Integrating Microcomputers Into The Classroom

Lesley University
COMP 5106

COURSE MATERIALS
BY

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Lesley University School Of Education
Special Needs For Inclusion

To all students in this class

       Lesley University in committed to ensuring that full participation of all students in its programs. Accordingly, if a student has a documented disability, and, needs a reasonable accommodation to attend, participate or complete course requirements, then he or she should inform the instructor at the beginning of the course. For further information about services through Lesley University foe students with disabilities, please contact the following Student Affairs offices:

       Coordinator of Disability Services: 617 3498194   or   617 349 8530

ATTENDANCE POLICY - GRADUATE PROGRAMS

1. The academic integrity of our programs and our institutional accreditation depend on students attending all scheduled class meetings.
2. Students should discuss with faculty, in advance, any portion of a class meeting they cannot attend.
3. Faculty reserves the right to set specific attendance requirements for their course. This applies to all models of delivery including Institutes, Residencies, Workshops, etc. The faculty establishes expectations as part of their syllabus regarding emergency and milestone circumstances that may necessitate student absence from class. Absence from class may have an adverse effect on a student's grade.

In setting these requirements, faculty will be guided by the following standards:

Weekend Model:
- Missing up to the equivalent of one full day over two weekends students are responsible for contacting the instructor to discuss the nature of the emergency ad "milestone" circumstance, whether the course attendance expectations will permit make-up work or whether there may be an adverse effect on the final grade.

- Missing more than the equivalent of on full day over the two weekends will result in a grade of technical fail on the student's transcript. The class needs to be retaken and tuition paid.

- Serious family emergency and significant "milestone" circumstances may warrant an exception to these requirements and will be considered on a case-by-case basis in consultation with the Program Director.

4. The faculty have full discretion regarding make-up expectations. Make-up of assignments missed including those completed in and out of class, as well as a specific course content (i.e. videos, reflection, discussion, readings, etc.), may e required.

School of education Approves November 3. 1998

Table of Contents

INTEGRATING TECHNOLOGY
INTO THE SCHOOL CURRICULUM

COURSE DESCRIPTION:

COMP 5106 will provide the student with practical experience in curriculum planning and implementation. Through the use of a variety of software, the student will focus on making decisions about content, skills and ways to use the computer to supplement, enhance and extend the school curriculum.

COURSE OBJECTIVES:

1. To increase the student's ability to choose and implement appropriate software for use in their classroom, school and/or district.

2. To increase the student's ability to develop curriculum which considers appropriate computer applications.

REQUIRED TEXTS:

Thornburg, D. (1991). Edutrends 2010: Restructuring, technology, and the future of education. San Carlos, CA: Starsong Publication.

Suggested texts:

American Psychological Association. (2001). Publication manual of the American Psychological Association (5th edition). Washington DC: Author.

I am looking forward to meeting each of you. This class promises to be a very useful part of your Masters program. We will be using many different types of software to brainstorm ways of to enhance curricula in your schools. If you have a piece of software that you are particularly fond of, please bring it and share your ideas about it with the class.

Several software companies will be represented in the Lesley materials. Perhaps some of the best software companies are: Tom Snyder Productions: 800-324-0236; Sunburst/Wings: 800-321-7511; MacWarehouse: 800-255-6227 (also IBM MicroWarehouse). Please bring information on your favorite software companies to add to this list.

COMP 5106
Integrating Microcomputers Into The Classroom
Jim Mundell
Course Syllabus

1st Weekend

Friday night -
Introductions and all that "stuff"
Course goals, objectives and assignments   Review Pre-course assignment
APA writing format Writer's Workshop
Data Collection I   (Spreadsheet introduction)

Saturday morning -
Learning Theory I   Keirsey/Bates Please Understand Me
STAR Planning Form
Model I: Data collection and representation II: (Database introduction)

Saturday afternoon -
Elements of Successful Classroom Technology
Software Preview & Discussion
Personal Philosophy Part I Integration Plan   (Inspiration)

Sunday Morning -
Discussion of final Project
Discussion of mid-term project (Conceptual Framework)
Design A Curriculum Database

Sunday afternoon -
Learning/Teaching styles(Expanding the curriculum DB to accommodate Learning Styles)
Software Preview & Discussion
Model II: Teacher Tools I   (Designing a spreadsheet gradebook)

2nd Weekend

Friday night -
Project Sharing
Learning Theory II: Kolb's 4 styles
Incorporating Higher Level Thinking Skills & Teaching models

Saturday morning -
Project Sharing
The One Computer Classroom: (Tom Snyder Software)
The One Computer Classroom: (Decisions-Decisions)
Software Preview & Discussion

Saturday afternoon -
Reconceiving the Curriculum/Collecting   Software/Gen Why
Project Sharing
Software Preview & Discussion
Change   Computers &Your Educational Philosophy   (CBAM)

Sunday -
Discussion of final Project
Problem Solving Software
Classroom Management Strategies
Models VI: Stimulating Inquiry Using Environments

ECOMP 5106
Course Assignments & Evaluation

Student Evaluation:

Attendance & Participation 25%
Includes:　1.　Arriving promptly to all sessions
2.　Participation in all group & class discussions
3.　Personal Philosophy
Personal thoughts as an expert in my field

Midterm Project: Conceptual Framework
25%　　Due: _____

APA Format: (see Conceptual Framework)
5%　　Due: _____

Final Project (see pp.4-5) 45%　　Due:
Includes:
1. Personal Philosophy (Done in class)　_____
2. What are the experts saying?　_____
(Conceptual Framework done as mid-term)
3. How can I integrate computers?　_____
(Application)

(Must include a SASE for project to be returned)

Evaluation Criteria:

Projects will be graded on the basis of completeness, originality and creativity, open-ended approach to education, appropriate use of computer technologies and practicality for the classroom. Requirements listed are minimum requirements and will earn the student a "B" grade. An "A" grade will be awarded to those students who surpass the minimum requirements and demonstrate a high degree of effort and thought. Lesley University suggests that time spent on class assignments should be approximately twice the time spent in class (40 hours of in-class time & 80 hours of out of class time).
Projects must be word processed, spell checked, proof read and in APA style where appropriate.

