

# Quilting Workshop



## Teaching Teens to Use a Sewing Machine

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The afterschool Quilting Club is designed to teach youth the skills of a historic American craft as well as provide a platform to engage in community service. This paper outlines the goals of the club, provides reasons for allocating resources to the club, and gives specific learning outcomes and methods of assessment. Although there will be multiple teaching workshops for the quilting club, the focus of this paper is on the lesson plan of how to sew based on instructional and motivational theories.

## **INTRODUCTION**

The quilting club is designed to help adolescent students at Alderwood Middle School to learn the skill of quilting with the added dimension of service learning. Each student in the club will be given the tools, skills, and materials to produce a quilt with the goal of donating it to a worthy cause in the community. The focus of this paper is the use of motivational and instructional learning theories applied to how to sew. A combination of the various aspects of Keller's (1987) ARCS motivational theory, McCarthy's (1997) 4MAT instructional design theory, Bloom's (1956) taxonomy of educational objectives, and Kolb's (1984) experiential learning model. The next sections clarify the context for the quilting club, reason for allocating space at the school, as well as the developmental needs of adolescents which are linked to the overall program goal, and an explanation of the and scope of the program.

## **REASONS FOR ALLOCATING SCHOOL RESOURCES**

In light of shrinking state budgets, it is reasonable to assess which clubs should receive support within the school district. Strong partnerships with principals and other stakeholders create a positive learning community. In addition to having fun, building self-esteem, and learning life-long skills, many studies have found that adolescents in afterschool clubs have better graduation rates, higher class attendance, and fewer behavior problems in contrast to the students who did not attend afterschool programs. See Appendix A for specific results of eight studies reported by The Afterschool Alliance on the benefits of afterschool programs.

Due to the generosity of business partners and parents in the community the economic commitment from the school is minimal. The primary need from the school is for a room to use after regularly scheduled school hours, which will be utilized two times a week. Staffing needs

have been met by one primary “teacher” and four volunteer parents who have the requisite skills and are willing to commit to devoting their time to the afterschool quilting club. The materials (fabric and supplies for 10 quilts) have been donated by Jo-Ann Fabric. Sewing machines have been generously donated by members of the community. Ten students have indicated a strong interest in the club on the survey for seventh and eighth graders.

### **SPECIFIC DEVELOPMENTAL NEEDS OF ADOLESCENTS**

Teachable skills have already been identified that meet the developmental needs of the target audience. The two main goals of creating quilts and donating them to the community link to the target audience’s developmental needs. The quilt club will meet several developmental needs which are specific to adolescents as identified by the Center for Early Adolescence.

1. The need for positive social interaction
2. Need for competence and achievement
  - They need opportunities to learn and develop new skills
  - Being acknowledged for their accomplishments encourages them to build on these accomplishments.
3. The need for self-definition
  - They need to reflect on their place in the community
  - They need opportunities to discover their interests and talents
  - They need opportunities to make choices and decisions about what is most important to them and how they want to spend their time and energy
4. The need for creative expression
5. The need for structure and clear limits
6. The need for meaningful participation

## **OVERALL PROGRAM GOALS**

1. Develop a sense of community
  - a. Provide and safe and respectful learning community
  - b. Establish ties with the greater community through the donation of quilts
2. Teach sewing skills
  - a. Pattern Choice
  - b. Design and Aesthetics
  - c. Fabric choice
  - d. Cutting with rotary cutter and self-healing mat
  - e. Sewing machine use
  - f. Quilt top Construction
  - g. Quilting the top, batting, and backing together
  - h. Binding the quilt

## **SCOPE AND TIMING OF PROGRAM**

The sewing skills will be taught in a specific order to facilitate quilt-making from start to finish.

The Quilt Club is active from September through June and does not operate in summer. With meetings two times a week, excluding holidays and school breaks. There are approximately 40 weeks in the school year, so there are potentially 80 days for students to master the art of making a simple quilt. The Quilt Club will meet for two hours at a time twice a week: Tuesdays and Thursdays from 3:30 to 5:30.

Some days would include explicit instructions on the specific learning module, and other days would be available to practice the skills learned in previous lessons and receive individualized help and feedback. The first lessons would be taught to provide some basic structure and skill sets, and it is assumed that students may finish their quilts at different paces based on experience level. The lessons on patterns, aesthetics, and fabric would meet the developmental needs of creativity. The need for structure and clear limits will be established throughout the program.

