work

	Teacher-Demonstration		Learning Package		T
	Means	SD	Means	SD	Value
Spring 1978	2.64	0.74	2.14	0.66	1.58
Fall 1978	2.23	0.60	2.15	0.69	0.24

T--Nonsignificant

spring 1978 semester, 11 students out of 14 preferred group work; however, when we look at the overall picture, more students were saying they only sometimes liked to work in a group.

In the spring of 1978, the preference for group work, -1.77 did not quite reach significance (Table 17). In the fall 1978, the preference for group work was significant beyond .05.

Table 17. Attitude Toward Preference for Group Work Over Independent Work

	Teacher-Demonstration		Learning Package		T
	Means	SD	Means	SD	Value
Spring 1978	1.71	0.73	2.29	0.73	-1.77
Fall 1978	1.31	0.75	2.00	0.71	-2.07*

*Significant beyond .05

Again, the traditional school year may have influenced judgments. The class was small and had worked as one large group all during the fall semester. They may have opted for group work because they enjoyed each other's company.

In checking the raw data, the samples were generally termed in the helpful range. The t-value verifies that

there was little difference in attitude between the teacher-demonstration group and the individualized instruction group. Regardless of group, all students felt that the samples were helpful (Table 18).

Table 18. Attitude Toward Helpfulness of Samples

	Teacher-Demonstration		Learning Package		T
	Means	SD	Means	SD	Value
Spring 1978	2.79	0.43	2.57	0.51	0.83
Fall 1978	2.15	0.55	2.38	0.65	-0.76

T--Nonsignificant

The t-value illustrates that the students who followed the teacher-demonstration method of instruction preferred group work. Those following the individualized method were not as enthusiastic about the method. In the spring, there was a bigger difference in preference for teacher-demonstration group work than there was in the fall (Table 19). Possibly here again we see more of a need for teacher and group contact because of the coming and going of quadrants and teachers and the uncertainty of the personal contact system of year-around-school.

Table 19. Attitude Toward Preference for Learning Skill--Individual or Group

	Teacher-Demonstration		Learning Package		T
	Means	SD	Means	SD	Value
Spring 1978	2.71	0.47	2.14	0.66	2.01*
Fall 1978	2.31	0.85	2.23	0.73	0.22

*Significant at .05

The more self-motivated the students, the more they liked individualized instruction. However, most of the students who followed the individualized instruction method indicated that they only sometimes liked that method of instruction (Table 19).

The t-value pointed out that there was little difference between the feelings of the two groups. Both groups felt that they could make another buttonhole using the given instructions (Table 20).

Discussion

The researcher made notes as the samples were graded. This action will be discussed with relation to scores and attitudes. It should be noted that the process for making a machine-made buttonhole and for making a bound

Table 20. Attitude Toward Probability of Making Another Buttonhole Using the Same Instructions

	Teacher-Demonstration		Learning Package		T
	Means	SD	Means	SD	Value
Spring 1978	2.93	0.27	2.79	0.43	0.64
Fall 1978	2.69	0.63	2.77	0.44	-0.27

T--Nonsignificant

buttonhole especially, is a first time experience for many students.

Perhaps we saw less difference in scores from traditional 9 month's school as compared with year-around-school because students and teachers had a better method of management developed in the classroom near the end of the semester. Students had a good rapport with each other and helped each other whether in a teacher-demonstration group or in an individualized instruction situation.

The scores in the teacher-demonstration group could have been high because the class was small in size to begin with and by dividing a small class into two groups, the researcher had a very small set for each experimental group. This is atypical for the public school system. The enrollment was small because it was an advanced class.

Also the class met during the sophomore lunch hour; therefore, it was only available to junior and senior students. Classes meeting during either lunch hour are smaller than those meeting during the rest of the school day because half of the students and teachers are eating lunch.

There are complex concepts contained in many processes of clothing construction. These concepts need more teacher-demonstration and individualized help than other less complex processes. The smaller the group, the more manageable and teachable in every case and in the case of these complex concepts, the students gain immeasurably from small groups with individual help. As an example--the concept of measuring a bound buttonhole's length by measuring length plus width is a difficult one. Students were able to perform this concept well with the teacher-demonstration and a generous amount of individual help from the teacher.

The researcher did not initially want to explain too much about the experiment to the students before and during this experimental research project. However, when the class finished the project, the teacher and the students sat down to verbally evaluate the experimental process followed in the research experiment both spring 1978 and fall 1978.

A small group of students adamantly stated that it was impossible for them to execute any skill without having

the skill demonstrated first. Yet another small group of students really liked working on their own exclusively. The remainder of the group reported they liked a variety consisting of both methods of learning as the student attitude forms indicate. However, verbally they favored the teacher-demonstration method of learning and group work overall. Students reported that peers helped them and social contact with peers was important.