Final Project:

The final project is an accumulation of information, introspection and application techniques. The finished project could take several forms. For some, it will be a portfolio with 3 main sections (personal expertise, other experts and application). The project should reflect personal growth of the student as a result of their participation in this class. In addition, the project should emphasize learning styles, data collection and analysis, critical thinking, problem solving, knowledge navigation, thematic inquiry, learning portfolio production and/or creative media performance.

Projects submitted after the deadline date will not score higher than a B+ unless arrangements are made with the instructor.

Integration Plan
Final Project

An Integration Plan is an essential tool for implementing change and using technology to enhance instruction and learning. In addition, an Integration Plan can help the master's degree student bring a sharper focus to his/her Lesley program. Developing the plan involves understanding self, reviewing current knowledge presented by other experts and knowing how to combine the understanding of self and information from experts to apply it to classroom curricula. It is important to note that this initial plan can only assist you in the beginning of your journey. This plan should be considered dynamic, not set in stone. It is constantly changing as you develop more expertise in your area and as technology changes over time.

Personal Philosophy
I am an authority.
What do I think?
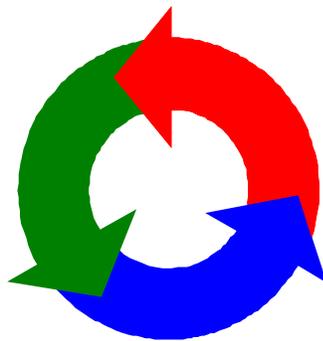
Applications
We are the authorities. Using the best thinking and information currently at our disposal, what is the best course of action?

Conceptual Framework
Others are authorities:
What do they think?

The final project will be your personal Integration Plan. During the class you will have an opportunity to develop a roadmap for the integration of technology into your school's curricula. The final project will reflect your work in the following three areas.

Personal philosophy: *I am an authority. What do I think?*
In this part of the plan, describe your own beliefs, ideas, and perceptions about what you are and what you care about the most and why. This is an opportunity to explore your vision and reflect on your past, present and future in education.
Guiding questions:
- ✓ What are your core values and how do they effect your teaching style?
- ✓ What are your thoughts on education, learning, and schools in general?
- ✓ What educational issue do you care passionately about? Why is it important to you and what role will it play in developing your vision for the future?

✓ What is my vision for integrating technology?

Conceptual Framework: *Others are authorities. What do they think?*

In this portion of the Integration Plan, analyze what others are saying about the use of technology in schools, learning styles and implementing change. The basic framework for this section is to review and comment on what other experts are saying. The final product will be a paper that presents key ideas that have an impact on your vision, why they impact you and how they effect your core values and educational philosophy. **This portion of your project will also receive a grade for the APA format in which it is presented**. It is recommended that you bring an APA formatted rough draft to the second weekend so that it can be evaluated for APA format.

 Guiding questions:
- ✓ What are the key concepts you have been reading?
- ✓ Who are the "BIG" names in the field, what are some of the major debates or key issues and how have these debates/issues shaped the thinking in this field?
- ✓ How can the information gleaned from other experts be used to support your passion?

Application:

We are the authorities: What is our best course of action?

In this final portion of your Integration Plan, translate your vision and passion into reality by developing a strategy to integrate technology into your class. This section can take many forms. It could be a series of lessons or an inservice, perhaps a grant application or maybe a personal goal to become more familiar with a software title. Typically it is a unit of instruction that includes several STAR-planning forms. Regardless of the format, this section should demonstrate skills learned during this course and emphasize learning styles, critical thinking, problem solving, knowledge navigation, thematic inquiry and media presentation and appropriate use of word processing, database and spreadsheet tools.

Guiding questions:
- ✓ What do you want to accomplish?
- ✓ What change model will best assist me in developing a plan for action?
- ✓ What skills do I have that will help me? Who in my building can I use as a resource?
- ✓ What are my technology limitations and how do I overcome them?
- ✓ How do I develop my application so that others may follow? (STAR, inservice, ?)

Formatting Your Paper in APA Style.

Lesley University's National Outreach Program requires students to use APA format when submitting written projects. The following suggestions are made for Microsoft Word and are intended to help you get started in this fairly simple style. It is not meant as a substitute for the APA Style Manual. Students are encouraged to purchase a manual for the rest of their masters degree program. Before you start typing, follow these guidelines.

1. **Set all margins to 1 inch.**

   From the File menu, select PAGE SETUP and select MARGINS. Check the margins, top, bottom, right and left to be sure they are set at 1 inch each. To change the settings, click in the appropriate box and type 1. Tab from box to box until every margin has been changed. Click on OK to return to the document.

2. **Create a header that will include a short title and page #.**

   From the View menu, select HEADER AND FOOTER. The header will appear at the top of your page (WYSIWYG style) in which you can type your running head and page number. Before typing, select the icon for right justify in the ruler. Type the running head and then 5 spaces. Finally, select insert page # from the MENU BAR. Return to your document by selecting CLOSE from the menu bar or choosing NORMAL under the View menu.