Within the first month of joining the club, students would choose a community location to donate their quilt to. With that clear goal in mind, they could connect the product of the quilt with the motivation of giving back to the community. Suggestions for donating would be teen shelters, hospitals, or nursing homes. The teens would have autonomy over the choice of where to donate based on their personal values. These decision-making abilities meet the goal of self-definition. The donation of quilts to the community meets the developmental need for meaningful participation.

Upon completion of all the quilts, an exhibition will be held as a culminating project. Parents and peers will be able to give feedback. Acknowledgement for their accomplishments meets the developmental need for competence and achievement. The last segment of the quilting club is the donation of the quilts. Photos will be taken of the quilts and their recipients in order to use for the following year's quilt club for inspiration.

The next section of this paper will focus on a specific lesson of sewing. There are eight major lessons in the quilting club, as outlined above, and this paper gives an example of lesson number five on how to use the sewing machine. This lesson will follow the sequence of lessons of 1) Pattern Choice 2) Design and Aesthetics 3) Fabric choice, and 4) Cutting with rotary cutter and

self-healing mat. After the Learning to Sew module, there were be lessons (6 Quilt top construction 7) Quilting the top, batting, and backing together, and 8) Binding the quilt

## **LESSON FOR USING A SEWING MACHINE**

### **CONTENT**

**Learning Objectives:** Students will be using the sewing machines throughout the year in their quilt making. They will need to be able to use the sewing machines independently and have a basic understanding of their purpose. The ability to sew a straight seam is crucial to the art of quilt making, but the foundation to sewing is knowing how to operate the sewing machine.

**Performance Outcomes:** This section of the lesson is known in McCarthy's 4Mat model as the "What" portion of the lesson. The four main outcomes from this lesson are

1. Identify the parts and function of the machine
2. Wind a bobbin
3. Thread the sewing machine
4. Sew a straight seam

### **METHODS**

#### **Instructional Procedures and connection to learning and motivational theories**

**1.** First we will share a photo album of quilts made by other middle school students. This is known in the ARCS model (Keller) as the Attention phase of the lesson. It also serves as the ARCS relevance module. In McCarthy's 4Mat model, this portion of the lesson will connect learners to the reason they are learning to sew. It helps learners to focus on why this lesson is important to them. In Kolb's experiential learning this serves as the concrete experience (feeling) by giving examples of completed quilts.

2. Take 20 minutes for the study guide and quiz on parts of the sewing machine (see appendix B). This quiz serves as both an assessment and a learning tool. The quiz operates at the knowledge level of Bloom's taxonomy, evidenced by the recalling of factual information, without necessarily understanding it. The learners will be able to explain, describe, and list the parts of the sewing machine and the purpose for each part. On the quiz, it also tests the next level in Bloom's taxonomy of comprehension. They will be able to label the parts of the machine to demonstrate comprehension. This step helps learners to classify the images (McCarthy) and helps with learners' concept development known as the "image" and "define" process of learning. Using Kolb's theory, this part of the instruction is the "abstract conceptualization" or thinking phase of learning.
3. Take 10 minutes for students to read and sign the rules for sewing machine use. This portion is well-suited to linguistic (Gardner) intelligence types. This section also relates to the adolescent developmental need for structure and clear limits. By signing the rules sheet, learners take responsibility for using the machine safely.
4. Take 5 minutes to watch very three short instructional videos.
  - a. How to wind a bobbin: <http://youtu.be/N1kSYLf-RAg>
  - b. How to thread the machine: <http://youtu.be/wxH2a5qmKL8>
  - c. How to sew a straight seam: <http://youtu.be/L1D8WxL9fOw>

These videos demonstrate the three main portions of how to sew. The videos reinforce many of the rules and concepts which they just read and signed. For instance, the concepts of pulling the threads behind the presser foot, not sewing over pins, and using the seam guide to make a straight seam give a visual perspective to what was previously represented in writing.

In Mc'Carthy's model this is part of the informing portion (What). The reflective observation (Kolb) will demonstrate what is needed to begin the project. By watching the videos it helps students by assimilating knowledge about how the machine is put into action and is known as the "think and watch" (Kolb) phase. When the learners watch someone else their age demonstrating the seam sewing and showing an interest in quilt making, relevance and (Keller) to the learner is established. The videos stimulate audio and visual learners.

