



Active Learning Strategies
for
Middle and Secondary School
Teachers

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Fall 2016

Introduction

This document is part of a series of papers focusing on various aspects of effective teaching. (All documents in this series are available from the [Learning Connection](#).) The goal of this series is to address specific teaching-learning challenges to help new and less experienced teachers and teachers with limited preparation in instructional methodology become more effective in their classrooms. The purpose of this paper is to help teachers get students involved (become active) in the learning process, which is essential for achieving the outcomes sought. This material may contain useful reminders for more experienced teachers as well.

A basic component of being a good teacher is having depth and breadth of knowledge in one's content area(s). However, that alone is not adequate preparation for teaching. Harry K. Wong and Rosemary T. Wong (*The First Days of School*, page 9, Harry K. Wong Publications, Inc., 1998) state that teachers must be proficient in three characteristics; namely, (1) have positive expectations for student success; (2) be extremely good classroom managers; and (3) know how to design lessons for student mastery. Achievement of "student mastery" is a challenge each teacher must accept.

Mastery learning requires mastery teaching! Marilla Svinicki and Wilbert McKeachie (*McKeachie's Teaching Tips*, Wadsworth, Cengage Learning, Fourteenth Edition, 2014) note, "There is a big difference between hearing and learning. . . . Despite the fact that some instructors believe that telling is teaching, a learner really hasn't stored new information in long term memory until he or she does something with that information," page 191. Analysis of research literature reported by Charles Bonwell and James Eison in "[Active Learning: Creating Excitement in the Classroom](#)," AEHE-ERIC Higher Education Report No. 1, Washington, D.C.: Jossey-Bass, 1991 (retrieved July 29, 2015), made the following observations pertaining to active learning:

Surprisingly, educators' use of the term "active learning" has relied more on intuitive understanding than a common definition. Consequently, many faculty assert that all learning is inherently active and that students are therefore actively involved while listening to formal presentations in the classroom. Analysis of the research literature (Chickering and Gamson 1987), however, suggests that students must do more than just listen: They must read, write, discuss, or be engaged in solving problems. Most important, to be actively involved, students must engage in such higher-order thinking tasks as analysis, synthesis, and evaluation. Within this context, it is proposed that strategies promoting active learning be defined as instructional activities involving students in doing things and thinking about what they are doing.

Lecturing is not necessarily bad pedagogy; however, it must be accompanied by active learning exercises so students are actively involved in the learning process, not passive listeners.

Benefits and Challenges of Active Learning

Frequently, telling or lecturing is not teaching. Svinicki and McKeachie (*McKeachie's Teaching Tips, Wadsworth, Cengage Learning, Fourteenth Edition, 2014, page 191*) note that “doing something with information”—being engaged with the material—is necessary for a learner to store new information in long term memory. Learners must work with the information to make it part of their understanding. When processing procedures are absent, students become spectators rather than participants in learning.

Articles by Charles Bonwell, James Eison, and other professional educators familiar with active learning research attribute the following benefits to active learning:

- Creates greater student interest and motivation than traditional lecture.
- Involves students in learning-process activities rather than passive listening.
- Provides more frequent and immediate feedback to students.
- Promotes development of student skills in critical thinking.
- Improves writing and speaking skills.
- Increases individual accountability.
- Promotes greater academic achievement (breadth and depth); students learn to think about a subject/topic.
- Provides students with an opportunity to think about, talk about, and process course material.
- Improves recall of information.
- Contributes to more favorable attitudes toward learning.
- Places more emphasis on the teacher becoming a designer and facilitator of learning experiences rather than an imparter of knowledge.
- Emphasizes student-centered learning.
- Develops expertise in collaborative learning and teamwork.
- Creates opportunities for differentiated instruction.
- Promotes understanding. Note: Confucius stated, “I hear and I forget. I see and I remember. I do and I understand.”

Potential obstacles and challenges to active learning strategies are not difficult to imagine. They include: Can I cover all the course content if I use active learning? Will my preparation time be increased dramatically? If I think I am doing a good job using traditional methods, why change? Students seem to prefer the opportunity to be passive learners, why make

changes? The benefits of actively engaging students in their learning are far greater than any of the challenges. Some strategies to actively engage students are not difficult to implement. For example, the following procedure, presented in [Instructional Strategies Motivate and Engage Students in Deeper Learning](#), is designed to engage students in learning content through reading and writing assignments:

- Give students a list of “agree or disagree statements” about assigned textual material.
- Ask students to preview the statements and begin reading the text.
- Ask students to indicate whether they agree or disagree with the statements based on what they read.
- Have students justify their agree/disagree positions by citing appropriate evidence from the text.