3. **Select a font size and style (12 pt., Courier)**

   To select the type size and font style, you must make two separate selections. Begin by opening the Format menu. Select FONT and then select either TIMES NEW ROMAN OR COURIER. I prefer COURIER but either is OK. Next, in the Size menu bar be sure that it shows 12 pt. If it doesn't, click, hold and drag until 12 pt. has been selected. (You may have to format the header fonts the same way while viewing the header.)

4. **Double-space all type.**

   From the Format menu, select PARAGRAPH and in the spacing portion of the menu, select double under line spacing.

5. **Check your references**

   References cited in your document should be in parentheses and include the author's last name(s), year of publication and, if a direct quote, page number(s).

6.   Create a reference section.

At the end of your document, make an alphabetical list of all the sources cited in your document. REFERENCES should be the top line and centered. Each reference should be treated as a separate paragraph with the first line indented and beginning with the author's last name and first initial. Each section of the reference ends with a period. See examples in the following paper and **be sure to check out the APA Style Manual**

A.P.A. Style Sheet

General Rules for A.P.A. Style

This style sheet is an incomplete reference at best and not meant to be a substitute for the book, only a guideline. It is based on the **Publication Manual of the American Psychological Association, (5th edition). (2001). Washington D.C.: American Psychological Association.**

Titles:

Only the first letter of the first word is capitalized except for proper nouns, the first word after a colon or semicolon and journal titles. Refer to a sample paper for proper capitalization on the title page.

In journal titles, the first letter of all significant words is capitalized. Titles of articles are NOT put in quotation marks.

Authors' Names:

The authors' names are always inverted and the first names are always abbreviated. John B. Smith ----> Smith, J. B. Gender of the author is masked by using initials.

Format:

Papers should be printed on 8 1/2 x 11 inch non-erasable paper using double spacing throughout with 1 inch margins on all sides (top, bottom, right and left sides). Do not divide words at the end of a line. Do not justify the lines; leave them uneven along the right edge.

See the last pages for examples of the format for the title page, abstract, first page, middle pages and reference list. You will be using a running head (abbreviated title) and page number in the one-line header. Every page is numbered, beginning with the title page. All text is double-spaced.

<u>Subheadings</u>:

       If you want to divide your paper into a few equal sections, you will use centered headings with only the first letter of all significant words capitalized. If you need to break down these major sections of your paper into sub-units, check the rules described in the APA Manual for more detail (3.31, pp. 113-115).

<u>Documentation</u>:

       In the A.P.A. style, you will use two different types of documentation:
1. Parenthetical in-text citations
2. A reference list

<div align="center"><u>Parenthetical Citation</u>s</div>

<u>The Standard Citatio</u>n

       Authors in scientific discipline stress attributing material to the author(s) as it is presented. For this reason, the amount of information needed in the citation changes depending upon whether the author's name has been mentioned in the text. These citations are placed at the end of the sentence, which contains the end of the quotation or paraphrase.

A)   When you have mentioned the author's name in the text, only the date of publication is needed in parentheses.
       Example: According to Smith … the assent of … (1991).

B)   When the author's name is not mentioned in the text, then both the author's name and date are needed in parentheses.
       Example: …the assent ……… (Smith, 1991).

If a direct quote is cited in the text, the page number the quote is taken from is also added to the parentheses.
       Example: "an interesting opinion … " (Smith, 1991, p. 123).

       <u>Special Cases</u>:
       In the special cases below, all "A" examples are for cases when the author's name has been mentioned in the text. All "B" examples are for cases when the author's name has not been mentioned in the text.
       1.   If the text is by a corporate author:
           A)   The University of Colorado study shows … (1994).

           B)   (University of Colorado, 1994).

2. If two authors have the same last name, give full initials for both authors:
   A) Both C.G. Jones and R. J. Jones have done … (1987; 1992).

   B) (C.G. Jones, 1987; R. J. Jones, 1992).
3. To cite more than one work by the same author simultaneously, mention the name only once.
   A) In two articles,… Heath argues… (1989, 1993).

   B) (Heath, 1989,1993).

4. To cite works by different authors simultaneously, follow alphabetical order and separate with semicolons.
   A) Dobson, Heath, and Smith agree that (1988; 1993; 1991).

   B) (Dobson, 1988; Heath, 1993; Smith, 1991).

5. To cite a personal communication, such as a letter, memo, or telephone conversation which has not been officially published:
   * This citation does not invert the author's name and it is also not repeated in the reference list.
   A) The director of the trace committee, Jack Robinson, stated … (personal communication, May 5, 1990).

   B) (J. Robinson, personal communication, May 5, 1990).

The Reference List

The reference list is an alphabetical list of all the sources cited in the paper. When there are two or more works by the same author, list each as a separate reference and in chronological order. The reference list is designed to give the reader sufficient information to locate the sources. The reference list is also double-spaced throughout. The first example that follows is provided to show correct spacing,format and punctuation.

Author's last name, First initial. (date of publication). Article title. *Journal title*, Journal volume #. Journal issue #, pages.

Rather than give specific examples, a general form descriptor will follow. Specific examples can be found in the APA manual and will be given in the sample paper that follows.

APA Fifth Edition: General Format
All references should be double spaced.

Periodical:

Author, A. A., Author, B. B. & Author C.C. (1994). Title of the Article. *Title of the periodical, xx. xx-xxx*.

EXAMPLE:

Pettig, K. (2000, September). On the road to differentiated practice. *Educational Leadership*, *58,*

20 - 24.

Periodicals include items published on a regular basis; journals, magazines, scholarly newsletters, and so on.

Nonperiodical:

Author, A. A. & Author B. B. (1994). *Title of the work.* Location, Publisher.

EXAMPLE:

Papert, S. (1993). *The children's machine: Rethinking school in the age of the computer.* New

York, Basic Books.

