Active Learning Handbook

The Active Learning Handbook (ALH) consists of ideas, techniques, and examples that faculty can use when creating significant teaching and learning experiences. The handbook is divided into two major sections, 1) introduction and 2) activities and components that can be incorporated into courses or exercises.

Introduction

One of the most common questions found in education today is how can we create significant learning? This handbook conceptualizes how we can make learning significant through the use of active learning exercises designed around specific learning values. There are basically two ways to create courses and learning exercises. The first and most common method is content driven development where faculty divide content into sections to be covered over the span of the course and then create presentations, lectures, and activities designed to introduce students to content. For example, a syllabus created based on content would have activities that reflect chapter headings from a textbook. The problem with content centered creation is that it does not take into consideration situation factors (what and how students learn) and the multiple learning styles of students.

The second approach is using a “Systematic Learning–Centered Design” model. According to Fink (2003), the model is based on the concept that asking what and how students should learn is central to creating significant learning. A sound approach to addressing these questions is the use of systematic tools.
A common method of teaching today is built using “Bloom’s Taxonomy”. Benjamin Bloom and his associates developed three taxonomies in the 1950s—cognitive, affective, and psychomotor. The cognitive taxonomy focuses on the creation of learning objectives and then designing instruction based on meeting these objectives. Fink (2003) reports that Bloom’s Taxonomy “consists of six kinds of learning that are arranged in a hierarchical sequence. These are, from the highest to the lowest:

- Evaluation
- Synthesis
- Analysis
- Application
- Comprehension
- Knowledge (meaning “recall” knowledge)” (Fink, 2003, p. 29)

Bloom’s Taxonomy is well-respected and has been effective for over 50 years. However, a new and broader taxonomy is needed to address the needs of students today. Fink’s (2003) “Taxonomy of Significant Learning” addresses new kinds of learning, such as “learning how to learn, leadership and interpersonal skills, ethics, communication skills, character, tolerance, and the ability to adapt to change.” (p. 29)

The Taxonomy of Significant Learning is based on the idea that all forms of learning require the learner to experience some kind of change. According to Fink (2003), without change there is no learning. For lasting change to occur there needs to be a significant connection or high level of importance to the learner’s life. The more significant an activity is to the learner, the greater the change; the greater the change, the greater amount of learning that occurs. (Fink, 2003)

Based on this perspective, Fink (2003) created a taxonomy that contains six categories of significant learning values or goals. Each of these categories contains more specific learning values that are all important to the learner. (Fink, 2003)
**Significant Learning Value Categories**

1. Foundational Knowledge: The basics, what students bring to the table.
2. Application: Doing; can be playing the piano, managing a complex task.
3. Integration: Recognizing and understanding new connections between different things; for example, understanding cause and effect.
4. Human Dimension: Discovering personal and social implications. These help the student learn more about him/herself and how to work effectively with others.
5. Caring: Changing the degree to which students care about something.
6. Learning How to Learn: Developing skills that will enable students to continue learning on their own. (Fink, 2003)

Individual learning styles are important in Fink’s taxonomy. Each learning value can address multiple learning styles. Fink stresses that these learning values do not exist alone and that they are typically synergetic with each other. When faculty create activities that incorporate multiple learning values they in turn are influencing multiple learning styles. This becomes important when it is realized that classes are made up of learners with different learning styles.

While it would be difficult to develop exercises after inventorying the variety of
learning styles that a particular class processes it is important to try and address as many different learning styles as possible. This is accomplished by creating learning activities that incorporate different values - which in turn will impact multiple learning styles. The more types of learning the teacher can promote the greater the potential is for creating a deeper change in the learner.

Through the combination of additional learning values in a single activity, a synergetic action is established producing a greater amount of learning than each learning value could create alone. Additionally, using multiple learning values in a single activity provides students with an opportunity to understand the relationship between learning values and learning styles.