CHAPTER V

SUMMARY AND CONCLUSIONS

Restatement of the Problem

The problem examined in this study addressed the differences in student skill performance when students were given individualized learning packages with written instructions and samples as compared to students given a teacher-demonstration in a small group center plus samples and written instructions for applying buttonholes. Also examined in this study was the development of a positive attitude toward the teacher-demonstration method of center learning as compared to a positive attitude toward individualized instruction method where students are in great part responsible for their own learning.

Major Findings

Although there is a significant relationship between the positive attitude students held for the teacher-demonstration method of study and the good quality skills developed, the relationship is not sufficiently appreciable to justify the use of this teaching method exclusively.

The total accumulation of data showed that students liked teacher-demonstration, and they liked teacher contact regardless of assigned group. Students enjoyed group work

socially, and they enjoyed the help and support group members gave to each other.

When attitudes were tested on individualized instruction, students replied that a teacher-demonstration would have been helpful. Audio-visual material could be used in place of demonstration if it were easily available. The majority of students missed teacher contact. Students were divided in opinion about working on their own. Some students did enjoy working on their own, but others stated that they enjoyed working on their own only sometimes.

Conclusions

Assumptions presumed in this study proved valid. A variety of ethnic backgrounds were represented and students entered this class with varied experience. Evaluation of the demonstration of skill can be judged using specified criteria. These two units of study are typical of units of skill study in the clothing construction area; therefore, the results ascertained with these skills are likely to be similar to the results found for other clothing construction skills.

The limitations realized in this study were all valid. This study was limited in size to one class of students. Because the subjects were not selected, but simply used on the basis of their availability, it was of

necessity an incidental sample. The findings and conclusions reached in this study are limited in their application to Sunnyside High School students in the Fashion Design class in spring 1978 and in fall 1978.

After instructing students strictly on an individualized plan of instruction in the fall semester 1977, and based on their unfavorable reaction, the researcher expected student reaction to strictly individualized instruction to be more negative. Again, in this experiment as was found to be true in spring semester 1978, a small number of non-minority students who were self-motivated to learn clothing construction skills were the students who viewed individualized instruction in a favorable manner.

In an interview with Clark (1975) he stated that he felt a variety of learning experiences should be provided for students. Students like variety and choices in learning experiences. One method should not be used to the exclusion of all others. Students confirmed this need for variety theory in their discussion with the researcher that followed the experiment.

Weber (1977) stated that learning packages reduce the amount of time teachers and pupils are in contact. The researcher felt this was true during this experiment and during the first semester 1977 at Sunnyside High School. The teacher-demonstration is more efficient because it reaches many students at one time. When the students work

individually, they have to be able to perform skills by reading material and examining samples. If a demonstration is needed for student understanding, the teacher needs to do the same demonstration for each of the students in the class who request that particular demonstration. Valuable teacher-class time and teacher-student help time is consumed in this way.

Fosti and Harmon (1972) state and "Implementing Personalized Instruction Programs" (1974) confirmed that to the designer of an instructional system goes the task of developing a total system of individualized instruction which will incorporate the best instructional management and media mix for one's own students. The researcher agrees with these authors in their concept.

Hunsaker and Roy (1977) suggested that the group centered classroom may be a workable alternative to individual instruction. This method provides for interaction with others of approximately the same age group. The researcher perceived, based on this experiment and other classroom experiences spring semester 1978 and fall semester 1978, that in a clothing construction classroom situation, this method could work very well.

The hypotheses to be tested in this experimental research was to determine whether students in a clothing construction class would develop more psychomotor skills when they followed a teacher-demonstration system of

center learning than students who followed a strictly individualized system of learning where students, were in great part, responsible for their own learning. This researcher acknowledges that the study showed that students in a clothing construction class developed more psychomotor skills when they followed a teacher-demonstration system of center learning.

This study was initiated to ascertain how students learned more efficiently and what method of teaching produced a more positive attitude toward learning. As a result the following conclusions were drawn by the researcher. It was concluded that students in a clothing construction class developed more psychomotor skills when they followed a teacher-demonstration group learning system. Students also had a more positive attitude toward teacher-demonstration group work and enjoyed a variety of methods of teaching and learning. Conclusions drawn here are only valid for the population surveyed.

As a teacher, the researcher set out to prove that individualized instruction does not work. After working extremely hard to establish totally individualized instruction in 1977 and having little success, the researcher was discouraged with that method.

One very large obstacle was the unavailability of audio-visual equipment and materials. After performing this experimental research two times with two different

classes of students, the researcher was pleased to find that both methods worked with students. Perhaps variety of learning experiences is the key to keeping students interested in learning. The researcher gained valuable insight into selected methods of student learning.