Part of a nonperiodical:

Author, A. A. (1994). Title of the chapter. *Title of the book* (pp. xxx-xxx). Location, Publisher.

Nonperiodicals include items published separately: books, reports, brochures, certain monographs, manuals, and audiovisual materials.

Online periodical:
Author, A. A., Author, B. B. & Author C.C. (2000). Title of the article. *Title of the periodical*,
xx.xx-xxx. Retrieved month day, year from source.

EXAMPLE:
Vanden Bos, G. Knapp, S. & Doe, J. (2001). Role of reference elements in selecting resources

for undergraduate students. Journal of Bibliographic Research, 5, 117 - 123. Retrieved

October 31, 2001, from http:/www.lesley.edu/library/articles/student.html

Online document:
Author, A. A., Author, B. B. & Author C.C. (2001). *Title of the work*. Retrieved month day, year
from source.
(Stand alone document, no author, no date):
GVU's 8th WWW user survey. (n.d.). Retrieved August 8, 2001, from http://www.cc.gatech.

edu/gvu/user_surveys/survey-1997-10/

**Electronic sources include aggregated databases, online journals, Web sites, Web
pages, newsgroups, Web or e-mail-based discussion groups and Web or e-mail-based
newsletters.**

A sample paper follows

Running head: A CASE FOR ALTERNATIVE ASSESSMENT

A Case for Implementation of

Alternative Assessment as a

Means of Evaluation

Jim Mundell

Lesley College

Position Paper

Abstract

Today's classrooms are quite different than the classrooms of

the past decades. Teaching styles and responsibilities have

changed. Technology has been introduced. Student roles and

expectations are different. However, the way in which we

evaluate students has remained virtually unchanged for the past

one hundred years. This article explores some of the reasons for

implementing a new form of student evaluation. Current research

on learning will be used to explore the implementation of

alternative assessment programs in today's classrooms.

A Case for the Implementation of

Alternative Assessment as a

Means of Evaluation

Introduction

The classroom of today is quite different than the

classrooms of the past. Roles for teachers and students have

changed. The teacher is no longer the center of the classroom.

She is no longer required to disseminate knowledge and fill up

the minds of the students. The teacher has become a director of

learning, a facilitator, a guide, and a cheerleader. Today's

teachers are structuring lessons based on a great deal more

information about learning processes than ever before. Students'

roles have also changed. Today's students take a more active

role in their learning. Students are setting goals, choosing

different paths and developing the sort of skills that will make

them (hopefully) committed to the process of learning for a

lifetime.

Today's paradigm

These changes are quite remarkable. Even more remarkable is

the fact that in this transition to a student centered learning

process; the way that we evaluate students has remained

basically the same. Tests, quizzes and worksheets have measured student progress for the past several decades (Tierney, Carter, Desai, 1991). These tests are measuring what students have learned, not what they can apply (Enoki, 1992). Unfortunately, these tests are measuring a very small part percentage of what students know (Tierney et al., 1991). Gardner (1983) has suggested that there are as many as seven different intelligences. Gardner lists these intelligences as linguistic, logical/mathematical, musical, spatial, bodily/kinesthetic, interpersonal and intrapersonal. Classrooms typically only teach to three (linguistic, logical/mathematical, bodily kinesthetic) of the seven. Tests and quizzes typically only measure two of the seven. What then is done to measure the growth of the other intelligences? Standardized tests no longer fit the style of teaching and learning in today's classrooms. Even the SAT tests for college bound students are changing to better measure student progress and preparation for higher education (College Board, 1994).

Thornburg (1989), a technology futurist, suggests that it is time to include more meaningful evaluation processes in our classrooms.

Alt.Assess.Lesley.5106.jmdl

We need to create environments in which students have

furrowed brows - where they are confronted with questions

without easy answers. … We need to acknowledge that

children are born problem solvers, and that, given the

chance, they can tackle real problems and produce practical

results. We need to design and implement assessments that

encourage students to treat the content of instruction as

the starting point, not the ending point, of knowledge (p.

101).

One option for an alternative assessment would be

portfolios. A portfolio is a collection of student work that

demonstrates the progress of the student. The construction of

the portfolio can take many different forms but the student

should play a large role in deciding what is to be included.

Regardless of how they are developed, portfolios can provide a

very accurate picture of the learner and be a tool for the

student in setting goals and providing feedback to the teacher.

Portfolios have many qualities that make them useful as

assessment tools. They represent authentic measurement devices,

create an accurate picture of the learner, and allow students to

be evaluated against themselves. Evaluation and instruction are

not seen as separate parts but as part of the learning process,
and portfolios are tools to help students set goals and measure
personal progress toward these goals (Mundell, Delario, 1994).
Portfolios focus the learning tasks to the learner and provide a
way for students gage their progress. More importantly,
portfolios "…acknowledge that children are born problem solvers"
and "encourage students to treat the content of instruction as
the starting point, not the ending point, of knowledge"
(Thornburg, 1989, p. 101).

<div align="center">Conclusion</div>

Implementation of alternative assessment programs helps
complete the transition from the classic industrial age
instruction to today's more enlightened techniques. By allowing
students to construct their knowledge through a continual
evaluation and goal setting process, students develop ownership
of their learning. Alternative assessment gives students more
ownership in their work, increases responsibility for their
learning, develops critical thinking skills and enhances their
self-concepts as learners (Taylor, 1991).

References

Changes in SAT construction. (1994). Berkeley, CA: College Board
    Publication.

Enoki, D. Y. (1992, January). *Student portfolios and profiles: A
    holistic approach to multiple assessment in whole language
    classrooms.* Paper presented at the meeting of the American
    Educational Research Association, San Francisco, CA.