Active Learning

Active Learning is any type of activity that gets students involved in the learning process. Through the incorporation of Fink’s Taxonomy of Significant Learning into the creation and application of learning activities, we can help to insure that each activity is significant to the learners. Teachers should approach learning activities by identifying which of the 6 learning values is appropriate or desirable, and then implement the activity with these learning values in mind.

In the following section of the FDC Handbook we have identified 20 learning activities along with the specific types of learning they incorporate. When using these examples, try to emphasize each learning category and value and its connection to the learner. The more types of learning that can be incorporated, the greater the potential connection to the learner and the greater the potential for significant learning to occur.

Reference:
**Learning Activities**

### Academic Portfolios

**Learning Values:** Human Dimension, Caring, Learning How to Learn

**Activity Description:** Academic Portfolios provide a flexible instruction and assessment tool that both students and faculty are finding more desirable than traditional assessment models. Since these portfolios are derived from student assignments and work, it is a method that works at almost all levels of education. To be more specific, academic portfolios are an effective method for many subject areas in addition to the arts due to the recent emphasis on authentic assessment.

Authentic assessment involves measuring students’ achievement based on their performing content-related tasks. Portfolios can be adapted to work in fields where projects are not showcased using multimedia to copy student output. For example, if students are giving oral presentations video tape could be used to record the session and assembled as part of a portfolio. Using portfolios to measure student performance helps students to gain a better sense of achievement when they can see their work over the course of the term and compare where they started with where they finished. Portfolios give students ownership of their work which improves their level of interest in what they are producing.

**Activity Purpose:**
1. Track student development
2. Reveals learning progress
3. Highlights best work
4. Connects students to work
5. Involves students in assessment process

**Implementation Steps:**
1. Ask students to collect their work during the term.
2. Ask students to identify criteria that they would use to evaluate each others’ portfolios.
3. Have them select what they want to include in their portfolios.
4. Ask students to reflect on their work and add additional content, including specifications, purpose, outcomes, and other related information.
**Additional Information**

Steps faculty can take to help students create successful portfolios:

1. Faculty should determine parameters for student portfolios. An example of a portfolio will help students better understand what is expected.
2. Faculty should determine acceptable formats for the portfolios to be stored in. For example, images could be stored as prints and placed in a book, or stored as slides and put in a slide projector, or they could be stored digitally and viewed on a screen or digital projector.
3. Students should have access to the technology that would be needed to create portfolios.
4. Tell students they will be presenting their portfolio to the class when they are finished compiling their work.

The “Student Portfolio” site at Elon University provides some excellent information regarding the use of portfolios: [http://www.elon.edu/students/portfolio/what.asp](http://www.elon.edu/students/portfolio/what.asp).


Assigning Roles During a Lecture or Video

**Learning Values:** Integration, Human Dimension, Caring, Learn How to Learn

**Activity Description:** Assign specific roles to each student during a lecture or video: critic, proponent, summarizer, and application.

**Activity Purpose:** Allows students to look for certain aspects within a film or lecture and yet get information regarding other aspects from classmates.

**Implementation Steps:**
1. Place students into groups of 4, assign roles, and give each group 4 different colored pieces of paper corresponding to the different roles.
2. When the video or lecture is over, place all the students with the same color paper into one group to make 4 large groups.
3. Give the students within the color groups time to discuss what they noted in the video or lecture.
4. Place the students back in their original group.
5. Now the groups can discuss the findings of each person in the group.
6. If time permits, students can change roles.

**Additional Information:** Critic must identify 3 things the video or lecture could have considered to make the argument more balanced; Proponent must identify 3 specific points illustrated in the video or lecture that supported the main message; Summarizer must tell what the primary message is and list examples; Application person must explain one way the material in the video has a direct impact on your life.
Debate as a Learning Activity

**Learning Values:** Integration, Human Dimension, Caring, Learning How to Learn

**Activity Description:** Students participate in a traditional one-on-one debate or work in groups to learn more about complex issues.

**Activity Purpose:** Requires students to consider a range of viewpoints, learn to respectfully discuss issues, and expand critical thinking and reasoning skills.