Elaboration on the nature of active learning, the purpose of active learning, considerations for integrating active learning, techniques for incorporating active learning, and suggestions for covering content when using active learning are addressed in [Active Learning](#), from the Center for Teaching Excellence at Cornell University. This “Active Learning” material included the following reasons for incorporating active learning techniques in the classroom:

Research suggests that audience attention in lectures starts to wane every 10-20 minutes. Incorporating active learning techniques once or twice during a 50-minute class (twice or thrice for a 75-minute class) will encourage student engagement. Active learning also:

- Reinforces important material, concepts, and skills.
- Provides more frequent and immediate feedback to students.
- Addresses different student learning styles.
- Provides students with an opportunity to think about, talk about, and process course material.
- Creates personal connections to the material for students, which increases their motivation to learn.
- Allows students to practice important skills, such as collaboration, through pair and group work.
- Builds self-esteem through conversations with other students.
- Creates a sense of community in the classroom through increased student-student and instructor-student interaction.

In “[More Evidence That Active Learning Trumps Lecturing](#),” an article in the June 3, 2015, issue of *Faculty Focus*, Maryellen Weimer, Ph.D., made the follow observation about active learning:

It is true that we still don’t know as much about active learning as we need to know. For example, we don’t how much is needed to make a difference in a class session or across the course. We don’t know which of the many active learning approaches (group work, clickers, online discussion, hands-on experience, etc.) work best with what kinds of content and for what kinds of learners. We’ve got lots to learn, but we definitely know enough to challenge ourselves and our colleagues to step back from lecture and move forward with approaches that feature students taking action.

Although more research is needed, there is ample empirical evidence to indicate that implementing active learning instructional practices into classes is beneficial to students.

Steps for Implementing Active Learning

Effective instructional practices should be used to implement active learning. A guide for designing courses for active learning, [A Self-Directed Guide to Designing Courses for Significant Learning](#), 2003, by L. D. Fink, Ph.D., director, Instructional Development Program, University of Oklahoma, provides a comprehensive approach to active learning course development. The approach described can be adapted for middle and high school courses. This comprehensive approach contains many good ideas; however, the total approach may be too involved for the busy middle or high school teacher. The basics of implementing active learning in a course are covered in the following four steps, which should be integrated into lesson plans. In fact, they are an integral part of a lesson plan:

1. Identify what you want students to learn (learning objectives).
2. Describe how you and the students will know if these learning objectives have been achieved (formative feedback and summative assessment).
3. Determine what you and the students need to do in order for the students to achieve the learning objectives (teaching and active learning activities).
4. Make sure the preceding three steps (Student Learning Objectives, Feedback and Assessment, Teaching and Active Learning Activities) support and reinforce each other.

Teachers should inform their students about the use of active learning. Students should understand the expected advantages and be made aware of both the teacher's and their own responsibilities. The focus is on helping students learn, rather than on teaching, per se. Many of the active learning resources suggest that teachers start small as they begin to incorporate active learning into their classes. Active learning techniques are discussed in the next section of this paper. The sources listed include many options from which effective active learning techniques may be selected.

Active Learning Techniques

The active learning techniques included in this section have been gathered from many sources. Several of the activities are repeated in the resources listed; the different ways they are listed may give insight into potential uses. An internet search of active learning will turn up many more technique possibilities. Many of the suggestions can be misused if students are not instructed to give thoughtful responses and otherwise pay attention to the intended purposes of these activities. Superficial student participation in activities is not adequate.

Some of the activities listed in this section were designed for the college classroom. However, with very little modification, they will be appropriate for middle or secondary school students. Not all of the ideas are feasible in every school; others will not fit the teaching style of a given teacher and/or the learning style of some students; and still others do not fit all types of content. You should select activities that fit the content being taught, the learning objectives of your class, your students' interests and abilities, and your teaching methodologies. The following internet links refer to a variety of active learning techniques and provide ideas for developing additional approaches to active learning.

[Interactive Techniques](#), from the Academy for Teaching and Learning Excellence at the University of South Florida, contains 228 active learning ideas classified under subheadings which may be helpful in locating activities to meet your specific situation and needs. Some of these items are for groups, others involve Facebook, Twitter, or You/Tube or other online interaction; many of them are adaptable for a variety of purposes. Scrolling through this list will give you some good ideas and get the creative juices flowing for thinking of additional possibilities.