Gardner, H. (1983). *Frames of mind: The theory of multiple
    intelligences.* New York: Basic Books.

Mundell, S., Delario, K. (1994). *Practical portfolios.* Denver,
    CO: Teacher Ideas Press.

Taylor, P. (1991). *In the process: A visual arts portfolio
    assessment project.* Descriptive report, (ERIC Document
    Reproduction Service No. ED 232 018).

Thornburg, D. (1989). *Education, technology and paradigms of
    change for the 21st century.* San Carlos, CA: Starsong
    Publication.

Tierney, R., Carter, M. A., & Desai, L. E. (1991). *Portfolio
    assessment in the reading and writing classroom.* Retrieved
    April 12, 2002 from http://www.lesley.edu/library/articles/education/
    student.html

STAR PLANNING FORM

I. Setting

    Title

    Level

    Subject

    Overview of Lesson

    Knowledge Goals

    Skill Goals

    Affect Goals

II. Teaching Plan

    Learning Theory & Style

    Handout material

    Software

    Hardware & Arrangement

    Student Grouping

III Application

    Prerequisite instruction

    Lesson Plan
    Describe the Who, What, When, Where ad How of the lesson.

    Notes to the observers:

    List of extension activities:

IV Reflection

STAR PLANNING FORM

I. **Setting:**

    Title:

    Level:

    Subject:

    Overview of the lesson:

    Knowledge Goals:

    Skill Goals:

    Affect Goals:

II. **Teaching Plan:**

    Learning theory & Style:

    Handout materials needed:

    Software:

    Hardware & arrangement:

    Student Grouping:

III. Application:
Prerequisite Instruction:

Who   **What**   **When**   **Where**

    How

Notes to observers - activity, outcomes, evidence

Extension activities

IV. Reflection:
Notes for next time:

STAR PLANNING FORM

I. Setting:
Title: Whirly - Gigs

Level: Grade 8

Subject: Data collection and manipulation

Overview of the lesson: Students will be making "Whirly - Gigs" to determine the best blade length. Students will be folding, dropping and timing the fall of their "Whirly - Gig" from a predetermined height.

Knowledge Goals:
1. Use computer spreadsheet to record and analyze data.
2. Draw conclusions based on comparison of data collected.

Skill Goals:
1. Know how to collect data accurately.

Affect Goals:
1. Practice appropriate classroom behaviors for lab activities.
2. Practice good group skills.

II. Teaching Plan:
Learning theory & Style: Style 1 & 4

Handout materials needed:
2	2" strips of paper for Whirly-Gigs
1	Lab form
	a timing device with at least 1/10th second capability

Software:
Any software with Spreadsheet. (Microsoft works, Claris works, etc.)

Hardware & arrangement:
Computers for small groups (2-3)

Student Grouping:
Small groups of no more than 3 in a group.

III. Application:
Prerequisite Instruction:
Demonstrate data entry in spreadsheet format.
Discuss printed summary of yours and group data.
Discuss appropriate behaviors during lab activities.
Discuss importance of accurate data collection and problems associated
with data collection.

Who   What   When   Where   How

Students will be folding small helicopter to be dropped from a predetermined height, preferably a stairway. Each drop will be timed and recorded on the data sheet. After three drops, the blade

length will be increased one (1) centimeter and dropped again. Averages for each blade length will be calculated and recorded in the spreadsheet. Students will discuss the best form of reporting their data and conclusions to the class. Data will be presented and conclusions discussed. Students will be given time to reflect on the activity and asked to write a paragraph about the goals of the activity.

Notes to observers - activity, outcomes, evidence

Students will be active in the first part of the activity and may appear to be a little chaotic while they are gathering data.

Recording data will involve quiet time at the computer. Discussions will follow as to the best way to graphically show their data to the class and what the conclusions mean.

Class discussion will follow computer time.

Quiet reflection time will end this activity.

Extension activities

Students discuss possible extensions of the problem.

What other modifications can be made to extend the flight time.

How would scientists gather this data?

What controls were used in this experiment and how would you extend

those to others modifications. What is the importance of controls?
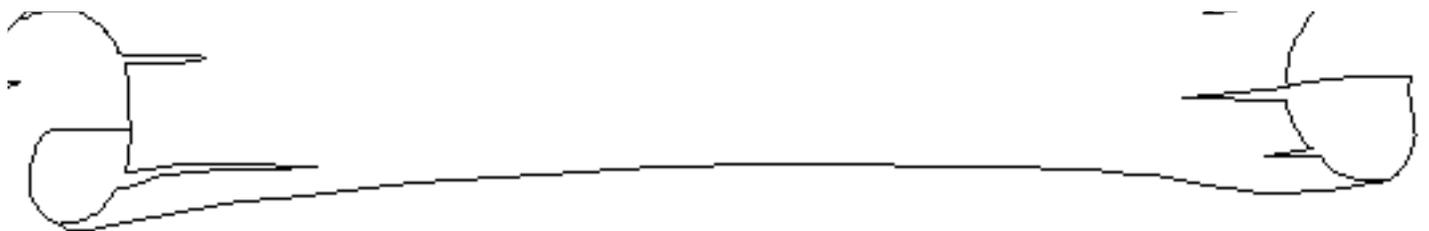
IV. Reflection:

Notes for next time:

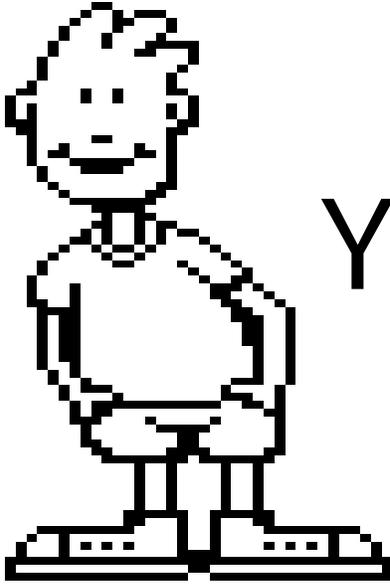What problems did the lab pose for other classroom teachers while students were dropping Whirl-Gigs?