As a result of this experimental research, the researcher has established a program of both teacher-demonstration and individualized learning packages in her 1979-80 curriculum. Complex concepts that need teacher-demonstration and a great deal of individual help have been placed in the teacher-demonstration category. Less complex concepts have been placed in individualized learning packages.

Recommendations

Further study in this area using a larger sample group drawn from many class groups would serve to clarify student attitudes toward group work in learning as opposed to strictly individualized instruction program of learning or a variety of methods. When testing more class groups, student skill development could be more extensively tested.

A study of student reading skills correlated with performance on individualized instruction would be meaningful. This type of correlation would help the researcher place students in a program well suited to their needs.

Since the individualized learning packages and samples are all established, after teacher observation and counseling, highly motivated students with good reading skills could elect to follow a completely individualized plan of instruction and proceed at their own rate of speed. Other students, with teacher help, could elect a method of learning that best suited their needs--individualized instruction or group instruction or a combination of both methods to add variety to their learning.

APPENDIX A

BOUND BUTTONHOLE LAP 17

LAP 17 _____

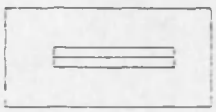
Name_____

Period_____

BOUND BUTTONHOLE

Today you are going to make a bound buttonhole. A bound buttonhole gives you one more option in sewing. It is generally used on a special coat, suit or garment because it is more professional looking. It is more time consuming to make than a machine-made buttonhole.

A bound buttonhole is one that utilizes fabric to finish the "lips" of a buttonhole. It looks like this:



There are samples on the bulletin board that show you each step in making a bound buttonhole. The steps are all outlined and explained. The same steps are outlined for you on the following sheet.

Pick up scraps from the box located on the counter by the bulletin board. The box is marked, "material for bound buttonholes." Pick up three pieces of heavy weight material and one piece of facing material. Work through each step of, Window Pane-Bound Buttonhole instructions by Armo.

Practice a sample or two and then you will be ready to make a bound buttonhole on your garment. Turn in your best sample for point credit.

As your teacher for help whenever you need it.

window pane-bound button hole

using SiBonnel or Siri

This method has been devised to give the homesewer a professional looking bound buttonhole, easy to make, no bulk, beautifully finished on outside and facing, and usable with any type of fabric, especially those that ravel.

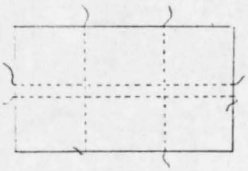
Buttonholes should be ⅛" to ¼" larger than the size of your button, depending on the weight of your fabric. The width should not exceed ½".

Always make a few trial buttonholes in your fabric before working on your garment.

1. For each buttonhole cut 2 pieces of bias or straight SiBonne 2"' wide and 1"' longer than buttonhole using the same color as your garment.

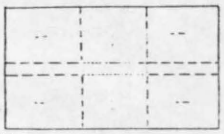
2. If the section is interfaced with hair canvas trim away the interfacing area ⅛" wider than the exact size of the buttonhole, or, the hair canvas may be attached after the buttonholes are made.

NOTE: The underlining will remain in tact with the fashion fabric (as one layer) throughout this method.



3. Mark the sides and ends of the buttonhole in the garment with machine basting. If machine basting will mar the fabric, hand baste. Extend each stitching line ½" in either direction.

4. Crease a rectangle of SiBonne down center and place over each buttonhole marking on **right** side of fabric. Pin in place.

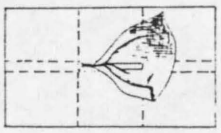


5. Turn the garment to the wrong side and stitch around the buttonhole on the basted lines. Use 15-20 stitches per inch.

6. Slash between stitching down the center to within ¼" of each end. Clip into the corners forming △ (triangles) at each end. DO NOT CLIP STITCHING.

7. Turn SiBonne piece thru slash to wrong side. Press seam and SiBonne piece away from opening forming a "window".

NOTE: Gently pull at corners as you press so SiBonne will not show from outside. This is the size of the finished buttonhole.



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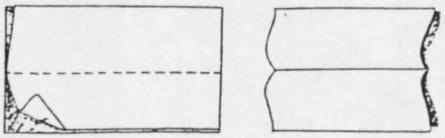
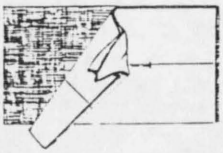
education department

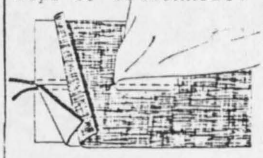
8. Cut 2 straight strips of your garment fabric 2" wide and 1" longer than buttonhole. (Cut bias strips for plaids, stripes, etc.) With right sides together machine baste lengthwise down center. Fold each piece with wrong sides together and press. This basting is removed when garment is finished. Do not remove basting stitches until garment is completed



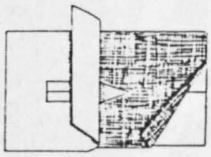


9. Place piece on wrong side of garment with basted seam centered the length of the windowpane. This forms the lips of buttonhole. Pin at ends.