**Implementation Steps:**
1. During discussion of a “hot topic” or issue, ask students to take a few minutes and write down their own position on the issue, including their reasons for choosing that position.
2. Have students research the opposite position which they will present during the debate.
3. Use a debate style such as Policy or Lincoln/Douglas, where students are paired—one in support of the issue and one opposing the issue.
4. During the debate, the students will alternate presenting the affirmative and the negative. For example, each student presents his/her viewpoint for 5 minutes, then each student has 5 minutes for rebuttal (for a total of 20 minutes per pair).

Alternatively, students can work in small groups. Let the students sign up for a topic or issue that interests them, with 4-6 students per topic. Have the students complete the research and make a presentation to the class. In the presentation, each student in the group will take on a role: present the issue, support the issue, oppose the issue, and provide alternative viewpoints on the issue.

**Additional Information:** Debate will help students learn to research an issue and present facts as well as opinions. If you use the small group approach, the debate activity will also help students to learn to work collaboratively.

**Reference:**
The Fish Bowl

Learning Values: Application Learning, Integration, Human Dimension, Learning How to Learn, Foundational Knowledge

Activity Description: After a lecture or assigned readings, students write a question on a slip of paper and contribute it to a fish bowl (or hat or other suitable item). The instructor draws the questions and reviews them with the class.

Activity Purpose: To give the instructor feedback; gives the students the opportunity to ask questions, get clarification.

Implementation Steps:
1. Provide students with slips of paper or index cards.
2. Ask students to write down a question they had from reading or other assignments, or have them write a question at the end of a lecture.
3. Have students deposit their questions into the fish bowl
4. Begin by drawing one question at a time, clarifying for the students the concept, or having other students in the class answer the question.

Additional Information: This activity gives students an anonymous means to ask questions they might otherwise be reluctant to ask.

Reference:
Focused Student Journals

Learning Values: Human Dimension, Caring, Learn How to Learn, Integration

Activity Description: Journals can take on many forms and be done for a variety of reasons. This learning activity utilizes Focused Student Journals to answer particular questions or topics. Teachers provide questions, topics or concepts that students focus their attention on when working on their journals.

Activity Purpose: Allows student an opportunity to analyze course material more deeply. Keeping a journal forces students to think about the material in greater detail. Having students answer specific questions in their journals provides a good opportunity to integrate what they are being taught into other areas.

Implementation Steps:
Journals can be completed in class or on their own. When appropriate, students can answer responses in an online blog.

1. During class or for homework, ask a question relating to the material.
2. Students’ answers should be recorded in their journals.

Additional Information: Guiding students reactions by asking specific questions will help keep them from straying. Alternatively, you might have them find and react to relevant articles or specific parts of the course texts.

The article, “Effective Use of Student Journal Writing” prepared by Gary Cobine, provides some good examples of different types of student journals: http://www.indiana.edu/~reading/ieo/digests/d99.html.
Lecture Bingo

Learning Values: Application Learning, Human Dimension, Caring

Activity Description: Lecture Bingo makes a game of identifying important points in a lecture. Faculty create a variety of cards that have different lecture points in each of nine squares. Students participate by marking boxes when they are brought up during the lecture.

Activity Purpose: Lecture Bingo is a fun way to help students stay focused during a lecture.

Implementation Steps:
1. Create a list of the key concepts that will be taught during a lecture. Create Bingo cards of different arrangements from this list of key concepts.
2. During the lecture, students mark their Bingo card after a key concept has been covered - just like a game of Bingo.
3. When a student completes a vertical, horizontal or diagonal line they should yell “Bingo!”
4. Identify a prize or some kind of reward so students will be motivated to participate. For example, extra credit points could be given for the winners.

Additional Information: Lecture Bingo is a simple and fun way to keep students engaged during lectures.