What is sufficient instruction necessary for students to integrate spreadsheets into their lab?

How much lead-time is needed for reserving computers?

What is the fewest computers needed for this lab?
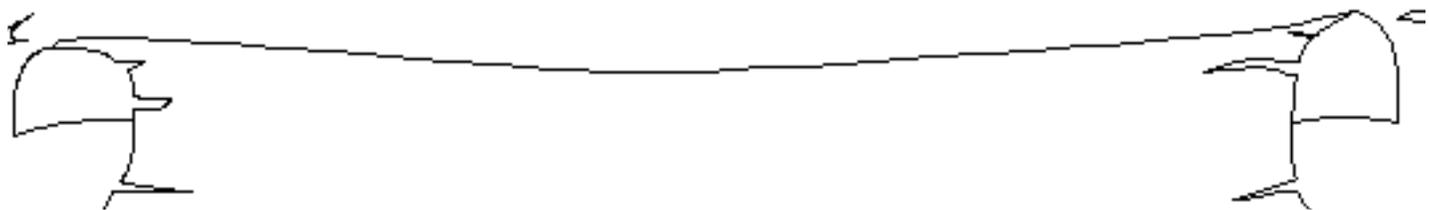
UNDERSTANDING

YOURSELF

COMES

FIRST

PHILOSOPHIES IN EDUCATION

RERFLECTIVE vs. IMPULSIVE

Two basic philosophies or styles of education have emerged over the past 100 years. Each has had its major proponents and each a different picture on how people learn. Here is a comparison of these two different philosophies.

Impulsive	Reflective
Psychology: • Piaget / Kohler http://www.indiana.edu/~intell/piaget.html	**Psychology:** • Thorndike / Skinner http://www.psy.pdx.edu/PsiCafe/KeyTheorists/Thorndike.htm
Education: • Dewey http://www.infed.org/thinkers/et-dewey.htm • Bruner http://www.infed.org/thinkers/bruner.htm	**Education:** • Gagne http://www.psy.pdx.edu/PsiCafe/KeyTheorists/Gagne.htm • Taba, Turner
Goals of education: • Produce thinking adults • Learn to solve problems • Think independently	**Goals of education:** • Produce trained adults • Learn skills for work
Form of education: • Grouping/sharing • Enrichment of ideas • Learning is ineffable	**Form of education:** • Grouping/tracking • Acceleration of progress • All learning is measurable
Manifestations: • Discovery approach • Holistic Learning • Cognitive developmental • Learner is active • Teacher is active	**Manifestations:** • Drill and practice • Splinter Skills • Diagnostic-Prescriptive learning • Learner is passive • Teacher is active
Evaluation: • Non-normative • Observing, documenting • Emic perspective (whole)	Evaluation: • Behavioral (normative) • Testing • Etic perspective (parts)
Move from whole to parts: • Gestalt (the aha! Principle)	Move from parts to whole • Accretion of knowledge
Deficit - based approach: • Emphasis on strengths	Deficit - based approach: • Emphasis on weaknesses
Coping strategies: • Cooperative tasks	Redemption: • Competitive

LEARNING STYLES: THE CONTINUUM

IMPULSIVE	**REFLECTIVE**
1. Risk Taker	1. Avoids Risk
2. Wades Right In	2. Waits In A New Situation
3. Does Not Fear Mistakes	3. Wants To Be Correct
4. Global	4. Linear - Hierarchical
5. Whole to Parts	5. Parts to Whole
6. "Soft" Masters	6. "Hard Masters"
7. No Direction Until Needed	7. Wants Direction

Signal:

    Why Do I Have To Do That?

Signal:

    What Do You Want Me To Do?

LEFT-RIGHT BRAIN SKILLS INVENTORY

INSTRUCTIONS: Check the characteristics you think you possess.

1. _____ Ability to recall quickly what you know about a subject when asked.
2. _____ Ability to 'unfold' what you know about a subject as key words trigger memory pockets.
3. _____ Ability to remember lyrics to songs well.
4. _____ Ability to remember melodies of songs well.
5. _____ Learn athletic movements or dance steps best by memorizing the sequence and then talking yourself through the moves.
6. _____ Learn athletic movements or dance steps by imitation.
7. _____ Ability to recall the words you want easily.
8. _____ Ability to recall faces easily, even if you don't remember names.
9. _____ Possess a large vocabulary and learn words easily.
10. _____ Tendency to invent words or describe the function of objects to avoid having to name them. (i.e. the thing-a-ma-jig, the ziggle, the thing you cut with).
11. _____ Ability to think of the names of objects, locations and people quickly.
12. _____ Ability to do map work and geography work easily.
13. _____ Ability to recall chronological events in history well
14. _____ Tendency to get lost in the present moment easily rather than keep track of time.
15. _____ Ability to remember jokes accurately, including the punchline.
16. _____ Possess a very vivid memory of certain past events, even recalling the tastes, smells and sounds, etc.
17. _____ Estimates time well (i.e. Can coordinate a four-course meal or draw up well-timed agendas or lesson plans).
18. _____ Ability to spontaneously change plans on the spur of the moment.
19. _____ Recall in correct sequences the events of your life, from near to distant past.
20. _____ Ability to do geometry and read graphs.
21. _____ Ability to anticipate and head off problems well and to plan ahead often.
22. _____ Ability to read poetry, parables and myths easily and remember the themes and key phrases and passages.
23. _____ Ability to pay attention to a 'figure' (a sound, sight or sensation) and ignore the background or distractions around you.
24. _____ Ability to write poetically or metaphorically or to make up stories well.
25. _____ Ability to do fractions, percents, algebra and statistical math easily.
26. _____ Tendency to use almost the exact same words and voice inflections each time when talking of your experiences or other stories.
27. _____ Ability to read legal documents contracts or instruction manuals easily and to remember the main points of what you need.
28. _____ Determine what is right in any situation by sensing what feels right, often basing actions on an inner sense that impels you to act in a given way.
29. _____ Ability to write clearly and logically