Paste on front side catching only top layer of fabric and lips of buttonhole.



10. Turn garment away from buttonhole exposing seam. Using 15 to 20 stitches per inch, stitch over previous stitching thru seam, SiBonne and "lips" on long edges, extending stitching ½" at either end.



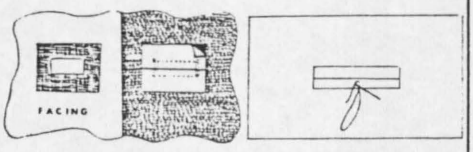
11. Stitch each "triangle" to SiBonne and lips from wide end to point.

12. Trim excess (layer) buttonhole fabric (to eliminate bulk) and press.

13. If buttonhole was made before attaching the interfacing mark buttonhole on interfacing ¼" larger than buttonhole. Cut out this area and attach interfacing to wrong side of garment. Pull buttonhole lips through opening. Catch stitch to interfacing. (or to underlining if no interfacing is used).

14. Proceed to mark the exact placement of buttonhole on facing.

15. Repeat steps 4, 5, 6, and 7 on facing to form window-pane. Blind stitch completed facing window-pane over buttonhole. No stitches should be seen.



Using P-91 (Instant Armo Iron-On) to reinforce buttonhole on ravelly outer fabrics.

1. Cutting and sewing methods are exactly the same when using Instant Armo.

2. Only one pressing is necessary to fuse the iron-on to your garment. Therefore eliminate the pressing in step 7.

3. When turning the patch inward to form the window the granulated side must be facing the wrong side of the garment.

LAP 17

Name _____

Period _____

BOUND BUTTONHOLE

Please attach your sample of a bound buttonhole here. Turn it in for point credit. Thank you.

APPENDIX B

MACHINE-MADE BUTTONHOLE LAP 18

LAP 18 _____

Name _____

Period _____

MACHINE-MADE BUTTONHOLES

You are going to make a machine-made buttonhole. Machine-made buttonholes are used on most garments. They can be made very plain with plain thread or quite dressed up when they are made with buttonhole twist thread. They are very sturdy and they are quite easy to make when you follow a few simple instructions.

Machine-made buttonholes look like this:

You will find samples on the bulletin board with step-by-step directions for making machine-made buttonholes.

Use the direction sheet that is attached to this paper for making machine-made buttonholes.

Pick up scrap fabric from the box marked "material for machine-made buttonholes." The box is located on the counter below the sample board.

Practice a sample or two and then you will be ready to make a machine-made buttonhole on your garment. Turn in your best sample for point credit.

Ask your teacher for help whenever you need it.

Preparing to Use the Buttonholer

...with a Conventional-Bobbin Zig-Zag Sewing Machine

(If you have a *Touch & Sew* sewing machine, turn to page 8.)

BEFORE YOU BEGIN

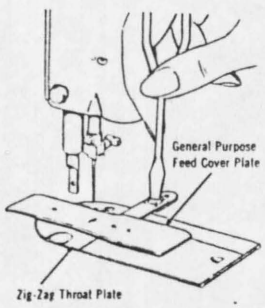
Set your machine for straight stitching in center needle position.

WIND THE BOBBIN

The bobbin of your sewing machine should be filled and the bobbin case threaded before the feed cover plate and the Buttonholer are attached. If you should run out of bobbin thread while sewing, instructions for replacing a bobbin with the Buttonholer in place are given on page 24.

SELECT THROAT PLATE

If your sewing machine has several different throat plates, be sure that the *zig-zag* throat plate is in place on the machine when you use the *Professional* Buttonholer. *Remember too, the feed cover plate must be used over the machine throat plate when the Buttonholer is in use.*



ATTACH FEED COVER PLATE

1. Raise take-up lever to its highest point.
2. Raise presser foot, and remove it and the attaching screw from the machine.
3. Insert feed cover plate attaching screw in either of the two threaded holes at right of needle.
4. Position feed cover plate over throat plate (*zig-zag*) of machine so that needle holes in each are aligned.
5. *Make sure that needle enters center of needle hole in feed cover plate.*
6. Tighten feed cover plate attaching screw with a screwdriver.
7. Thread the machine and draw bobbin thread up through needle hole in feed cover plate.