[Techniques of Active Learning](#), from the Department of Chemistry and Biochemistry, at Cal State, L.A., University (scroll down until you see the centered heading “TECHNIQUES OF ACTIVE LEARNING”), lists 29 items with an explanation of how each can be used; most can be adapted to middle and high school levels and to a variety of subject areas. The list is subdivided into the following main categories: Exercises for Individual Students, Questions and Answers, Immediate Feedback, Critical Thinking Motivators, Share/Pair, and Cooperative Learning Exercises. References on active and cooperative learning are provided at the end of the material. Although some of the activities are duplicates of those included on other lists of resource references, the explanations given here help clarify their use.

[40 Active Learning Strategies for Active Students](#), from the “Teaching Community, Teaching Monster.com,” presents 40 ideas for getting students involved in their own learning in meaningful ways. Rationale for using many of the ideas is included. This site contains links to other sites that provide useful resources, e.g., [Discovery Education Puzzlemaker](#).

[Active Learning](#), from the Faculty Center for Teaching at the University of Central Florida, discusses the value of active learning and includes some guidelines for incorporating it in the classroom. In addition, 10 sample active learning techniques are described.

[Classroom Activities for Active Learning](#), from the Center for Faculty Excellence, at the University of North Carolina at Chapel Hill, presents active learning ideas in the following categories: Questioning Techniques, Small Groups, Whole Class Involvement, and Reading and Writing. These exercises are designed to get students involved in thinking more deeply about course content.

[Chapter 8 – Using Active Learning in the Classroom](#), taken from Chapter 8 of the *Instruction at Florida State University Handbook: A Guide to Teaching & Learning Practices, Office of Distance Learning 2011*, provides descriptions of active learning activities and gives an explanation of the “intention” of each exercise. Check the following subheadings for active learning ideas: Integrating Active Learning into the Classroom; Active Listening; Active Writing; Visual-based Active Learning; Brainstorming; Collaborative Learning; Peer Teaching; Role Playing, Drama, and Simulations; Problem-Based Learning; Team-Based Learning: A Strategic Approach to Collaborative and Problem-Based Learning; Case Studies; and Debates. For each of these subheadings, “The Intention” is presented and “The Activity(ies)” is(are) described. A section on “Suggestions for Successful Discussions” provides procedures for planning, initiating, guiding, addressing problems, and concluding discussions. The article concludes with a discussion of several other active learning techniques.

[Designing In-Class Activities: Examples of Active Learning Activities](#) contains many activities included in a workshop for teaching associates at the University of Pittsburgh’s Center for Instructional Development and Distance Education. These 30 activities are classified under the headings: Activities for Lectures; Individual Activities; Group Activities; Activities to Promote Class Discussion; and Activities to End a Class. A brief description of each activity is included.

[Interactive Classroom Activities](#), from the Harriet W. Sheridan Center for Teaching and Learning at Brown University, presents active learning ideas under the following headings: Entry/Exit Tickets; Free Writing/Minute Paper/Question of the Day Exercise; Ice Breakers; Think-Pair-Share; Case Studies and Problem-Based Learning; Debate; Interview or Role Play; Interactive Demonstrations; and Jigsaw. An explanation of each activity is given and the advantages of using each are explained. Links providing more information, accompanied by examples for using each activity, are included. These links include links to other resources presenting ideas and steps for using specific activities.

[Active Learning](#), from the Center for Teaching and Faculty Excellence at George Mason University, lists characteristics of active learning and provides links covering the topics: “Incorporating Active Learning,” “Active Learning Techniques,” and “Active Learning Challenges and Strategies.” The 11 techniques listed under “Active Learning Techniques” include: Minute Paper; The Fish Bowl; Interactive Lectures with Clarification Pauses; Promoting Active Listening; Problem-Solving/Problem-Based Learning; Writing Discussion Questions; Think, Pair, Share; Critical Reading; On-Line Writing Partners; Pass a Problem; Peer Teaching/Student-Led Reviews; and Icebreaker Review. Each technique is accompanied with ideas for using it and each can be incorporated into a variety of courses.

[How can you incorporate active learning into the classroom?](#) This material from the Center for Research on Learning and Teaching, University of Michigan, contains 18 activities and a brief explanation of each. The second page of the file lists active learning strategies on a continuum from simple to complex.