30. _____ Are often aware of the irony, paradoxes and incongruities in life and thoughts.
31. _____ Ability to weigh evidence and make clear cut decisions about what's right or wrong, good or bad, correct or incorrect.
32. _____ Ability to sense moods of individuals and groups quickly and accurately.
33. _____ Ability to shift moods, put personal feelings aside whenever necessary or useful.
34. _____ Ability to concentrate very deeply at times, but not able to cause things to happen.
35. _____ Ability to learn easily from teachers even though you do not like them or feel that they like you.
36. _____ Ability to see a pattern or picture even when only a few clues are present.
37. _____ Ability to concentrate at will, usually without becoming bored, distracted or sleepy.
38. _____ Ability to learn details well only if you can grasp the overall concept first.
39. _____ Ability to notice and remember small details in what you've seen or heard.
40. _____ Ability to be aware of all that is going on around you at once. Even to the point where peripheral activities keep distracting you from attending to any one thing.
41. _____ Ability to spot irregularities quickly and easily (i.e. misspelled words, missing buttons, dented furniture).
42. _____ Ability to learn very well from any teacher that you really like or get along with well but not from those you can't 'connect' with.
43. _____ Ability to make discriminations well (i.e. grading gems or coins, appraising antiques, evaluating craftsmanship).
44. _____ When trying to organize ideas or arrange objects, you wait until things 'fall into place'.
45. _____ Ability to organize information, materials or procedures so they are logical and efficient.
46. _____ Ability to perform at times in athletic events or in the arts in ways tat are beyond your actual ability level.
47. _____ Ability to force yourself to practice or do 'drill work' in order to master a metal or physical skill.
48. _____ Ability to read maps well only if you can rotate them to match the direction you are heading.
49. _____ Possess a good sense of direction and can follow spoken directions easily without needing a map.
50. _____ Tendency to rely heavily on body language in conversation to fully grasp what a person means and to find telephoning and written correspondence much less effective ways of communicating.

Scoring:

Total of checks on the odd questions _____. (Left Brain Characteristics)

Total of checks on the even questions _____. (Right Brain Characteristics)

LEFT MODE CHARACTERISTICS

RATIONAL

RESPONDS TO VERABL INSTRUCTIONS

CONTROLLED, SYSTEMATIC EXPERIMENTS

LOGICAL

OBJECTIVE

LOOKS AT DIFFERENCES

PLANNED AND STRUCTURED

PREFERS ESTABLISHED, CERTAIN INFORMATION

ANALYTIC READER

THINKS AND REMEMBERS WITH LANGUAGE

PREFERS TALKING TO WRITING

PREFERS MULTIPLE CHOICE TESTS

CONTROLS FEELINGS

RESPONSIVE TO STRUCTURED ENVIRONMENT

PREFERS HEIRARCHIAL (RANKED) AUTHORITY STRUCTURES

SEQUENTIAL

IS A "SPLITTER" - DISTINCTION IS IMPORTANT

TALKS… AND TALKS… AND TALKS

IS LOGICAL - SEES CAUSE AND EFFECT

DRAWS ON PREVIOUSLY ACCUMULATED, ORGANIZED INFORMATION

RIGHT MODE CHARACTERISTICS

INTUITIVE

RESPONDS TO DEMONSTRATED INSTRUCTIONS

OPEN-ENDED … RANDOM EXPERIMENTS

PROBLEM SOLVES WITH HUNCHES. LOOK S FOR PATTERNS

SUBJECTIVE JUDGEMENT

LOOKS AT SIMILARITIES

IS FLUID AND SPONTANEOUS

PREFERS ELUSIVE, UNCERTAIN INFORMATION

SYNTHESIZER

THINKS AND REMEMBERS WITH IMAGES

PREFERS DRAWING AND MANIPULATING OBJECTS

PREFERS OPEN-ENDED QUESTIONS

FREE WITH FEELINGS

ESSENTIALLY SELF-ACTING

PREFERS COLLEGIAL (PARTICIPATIVE) AUTHORITY STRUCTURES

SIMUTANEOUS

IS A "LUMPER" - CONNECTEDNESS IS IMPORTANT

IS MUTE - USES PICTURES

IS ANALOGIC - SEES CORRESPONDEMNCES, RESEMBELENCES

DRAWS ON UNBOUNDED QUALITATIVE PATTERNS

THINGS TO REMEMBER ABOUT TYPE

☺ Information about your type has been provided to help you understand yourself and your interactions with others. The proper use of this information is to help people recognize their own and others' gifts.

☺ Your type is the combination of PREFERENCES that you chose when you answered the MBTI Assessment.

☺ It is up to you to decide what type you are, since only you know your true preferences.

☺ There are no "GOOD" or "BAD" individual types and there are no better or worse combinations of types in relationships.

☺ Each of us use all of the preferences at different times. Your type is made up of those that you prefer the most.