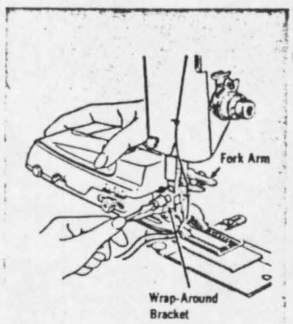
ATTACH BUTTONHOLER

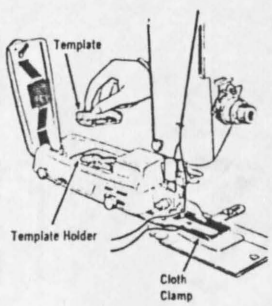
1. Guide the Buttonholer into position from the back of the machine so that the fork arm of the Buttonholer fits over the hub of the needle clamp of the machine.†
2. Fasten the wrap-around bracket of the Buttonholer to the presser bar with the Buttonholer screw. Tighten screw with a screwdriver.

REMOVE AND REPLACE TEMPLATE

You will note that a template (the brown one for 1-1/2" eyelet-end buttonholes) is already in place in your Buttonholer. *Keep a template in the Buttonholer at all times, and do not change the template until the Buttonholer is on the machine.* Then, after you have attached the Buttonholer and chosen the template you wish to use, remove and replace the template in the following manner:

1. Jog the cloth clamp adjusting lever until the cloth clamp has just passed its farthest forward position.
2. Open template cover by turning knob on cover in a counterclockwise direction.
3. Lift out template.
4. Hold new template with flat surface up and wider end away from you. Insert it into template holder. It may be necessary to jog template holder lightly until template drops into place.
5. Close cover. Turn knob clockwise to lock.





†With some vertical-needle machines, it may be necessary to lift the presser bar above its normal "up" position so that it will clear the stripper foot bracket.

Singer instructions--Scholastic Zig-zag & Stretch Sewing Machine/Model 717; reproduced by permission of the Singer Company.

Worked Buttonholes

Firm, durable worked buttonholes and eyelets are used on all types of clothing.

Buttonholes can be tiny for sheer materials or large for coatings. They can be straight buttonholes on dresses and blouses or eyelet-end buttonholes on suits or coats. Long or short, straight or eyelet-end, worked buttonholes are always made through two or more layers of material *after the facing is attached.*

Eyelets, which are used for belts as well as for lacings and studs, are also made after the facing is attached.

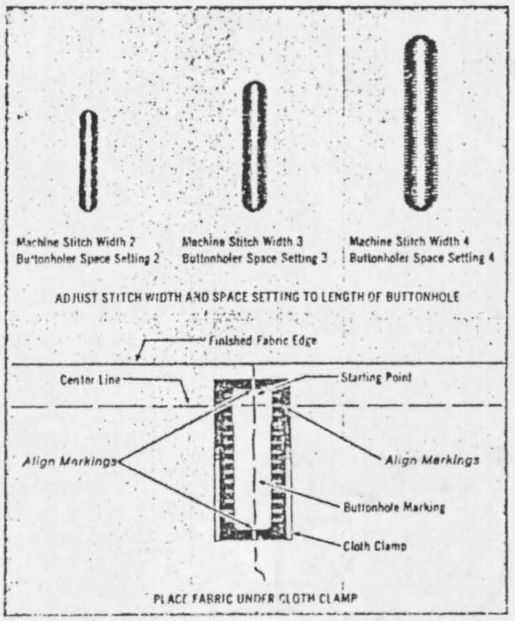
The stitch width and space settings recommended in the following instructions are approximate only. *Always make a test buttonhole on a sample of your fabric to determine correct machine and Buttonholer settings.* Be sure to duplicate the number of fabric layers in the garment and include interfacing if appropriate.

When you make your test buttonhole, choose a stitch width on the machine (and a corresponding space setting on the Buttonholer) that is suitable for the length of the buttonhole and the weight, texture, and weave of the fabric. Coatings and loosely woven fabrics require a wider stitch than lightweight and firmly woven fabrics. Also, coatings require a lighter machine pressure than lightweight fabrics. Finally, check to see that your settings allow correct cutting space. Normally, the space in the center of the buttonhole should be just wide enough to cut without damaging buttonhole stitching.

STRAIGHT AND EYELET-END BUTTONHOLES

Machine preparation

1. After attaching Buttonholer, select a straight buttonhole template (green) or an eyelet-end buttonhole template (brown) in the length desired, and insert in Buttonholer.
2. Adjust machine, including thread tension, for *zig-zag* stitch in center needle position.
3. Set machine Stitch Width Selector for width desired, from **2** through **4**.
4. Set Buttonholer Space Selector on a number that matches your machine stitch width setting (example: if you have chosen stitch width **2**, set Space Selector on **2**). After you have made your test buttonhole, these settings may have to be adjusted slightly.
5. Set Buttonholer Stitch Length Selector for worked buttonholes, setting **1**. Make a test sample to check settings. If fabric is heavy and fails to feed, adjust Buttonholer Stitch Length Selector *very slightly* away from setting **1** *toward* setting **2**.