Reference:
Another example of lecture bingo can be found at http://www.texastandi.unt.edu/basics/lecture_bingo.pdf.
Mini-Cases (Group Activity)

**Learning Values:** Foundational Knowledge, Application Learning, Integration

**Activity Description:** Unlike case studies typically used in business or law classes, mini-cases use short pieces of information, such as a newspaper article, video clip or a poem, as the focus for group discussion. Students will work in groups to analyze the information, discuss the issue, and make recommendations or predict outcomes.

**Activity Purpose:** Helps students develop analytical and problem solving skills. A mini-case can be used at the end of a unit to allow students to apply what they’ve learned.

**Implementation Steps:**
1. Organize the students into small groups (3-6 students per group).
2. Create a list of 3-4 questions for the students to answer. The first one or two questions should help the students analyze the issue or problem and identify facts and assumptions. The next one or two questions should help the students speculate on possible outcomes.
3. Within each group, the members must reach a consensus in their answers to the questions.
4. Have each group present its response. Encourage the class to discuss the implications of all the recommendations.

**Additional Information:** Examples of mini-case study materials: a chart or graph, a newspaper or magazine advertisement, a television program or commercial, a clip from a movie, a podcast of a radio program, a controversial song.

**Reference:**
Muddiest (or Clearest) Point

**Learning Values:** Foundational Knowledge, Application Learning, Integration, Human Dimension, Caring

**Activity Description:** After a lecture or reading assignment, ask the students what points they thought were the “muddiest,” or most unclear. Have the class discuss the concepts that are identified. For additional discussion, ask what points were the most clear, and why.

**Activity Purpose:** To encourage the student to think about the material and to let you know if there is something that is unclear or confusing. The class discussion allows students to share their interpretation of the same material to introduce new ways to conceptualize the material.

**Implementation Steps:**
1. Using an open discussion format, ask students to answer this question: “What was the “muddiest point” in today’s lecture/reading?”
2. Encourage other students to contribute to the discussion based on their understanding of the concepts.
3. Clarify as needed, and make sure to address misinformation as an opportunity to clarify those “muddy” concepts.

**Additional Information:** This activity could be combined with the Fish Bowl activity.

**Reference:**
One Minute Paper

Learning Values: Foundational Knowledge, Application Learning, Integration, Human Dimension, Learn How to Learn

Activity Description: In this activity, students are asked to spend one minute writing about an assigned topic. Using the activity to reinforce readings or exercises works well. The activity can also be used to determine what content areas teachers should focus on.

Activity Purpose: One Minute Papers have been used for everything from attendance to testing. Like the Fish Bowl activity, the One Minute Paper gives all students—even the quiet ones—the opportunity to participate. The One Minute Paper helps focus the students’ attention on an important point and is also a quick and easy way for an instructor to check for understanding.

Implementation Steps:
1. Hand out small sheets of paper or note cards to the students.
2. Pose a question that students should answer on the paper.
3. Give the students one minute to write their answers.
4. Collect the papers and discuss the responses or save for future use.

Additional Information: This activity provides immediate feedback which the instructor can use to adjust lesson plans or teaching strategies.

Reference:
Pass the Chalk

**Learning Values:** Foundational Knowledge, Application Learning, Integration, Human Dimension, Caring

**Activity Description:** Pass the chalk around the classroom to control and encourage discussion.

**Activity Purpose:** This activity allows everyone in class to participate. Since students never know when the chalk will be passed to them, it encourages attention. Pass the Chalk also gives the instructor immediate feedback.

**Implementation Steps:**
1. Use a piece of chalk, a pen, or some other object that can be passed around easily.
2. To get things started, give the chalk to a student and then ask a question.
3. The student with the chalk answers the question and chooses another student to pass the chalk to.
4. The recipient takes the chalk, answers the next question, and passes the chalk on to another student. This process continues until everyone in class has had the chalk at least once.
5. A student who provides an incorrect answer may still pass the chalk but will have another opportunity to answer a different question. The chalk should always be passed to a student who has not yet had the chalk or who has not answered correctly.
6. The instructor may at any time intercept the chalk and give it to a particular student.

**Additional Information:** A soft toy or tennis ball can be used in large classrooms—a student can (gently) throw the toy or ball to another student across the room.