**5.** Take 10 minutes for questions and reflections about the videos. The learning types best served here are the linguistic and interpersonal (Gardner). Active participation in discussion allows students who are mostly verbal learners to voice their opinions or concerns and gives all learners a chance to ask questions. Participation in group discussion aids in summarizing and demonstrating understanding (Bloom).

**6.** Take 40 minutes for a hands-on exercise in which the students practice the skills demonstrated in the videos. The instructor and parent volunteers will give individual help and feedback for winding the bobbin, threading the machine, and sewing a straight seam. This formative check will help students to learn the practical skills needed for quilting. In Bloom's taxonomy this portion of the lesson operates at the application level, where they can transform information from the videos and previously learned information into a hands-on application. This corresponds to the "think and do" and "active experimentation" (Kolb) phase. By taking the concepts learned from the video, students "practice" and "extend" (McCarthy) their learning experience. This hands-on practical application of working with one's hands is especially suited to spatial and bodily-kinesthetic (Gardner) learning types. By practicing the skills of threading

the machine, winding the bobbin, and sewing their first seams it builds confidence, and if they understand the process and receive praise it will garner some satisfaction (Keller's ARCS).

7. Take 15 minutes to close the lesson. Clean up fabric scraps, put away machines and announce the purpose of next meeting. In the next meeting learners will make their first patches with the skill they just learned in today's lesson. It is important to keep the students informed about why they are learning the skills that are being taught to keep it relevant (Keller). The whole reason to make a seam connects to making a patch for the quilt.

Although that ends a major lesson, there are many other steps to producing a quilt and the higher levels of the instructional model will be performed as the year continues in the quilting club.

Maximum satisfaction (Keller, ARCS) will probably be reached upon completion of the quilts.

Also, the refining and performing (McCarthy) will occur near the end of the year as all the information is assimilated into quilt production. As the students quilt, they will probably continue with active experimentation (Kolb) by trying new patterns and variations on the sewing skills.

### **ASSESSMENTS:**

As mentioned above a quiz (Appendix B) will assess the students' ability to identify and label the parts of the sewing machine. They will also be given feedback on the practical applications of winding a bobbin, threading the machine, and sewing a seam. This assessment would be considered a practical assessment. No grades are assigned in an afterschool program; however, assessment is still an important tool in the learning process. During this sewing lesson the assessment is minimal, but at the end of the year when the students have finished their quilts then a more formal assessment can take place at an exhibition, where parents and peers can give

feedback on the final products. A survey will be given to the teens at the end of the year as a satisfaction-based assessment tool. This is to gauge learner satisfaction. The questionnaire can also serve to assess the program as a whole, which can assist the administration to determine whether or not to continue the club.

## **CONCLUSION**

An afterschool club for quilting can provide a positive learning environment for adolescents. By varying the teaching methods and incorporating best practices from motivational and learning theories, students will benefit from learning the life-long skill of quilting as well as connecting to the larger community in order to donate the quilts.

**APPENDIX A: EVIDENCE OF STUDIES FROM THE AFTERSCHOOL ALLIANCE**

- Elementary school students attending LA’s BEST afterschool program improved their regular school day attendance and reported higher aspirations regarding finishing school and going to college. Additionally, LA’s BEST participants are 20 percent less likely to drop out of school compared to matched nonparticipants. (UCLA National Center for Research on Evaluation, Standards and Student Testing, 2005; 2007)
- Students enrolled in the variety of afterschool and summer learning programs offered by Project Exploration were found to graduate at a rate of 95 percent, nearly double the overall rate of those attending Chicago Public Schools. Additionally, 60 percent of former participants enrolled in a four-year college are pursuing degrees in STEM-related fields. (Project Exploration, 2011)
- High school students participating in Chicago's After School Matters program—which offers paid internships in the arts, technology, sports, and communications to teenagers in some of the city's most underserved schools— have higher class attendance, lower course failures and higher graduation rates than similar students who do not participate in the program. (University of Chicago, Chapin Hall Center for Children, 2007)
- Ninth grade students who, during middle school, participated in afterschool programs funded by The After- School Corporation (TASC) had higher daily attendance and credit accumulation than matched nonparticipants. (Policy Studies Associates, Inc., October 2007)
- Wisconsin teacher-reported improvements in behavior reflect that more than half of all regular 21st CCLC attendees improved in behaving well in class (53 percent), class

participation (66 percent), being attentive in class (57 percent) and homework completion (66 percent). (Wisconsin Department of Public Instruction, 2010)