WORKED BUTTONHOLES (Continued)

Fabric preparation

1. Mark buttonhole position and center line guides on right side of garment. See page 6 for instructions.
2. Bring cloth clamp to its farthest forward position by jogging adjusting lever.
3. Place fabric under cloth clamp.
4. Align buttonhole marking with center front and center back lines of cloth clamp.
5. Align center line of garment with horizontal lines, *second row from back* on both sides of cloth clamp. This will position the starting point of your buttonhole correctly, 1/8" beyond the center line of the garment.
6. Drop presser bar. Fabric should be held smoothly and firmly under cloth clamp.

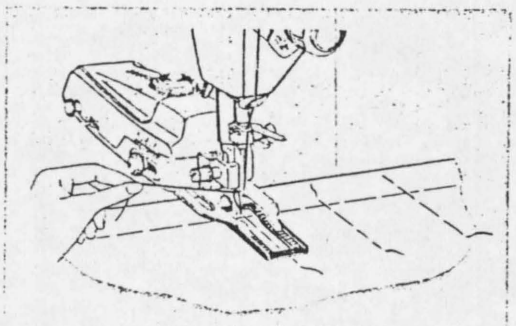
Stitching

1. Hold the needle thread and take one stitch, drawing bobbin thread up through the fabric. As the needle comes up, hold needle thread firmly since bobbin thread must pass through more than one layer of fabric.
2. Lower needle and hold both thread ends to left.
3. Take three or four stitches and clip thread ends close to stitching.
4. Remove basting used to mark buttonhole length. Do not raise the presser bar.
5. Activate the machine and let it complete one buttonhole cycle, allowing the stitching to overlap at the starting point. For a smooth, satiny appearance and greater durability, let the machine complete a second buttonhole cycle.
6. Remove fabric from machine.
7. Tie and clip thread ends on underside of work.

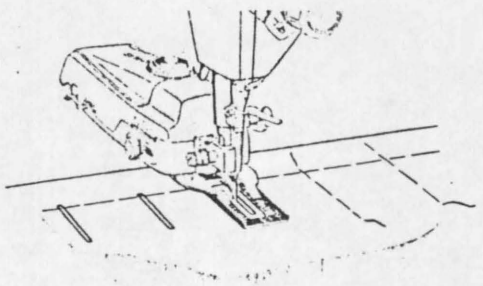
After all the buttonholes in a series have been completed, remove marking from center line of garment.

IF YOUR FABRIC IS HEAVY—

- Use a firm interfacing to support and retain shape of buttonhole.
- Set machine for a wide stitch width and Buttonholer Space Selector for a wide cutting space.
- Use a light machine pressure adjustment.
- If fabric fails to feed, adjust Buttonholer stitch length setting *very slightly* away from setting 1 *toward* setting 2.



DRAW UP BOBBIN THREAD AT STARTING POINT



REMOVE BASTING AND STITCH AROUND BUTTONHOLE

LAP 18

Name _____

Period _____

MACHINE-MADE BUTTONHOLE

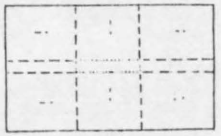
Please attach your sample of a machine-made buttonhole here. Turn it it for point credit. Thank you.

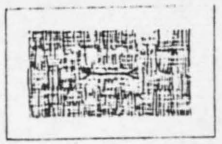
APPENDIX C

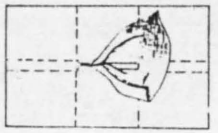
DIAGRAM OF BOUND BUTTONHOLE DISPLAY BOARD

BOUND BUTTONHOLES

Steps 1 - 8 explained in written instructions and material samples.







Instructions in their entirety mounted on sample board.

HOW TO CREATE YOUR
WINDOW PANE-BOUND
BUTTONHOLE

Steps 1.

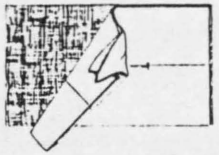
thru

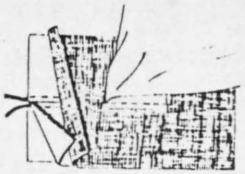
15.

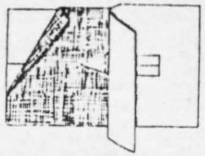
ARMO
WE HELP YOU MAKE IT BETTER

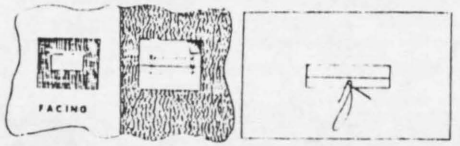
Poster board measures 21" by 27"

Steps 9 - 15 explained in written instructions and material samples.