**Reference:**
**Performance Video Tape/Recording**

**Learning Values:** Application Learning, Integration, Human Dimension, Caring, Learn How to Learn

**Activity Description:** Student performance, presentation, speech, or activity is recorded for immediate playback. This provides an opportunity for students to see their performance themselves immediately after it is given. Students can see what they did well and where improvement is needed. Faculty can use playback to stress suggestions and feedback.

**Activity Purpose:** To provide instant and future record for review by students and faculty. Here’s an example: A professor used this activity to provide feedback for students learning Music Conducting. Each performance was videotaped. After presentation the tape was rewound and played back while the professor discussed the performance with student.

**Implementation Steps:**
1. Determine the appropriate recording method for activity. Tripod and ote control provide a less invasive method for taping an activity.
2. Set up equipment before performance so it is part of the environment when student arrives. This will help to minimize any affects that the equipment will have on performance anxiety.
3. Set up playback equipment so that immediately after the performance the activity can be reviewed.

**Additional Information:** In addition to immediate playback students may request copies for future reference. The Faculty Development Center (FDC) (http://www.webster.edu/ietl/) at Webster University maintains video equipment for taping, editing, and producing video for performance recording.
Pictures to Stimulate Discussion

**Learning Values:** Application Learning, Integration, Human Dimension, Caring,

**Activity Description:** Photographs, charts, cartoons, or any other visual materials are used to emphasize learning points and help students synthesize the material.

**Activity Purpose:** This activity helps visual learners interpret complex topics. It also provides an activity for all students to interact and discuss how the picture relates to the class lecture.

**Implementation Steps:**
1. Have students find pictures in newspapers, magazines, or online. Alternatively, the instructor provides a picture that is particularly relevant to the topic being discussed.
2. Ask the students to write a short paper about their chosen picture and how it relates to the lecture. Or have the students show their pictures and ask the class to discuss the pictures. Encourage the students to use terms from the lecture or readings.

**Additional Information:** Pictures can come from news stories, advertisements, or online sources.

**Reference:**
Pre-Class Reading Responses

**Learning Values:** Foundational Knowledge, Application Learning, Integration, Human Dimension, Caring

**Activity Description:** Course discussion tools, emails, or student blogs are used to collect information from students prior to classroom discussion. The information is e-mailed to the faculty teaching the course who reviews the information “just-in-time” for the next class discussion.

**Activity Purpose:** This activity helps students gain a deeper understanding to reading assignments and helps faculty determine which concepts the students find difficult or confusing.

**Implementation Steps:**
1. After completing a reading assignment, students respond to 3 questions about the reading assignment using an electronic medium of the teacher’s choosing.
2. Two questions deal with the week’s reading content – the student must read the assignment to be able to answer these questions. The 3rd question is always the same, “Please tell us what you found difficult or confusing in this reading assignment. If you did not find anything difficult or confusing, tell us what you found most interesting.”
3. After reviewing the students’ answers, the instructor can adjust the lecture as necessary.

**Additional Information:** Course discussion tools provided in WorldClassRoom can be used to collect the pre-class information needed in this activity. Visit the FDC site (http://www.webster.edu/fdc/) for more information regarding resources.

**Reference:**
This method is known as “just in time” teaching. More information about “just in time” teaching can be found at http://serc.carleton.edu/introgeo/justintime/references.html.
Role Playing for Difficult Topics

**Learning Values:** Integration, Human Dimension, Caring, Learning How to Learn

**Activity Description:** Learning complex subject matters can be difficult for students. Have students develop scripts and then act them out as a way to create interaction between the students and to create opportunities for repeated review of important but difficult concepts.

**Activity Purpose:** To enrich student understanding of difficult concepts.

**Implementation Steps:**
1. Break the class up into groups large enough to have enough players to act out the scripts. Try to identify extroverted and/or creative individuals and distribute them as evenly as possible.
2. Divide the course content that is being reviewed into different chunks. Give each group a chapter, section, or concept to work with.
3. “Creativity, humor, and factual, conceptual correctness are to be encouraged. (Hoffman, 1991)”
4. When the time comes, have the groups perform their scenes.