Active learning techniques must engage students in meaningful activities that require them to think about the “what” and “why” of what they are doing. Obviously, what they are

doing should help students understand, apply and master the content/concepts in the classes they are taking. These techniques should be incorporated into lesson plans. Based on teaching experience, modification in teaching techniques and the development of new techniques can be made.

One way to incorporate active learning strategies is illustrated in the lesson plan on the following pages.

A Lesson Plan Incorporating Active Learning

The lesson plan presented in this section focuses on personal budgeting, which is part of a course in personal financial literacy. Many resources provide background information for this topic/course. These include course standards, textbooks, internet resources, guides from professional organizations, and consumer and government agencies. A few internet resources are included here that provide information on the need for financial literacy.

[“The Scary State of Financial Literacy in America,”](#) includes statistics on the seriousness of the problem and suggestions for increasing students’ financial literacy.

[“What Is Financial Literacy?”](#) The President’s Advisory Council on Financial Literacy defines personal financial literacy as “the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial well-being.” (2008 Annual Report to the President) This information noted that we make great efforts to teach children to read and write but don’t give financial literacy the same attention. This site contains a link to [“Your Life, Your Money,”](#) a PBS program.

[“We can do better than this. Our children need financial literacy,”](#) is an article from the Council for Economic Education, that emphasizes the need for, but lack of, personal finance courses in American high schools.

[“Financial Literacy: K-12,”](#) is a U.S. Chamber of Commerce site and provides links to Government Resources, Business and Corporate Resources, and Resources Provided by Nonprofits to assist schools, parents, and the community to help youth achieve financial literacy skills.

[“The 2014 Consumer Financial Literacy Survey,”](#) prepared for The National Foundation for Credit Counseling (NFCC) by Harris Poll, presents key findings of the Harris Poll survey and the data on which these findings were based.

The following three-page lesson plan, based on the Madeline Hunter Lesson Plan outline, included in “Preparing Effective Lesson Plans,” one of the documents in this series of papers, demonstrates how active learning can be incorporated into a lesson plan. Some of the material/ideas in this lesson plan were taken from [“Planning and Money Management Financial Plan”](#) (PwC’s Financial Literacy Curriculum 2013). The standards used are from the Indiana Department of Education.

The lesson plan for teaching a lesson on personal budgeting, which is part of a course in personal financial literacy, is presented on the following pages.

Lesson Plan: Budgeting

Class: Personal Financial Literacy *(appropriate for Grades 9-12)*

Date: 9-7-20xx

Unit: Personal Budgets 75-minute period

Teacher: Ms. Smmithe

Objectives:

Background Facts: Only 40 percent of adults keep a budget and track their spending. Three-fourths of American families say they live paycheck to paycheck. More than one-fourth of American families have no savings at all. These statistics are the basis for framing the objectives of this lesson; namely,

- Students will be able to articulate the purposes and goals of budgeting.
- Students will be able to analyze potential budget items in terms of financial planning appropriate for individual situations.
- Students will be able to explain the meaning of budget vocabulary and use terms correctly in preparing budgets.

Standards:

Standard 1.0 – Demonstrate management of individual and family finances by applying reliable information and systematic decision making.

Students will be able to:

- Contrast the benefits of financial responsibility with the costs of financial irresponsibility.
- Analyze the difference between economic wants and needs and give examples of each.
- Identify and analyze examples of opportunity costs and trade-offs of personal choices.

Standard 3.0 – Manage money effectively by developing financial goals and budgets.

Students will be able to:

- Explain basic budget categories, including income, taxes, planned savings, and fixed and variable expenses.
- Analyze the relationship between spending practices and achieving financial goals.
- Create a personal budget to achieve financial goals.
- Create an example of a family budget.

Anticipatory Set – 5 minutes

Describe the situation: Edwin receives \$10 a week as an allowance from his parents. In addition, he does various jobs for which they pay him \$10 a week. Ask each student to write a few sentences to answer the question, “Does Edwin need a plan to handle his money?” Reasons, not a “Yes” or “No,” should be given. (Use Think, Pair, Share: Each student writes one or two sentences to answer the question (1 minute); each student talks to a partner for one or two minutes; then the teacher calls on a few students to share their thinking. Students should be instructed to jot down points they agree with or disagree with during the sharing (2 minutes).