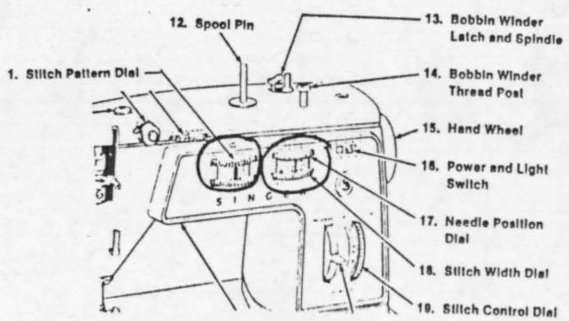


APPENDIX D

DIAGRAM OF MACHINE-MADE BUTTONHOLE DISPLAY BOARD

MACHINE-MADE BUTTONHOLES

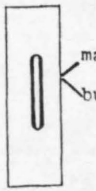
Steps for making machine-made buttonholes in progression with samples for each step.



Set machine width selector for width desired, from 1 through 4.

Set buttonholer space selector on a number that matches your machine stitch width setting.

Example



machine stitch width 2

buttonholer space setting 2

Poster board measures 21" by 27"

Instructions in their entirety mounted on sample board.

page 1

Singer commercial material as pictured in LAP 18

page 2

Singer commercial material as pictured in LAP 18

page 3

Singer commercial material as pictured in LAP 18

APPENDIX E

LEARNING PACKAGE ONLY GROUP ATTITUDE

LEARNING PACKAGE ONLY GROUP ATTITUDE

1. Did you find that you missed not having direct contact with the teacher?

   yes _____ sometimes _____ no _____

   your comment_____

2. Did you like working on your own?

   yes _____ sometimes _____ no _____

   your comments_____

3. Would you have liked to have worked with a group better?

   yes _____ sometimes _____ no _____

   your comment_____

4. The samples were: very helpful _____

   helpful _____ usually helpful _____

5. Would you like to learn another skill taught this way--(doing it pretty much on your own)?

   yes _____ sometimes _____ no _____

   your comment_____

6. Do you think you could make another bound buttonhole using the same instructions?

   yes _____ not sure _____ no _____

   your comment_____

APPENDIX F

TEACHER-DEMONSTRATION GROUP ATTITUDE

TEACHER-DEMONSTRATION GROUP ATTITUDE

1. Did you find that you liked having direct contact with the teacher?

   yes _____ sometimes _____ no _____

   your comments_____

2. Did you like working with a group?

   yes _____ sometimes _____ no _____

   your comments_____

3. Would you have liked to have done your work independently and not as a member of a group?

   yes _____ sometimes _____ no _____

   your comments_____

4. The samples were: very helpful _____

   helpful _____ usually helpful _____

5. Would you like to learn another skill taught this way--(doing a project as a member of a group)?

   yes _____ sometimes _____ no _____

   your comment_____

6. Do you think you could make another buttonhole using the same instructions?

   yes _____ not sure _____ no _____

   your comment _____

APPENDIX G

BOUND BUTTONHOLE EVALUATION CHECKLIST

Name_____

BOUND BUTTONHOLE EVALUATION CHECKLIST

Scale: 3 points are possible. Points range 3, 2, 1.
3 points are the highest number possible.

	3	2	1	0
1. Accurately measured the length of the buttonhole by including necessary ease				
2. Accurately marked buttonhole position according to grain of fabric				
3. Prepared patch/strip accurately				
4. Placed and basted patch/strip accurately according to markers				
5. Stitched accurately pivoting 90° on each corner				
6. Clip buttonhole accurately				
7. Turned patch/strip through to wrong side accurately				
8. Centered lips in middle of faced "window" or opening				
9. Stitched and secured ends accurately				
10. Pressed buttonhole satisfactorily (buttonhole lies flat)				

Score _____

Percentage _____

Grade _____

APPENDIX H

MACHINE-MADE BUTTONHOLE CHECKLIST

Name_____

MACHINE-MADE BUTTONHOLE EVALUATION CHECKLIST

Scale: 3 points are possible for each part of the skill. Points range 3, 2, 1. 3 points are the highest number possible.

	3	2	1	0
1. Accurately measured the length of the buttonhole template according to size of button				
2. Accurately marked buttonhold position according to grain of fabric				
3. Used correct width of zig zag stitch to correspond with choice of fabric				
4. Set zig zag stitch and buttonhole selector on correct numbers to form correct opening in middle of buttonhole				
5. Overall firm, even appearance of stitches				

Score ____ Percentage ____ Grade ____

APPENDIX I

BOUND BUTTONHOLE EVALUATION CHECKLIST CRITERIA

BOUND BUTTONHOLE EVALUATION CHECKLIST CRITERIA

1. Accurately measured the length of the buttonhole by including necessary ease for button.

   Points

   3 measurement exact
   2 1/8" discrepancy in measurement
   1 1/4" discrepancy in measurement
   0 not acceptable--discrepancy in measurement beyond 1/4"--too great for usable product