**Additional Information:** Care should be taken to keep this activity fun – try to make it non-threatening by providing a light-hearted example. For an example, visit: http://insects.ummz.lsa.umich.edu/MES/notes/entnote22.html or http://serc.carleton.edu/introgeo/roleplaying/.

**Reference:**
Think/Pair/Share or Write/Pair/Share

Learning Values: Learn How to Learn, Integration, Human Dimension

Activity Description: Students work in groups of 2 to discuss an issue or answer a question related to the topic.

Activity Purpose: Helps the instructor assess student understanding of the topic, gets all students involved, encourages teamwork.

Implementation Steps:
1. Ask the students to partner with another student, and give them an issue to discuss or a question to answer.
2. Give the students a few minutes to discuss their ideas with their partner.
3. Ask the pairs of students to share their answers with the rest of the class.

Additional Information: This activity requires very little preparation time and is a good way to get discussion going. You could also use this activity near the end of class—have the pairs of students write down their answers and turn them in, then review at the next class meeting.

Reference:
Using Video Clips to Pique Student Interest

Learning Values: Human dimension, Caring, Integration

Activity Description: There are many ways to use video to capture students’ attention and increase interest in a topic or subject area. Viewing clips can help learners make a connection to something they care about and provide a visual experience that they can relate to an idea or subject area. One effective way to utilize video as an active learning tool is to create video clips from a popular recognizable film that highlights an idea or topic.

Activity Purpose: This activity breaks up the routine of lecture and gives students the opportunity to think creatively.

Implementation Steps:
1. Capture video and import into presentation.
2. Stop the clip at the appropriate point and ask the students to write down what they think happens next. They can do this individually or in small groups.
3. Have the students present their “story endings” to the rest of the class.

Additional Information: Requires some video capture and editing equipment and software. There are several free tools that faculty can use to capture and edit video clips. Clips can be played from a laptop, CD, DVD, Web Site, or as a component in a presentation.

The Webster University Faculty Development Center (FDC) provides hardware and software for capturing, editing, and packaging video for teaching purposes. The FDC sponsors workshops and training events to help faculty gain the necessary skills to use video as a learning tool.

Reference:
WebQuest

Learning Values: Foundational Knowledge, Application Learning, Caring, Learning How to learn, Human Dimension

Activity Description: “A WebQuest is an inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the internet.” (Dodge, 1997) With a WebQuest, the teacher designs a virtual field trip, allowing students to use the many resources of the web in a way that is focused by the instructor to help the student guide student learning.

Activity Purpose: Aids students in constructing meaning out of complex topics. One of the complaints educators have regarding the Web is that it often presents too much unverified information on a topic. That characteristic of the Web is what makes WebQuests successful. During the process of compiling information on a topic, students begin to formulate concepts and construct meaning of complex subjects.

The Web provides a working environment where students have access to a variety of information and differing opinions. WebQuests are designed to focus on the content of websites—to support learners' thinking at the levels of analysis, synthesis and evaluation.

Implementation Steps:
1. Choose a topic or topics that are focused enough for students to explore.
2. Test the topics out – make sure the Web is a good tool for exploring this concept (there may be too many, too little, or confusing results).
3. Create instructions for the WebQuest that include what the students should do. A WebQuest should have students do more than simply visit and summarize sites. Guide their efforts by providing specific sites they should visit, but leave things open to exploration.
4. Next, assign the WebQuest to small groups.
5. Have each group report its findings to the rest of the class.
**Additional Information:** The FDC has incorporated WebQuests into several Faculty Development Training Classes. One example was: Participants were broken up into groups of 3. Each group was assigned to find 3 examples of Active Learning on the Internet. They were then to choose the best example and present it to the rest of the class using the actual information they discovered in the WebQuest.

For more information on WebQuests, including a database of examples, visit http://webquest.org.

**Reference:**