- Fifty-nine percent of former Citizen Schools 8th Grade Academy participants enrolled in high-quality high schools compared to 28 percent of matched nonparticipants. Former Citizen Schools participants were also significantly more likely to graduate from high school in four years than were Boston Public Schools students overall. (Policy Studies Associates, Inc., July 2009)
- The Promising Afterschool Programs Study, a study of about 3,000 low-income, ethnically-diverse elementary and middle school students, found that students reported improved social and behavioral outcomes: elementary students reported reductions in aggressive behavior towards other students and skipping school, and middle school students reported reduced use of drugs and alcohol, compared to their routinely unsupervised peers. (Policy Studies Associates, Inc., 2007)
- A meta-analysis of 73 afterschool evaluations concluded that afterschool programs employing evidence-based approaches to improving students' personal and social skills were consistently successful in producing multiple benefits for youth including improvements in children's personal, social and academic skills, as well as their self-esteem. (University of Illinois at Chicago, Collaborative for Academic, Social, and Emotional Learning, 2007)

**APPENDIX B: PARTS OF THE SEWING MACHINE**

1. Bobbin: holds the thread inside the machine
2. Bobbin case: holds the bobbin; allows bobbin to turn and stitch; provides bobbin tension
3. Bobbin winder spindle holds the bobbin while winding the bobbin
4. Bobbin winder tension provides tension on thread when winding bobbin
5. Feed dog: moves fabric as you sew
6. Foot control Controls how fast the sewing machine sews
7. Hand wheel controls the movement of the take up lever and needle; can be controlled by power or by hand; should ALWAYS be turned toward you.
8. Power switch turns off/on machine and light bulb
9. Needle Carries the thread and pierces the fabric
10. Presser foot holds fabric in place while you sew
11. Reverse control allows machine to stitch backward
12. Presser foot lever lifts and lowers the presser foot
13. Spool pin holds the spool of thread in place
14. Stitch pattern selector shows you which pattern the machine will sew
15. Stitch width control sets the width of the zigzag stitch
16. Take up lever pulls thread from the spool
17. Thread cutter a place to cut threads without using scissors
18. Thread tension control adjusts the tension on the thread as required for a particular project

**Quiz: Identify and Label the Parts of the Sewing Machine**

- |                          |                             |
|--------------------------|-----------------------------|
| 1. Bobbin:               | 2. Bobbin case:             |
| 3. Bobbin winder spindle | 4. Bobbin winder tension    |
| 5. Feed dog:             | 6. Foot control             |
| 7. Hand wheel            | 8. Power switch             |
| 9. Needle                | 10. Presser foot            |
| 11. Reverse control      | 12. Presser foot lever      |
| 13. Spool pin            | 14. Stitch pattern selector |
| 15. Stitch width control | 16. Take up lever           |
| 17. Thread cutter        | 18. Thread tension control  |



**APPENDIX C: RULES FOR USING THE SEWING MACHINE**

The procedures and rules for using the sewing machines are:

1. Before beginning to sew, pull threads UNDER and BACK behind the presser foot about 3 to 4 inches.
2. The hand wheel always turns toward you, even when stitching in reverse.
3. Keep fingers several stitches away from stitching line; keep them flat on the machine to the sides of the presser foot
4. The presser foot must always be in the “down” position for sewing.
5. Don't force or pull the fabric- the machine will feed automatically.
6. Use the thread cutter to cut thread tails or trim threads with scissors as you work
7. The take up lever should always be at the “top” when beginning and ending line of sewing.
8. Report any repairs needed.
9. Maintain a slow and even speed with the foot control.
10. Watch the seam guide as you sew (NOT THE NEEDLE) to produce an even sewing line.
11. When stopping in the middle of a line of sewing put the needle down into the fabric to prevent thread loops.
12. Keep the bulk of the fabric to the left of the needle when sewing so you can see the seam guides on the needle plate.
13. Do not sew over pins.

The sewing machine is a very powerful and expensive piece of machinery. I will use the machine as instructed. By not following these directions I may risk bodily injury and will forfeit the privileges of working on the machine.

STUDENT SIGNATURE \_\_\_\_\_

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