Teaching: Input

(10 minutes) Using student responses to the Think, Pair, Share anticipatory set, the teacher provides the information and guidance for students to develop a simple personal monthly budget similar to the following and discuss it. Discuss: How would this budget help “you” make sound financial decisions? (Adapted from:

[http://www.handsonbanking.org/nav_elements/teachers_guide_PDF/Teen T Guide.pdf](http://www.handsonbanking.org/nav_elements/teachers_guide_PDF/Teen_T_Guide.pdf))

MY PERSONAL MONTHLY BUDGET			
Description	Income (+)	Expense (-)	Available
Allowance and earnings from various jobs	\$80		
College fund		\$20	\$60
Entertainment/snack money/other		\$30	\$30
Contribution to charity		\$10	\$20
Savings		\$20	None

(30 minutes) The teacher can point out that the concept of budgeting is simple—balance money coming in with money going out, including providing for savings. However, some families find stretching income to cover expenses is a challenge. Budgeting is about choosing available options to create a workable budget. Let’s consider a family situation: husband and wife work outside the home. The husband’s monthly net pay is \$4,000; the wife receives \$500 monthly net pay from her part-time job. The family has two children—a son 14 and a daughter 10. Discuss the difference between gross and net pay. Determine the monthly income of the family. Work together in groups of 3 and compile a list of the types of expenses for which families would probably need to budget. Call on a few groups to share their lists; ask other students to respond to the lists and determine which of the expenses are fixed and which are variable. Work with students to summarize their items into a list similar to the following: Housing costs (mortgage payment and insurance), food, clothing, transportation (car payment, insurance, bus fare), medical (insurance and other medical expenses), savings, entertainment, contingency (“just in case” funds). Have students explain why these categories are important to a family; discuss how the use of some of the items could be flexible; e.g., entertainment money could be saved for the year and used for a vacation; discuss what are the options for situations when items go over budget for a month or under budget for a month; discuss opportunity costs and trade-offs. Discuss fixed and variable expenses.

Have the students set up a monthly family budget based on the percentage of monthly income spent on each category of expense. (Discuss the appropriateness of the percentages.) The following diagram could be used.

Monthly Family Budget				
Item	Percentage	Dollar Amount		
		Income	Expenses	Available
Monthly Income	100%			
Housing Costs (mortgage payment and insurance)	30%			
Food	20%			
Clothing	10%			
Transportation (car payment, insurance, bus fare)	12%			
Medical (insurance and additional expenses)	12%			
Savings	10%			
Entertainment	4%			
“Just in Case” Funds”	2%			

Teaching: Modeling (2 minutes)

The teacher should show (project the image) how a completed budget for the preceding example should look.

Teaching: Checking for Understanding (15 minutes)

Ask some “what if” questions and have students respond with how the budget would be impacted. Invite students to ask “what if” questions. Review terminology: income, gross and net income, variable expenses, fixed expenses, and savings. Introduce debt and interest. Ask students to volunteer explanations of how these impact a budget.

Divide students into three groups.

Group 1 should prepare a computer document (e.g., Word) to teach the 14 and 10 year old children about what the budget is and how it affects them.

Group 2 should prepare a computer document (e.g., Word) of rules for the family to abide by to make the budget work.

Group 3 should prepare a computer document (e.g., Word) of things that indicate the budget needs to be revised.

Guided Practice: (8 minutes)

Have students work in teams of two to apply their knowledge of budgeting to planning for a party for five people to be held at one individual’s home. The party is to involve watching a movie, which they rent and which parents approve, and refreshments. They should assume their budget for the party is \$45. Prepare a budget that includes all expenses for the party—movie rental, food, paper products, etc. Ask some teams to present their budgets; have class discussion.

Closure: (5 minutes)

Tell students to assume they are volunteering with an organization that provides free services to help families and individuals to plan so they will not overspend their income. Call on a student to explain the concept of budgeting to one of the clients of that organization.

Independent Practice

Work budgeting knowledge/information/decisions into future assignments.

Materials

All materials will be provided through copies distributed or through retrieval of computer files.

Duration

Total time estimate: 75 minutes

Review questions about budgets should be incorporated into class at various times in the future.

Sources drawn upon for the lesson plan: Madeline Hunter Lesson Plan Format from

<http://jfmuellet.faculty.noctrl.edu/205/madelinehunter.htm>

Budgeting information from

http://handsonbanking.org/en/resources/Teen_T_Guide_Budgeting.pdf, retrieved August 2015