2. Accurately marked buttonhold position according to grain of fabric.

   Points

   3 exactly on grain
   2 1/8" discrepancy in grain
   1 1/4" discrepancy in grain
   0 not acceptable--discrepancy in grain beyond 1/4"--too great for usable product

3. Prepared patch/strip accurately.

   Points

   3 patch extends beyond buttonhole adequately
   2 patch is a little hard to work with--does not extend quite enough beyond buttonhole
   1 small--hard to work with--does not extend quite enough beyond buttonhole
   0 too small to cover buttonhole opening accurately

4. Placed and basted patch/strip accurately according to markings.

   Points

   3 sewed regular stitching lines exactly over basting markings with 18 to 20 stitches per inch
   2 sewed regular stitching lines 1/16" outside basting markings or sewed regular stitching lines 1/16" inside basting markings with 14 to 16 stitches per inch
   1 sewed regular stitching lines 1/8" on outside of basting markings or sewed regular stitching lines 1/8" on inside of basting markings with 10 to 12 stitches per inch
   0 sewed too far inside or outside basting marking to be a usable product with 6 to 8 stitches per inch

5. Stitched accurately pivoting 90 degrees on each corner.

Points

3 exact pivot at corners
2 pivot slightly off at corners
1 pivot 1/8" off at corner
0 pivot discrepancy beyond 1/8"--too small to work with

6. Clip buttonhole accurately.

Points

3 cut v shape exactly 1/4"
2 cut v shape down to 1/8"
1 cut v shape down to 1/16"
0 cut v shape too small to work with

7. Turned patch/strip through to wrong side accurately.

Points

3 no patch/strip shows on outside of buttonhole
2 patch/strip shows 1/16" on outside of buttonhole
1 patch/strip shows 1/4" on outside of buttonhole
0 patch/strip shows more than 1/4" on outside of buttonhole--too far to be usable

8. Centered lips in middle of faced "window" or opening

Points

3 lips of buttonhole exactly centered
2 lips of buttonhole slightly off
1 lips of buttonhole at an angle
0 lips of buttonhole too far off center to be usable

9. Stitched and secured ends accurately.

Points

3 ends stitched securely and accurately
2 ends stitched 1/16" too close to buttonhole or ends stitched 1/16" too far away from buttonhole
1 ends stitched 1/8" too close to buttonhole or ends stitched 1/8" too far away from buttonhole
0 ends stitched closer than 1/8" away from buttonhole or ends stitched farther away than 1/8" from buttonhole to be usable

10. Pressed buttonhole satisfactorily--buttonhole lies flat.

Points

3 pressed buttonhole for firm, flat appearance
2 over-pressed buttonhole slightly or under-pressed buttonhole
1 over-pressed buttonhole or under-pressed buttonhole
0 greatly over-pressed, melted or shined, fabric by over-pressing--not a usable product or did not press buttonhole at all--not a usable product

APPENDIX J

MACHINE-MADE BUTTONHOLE EVALUATION CHECKLIST CRITERIA

MACHINE-MADE BUTTONHOLE EVALUATION CHECKLIST CRITERIA

1. Accurately measured the length of the buttonhole template according to size of button.

   Points

   3 measurement exact
   2 1/8" discrepancy in measurement
   1 1/4" discrepancy in measurement
   0 discrepancy more than 1/4"--too great for a usable product

2. Accurately marked buttonhole position according to grain of fabric.

   Points

   3 exactly on grain
   2 1/16" discrepancy in grain
   1 1/8" discrepancy in grain
   0 discrepancy more than 1/8"--too great for a usable product

3. Used correct width of zig zag stitch to correspond with choice of fabric.

   Points

   3 even zig zag stitch width well suited to fabric being used
   2 slight pucker because zig zag stitch is too wide for fabric being used or zig zag stitch a little too narrow to hold fibers in place in fabric being used
   1 noticeable pucker because zig zag stitch is too wide for fabric being used or zig zag stitch is too narrow to hold fibers in place for fabric being used
   0 width discrepancy in zig zag stitch too great for fabric being used to be a usable product or width discrepancy in zig zag too narrow for fabric being used to be a usable product

4. Set zig zag stitch and buttonhole selector on correct numbers to form correct opening in middle or buttonhole.

   Points

   3 perfect size opening for fabric being used
   2 opening a little too wide for fabric being used or opening a little too narrow for fabric being used
   1 opening quite a bit too wide for fabric being used or opening narrow but enough width to enable sewer still to cut opening
   0 opening too wide for fabric being used to be a usable product or opening too narrow to cut open

5. Overall firm, even appearance of stitches.

Points

3 perfect firm stitches
2 stitches 1/16" irregular
1 stitches 1/8" irregular
0 stitches more than 1/8" irregular--not a usable product

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