☺ Type is not an excuse for doing or not doing anything.

☺ Type does not explain everything; The MBTI Assessment does not measure abilities.

☺ Definitions
   ✓ **Feelings**: a preference for Feelings means you like to make decisions based on values; it does not refer to emotions or feelings.
   ✓ **Judging**: a preference for Judging means that you favor a structured approach in dealing with the outside world; it does not necessarily mean that you are judgmental.

The Keirsey Temperament Sorter
<u>Please Understand Me</u>
<u>Keirsey, Bates (1984)</u>

1. **At a party do you:**   a. Interact with many; including strangers   b. interact with few, known to you.

2. **Are you more:**   a. Realistic than speculative   b. Speculative than realistic

3. **Is it worse to:**   a. Have your head in the clouds   b. Be in a rut.

4. **Are you impressed by:**   a. Principles   b. Emotions

5. **Are you more drawn toward the:**   a. Convincing   b. Touching

6. **Do you prefer to work:**   a. To deadlines   b. Just "whenever"

7. **Do you tend to choose:**   a. Rather carefully   b. Somewhat impulsively

8. **At parties do you:**
   a. Stay late with increasing energy   b. Leave early, with decreasing energy

9. **Are you more attracted to:**   a. Sensible people   b. Imaginative people

10. **Are you more interested in:**   a. What is actual   b. What is possible?

11. **In judging others are you swayed by:**
    a. Laws rather than circumstances   b. Circumstances rather than laws

12. **In approaching others , do you tend to be somewhat:**a. Objective   b. Personal

13. **Are you more:**   a. Punctual   b. Leisurely

14. **Does it bother you more, having things:**   a. Incomplete   b. Completed

15. **In your social groups, do you:**
    a. Keep abreast of others happenings   b. Get behind in the news

16. **In doing ordinary things, are you more likely to:**
    a. Do it the usual way   b. Do it your own way.

17. **Writers should:**
    a. Say what they mean & mean what they say
    b. Express things more by the use of comparisons

18. **Which appeals to you more:**   a. Consistency of thought   b. Harmonious human relationships

19. **Are you more comfortable in making:** a. Logical judgments   b. Value judgements

20. **Do you want things:**   a. Settled & decided   b. Unsettled & undecided

21. **Would you say you are more:**   a. Serious & determined   b. Easy going.

22. **In phoning, do you:**
    a. Rarely question that it will all be said
    b. Rehearse what you say

23. **Facts:**   a. Speak for themselves   b. Illustrate principles

24. **Are visionaries:**   a. Somewhat annoying   b. Rather fascinating

25. **Are you more often:**   a. A cool-headed person   b. A warm hearted person

26. **Is it worse to be:**   a. Unjust   b. Merciless

27. **Should one usually let events occur:**
    a. By careful selection & choice (planning)
    b. Randomly & by choice

28. **Do you feel better about:**   a. Having purchased   b. Having the option to buy

29. **In company, do you:**   a. Initiate conversation   b. Wait to be approached

30. **Common sense is:**   a. Rarely questionable   b. Frequently questionable

31. **Children often do not:**
    a. Make themselves useful enough
    b. Exercise their fantasy enough

32. **In making decisions, do you feel more comfortable with:**
    a. Standards
    b. Feelings

33. **Are you more:**   a. Firm than gentle   b. Gentle than firm

34. **Which is more admirable:**
    a. The ability to organize and be useful
    b. The ability to adapt and make do

35. **Do you put more value on the:**   a. Definite   b. Open-ended

36. **Does new and non-routine interaction with others:**
    a. Stimulate & energize you   b. Tax your reserves

37. **Are you more frequently:**   a. A practical sort of person   b. A fanciful sort of person

38. **Are you more likely to:**   a. See how others are useful   b. See how others see

39. **Which is more satisfying:**
    a. To discuss an issue thoroughly   b. To arrive at an agreement on an issue

40. **Which rules you more:**   a. Your head   b. Your heart

41. **Are you comfortable with work that is:**
    a. Contracted   b. Done on a casual basis

42. **Do you tend to look for:**   a. The orderly   b. Whatever turns up

43. **Do you prefer:**
    a. Many friends with brief contacts   b. A few friends with more lengthy contacts

44. **Do you go more by:**   a. Facts   b. Principles

45. **Are you more interested in:**   a. Production and distribution   b. Design and research

46. **Which is more of a compliment?**
    a. "There is a very logical person."   b. "There is a very sentimental person."

47. **Do you value yourself more that you are:**
    a. Unwavering   b. Devoted

48. **Do you more often prefer the:**
    a. Final & unalterable statement   b. Tentative and preliminary statement

49. **Are you more comfortable:**   a. After a decision   b. Before a decision

50. **Do you:**
    a. Speak easily & at length with strangers   b. Find little to say to strangers

51. **Are you more likely to trust your:**   a. Experience   b. Hunch

52. **Do you feel:**   a. More practical than ingenious   b. More ingenious than practical

53. **Which person is more to be complimented:**   a. Clear reason   b. Strong feeling

54. **Are you more inclined to be:**   a. Fair-minded   b. Sympathetic

55. **It is preferable mostly to:**   a. Make sure things are arranged   b. Just let things happen

56. **In a relationship, should most things be:**
    a. Renegotiable   b. Random and circumstantial

57. **When the phone rings, do you:** a. Hurry to get it first   b. Hope someone else gets it

58. **Do you prize more in yourself:** a. A strong sense of reality   b. A vivid imagination

59. **Are you drawn more to:**   a. Fundamentals   b. Overtones

60. **Which seems to be the greater error?** a. To be too passionate   b. To be too objective

61. **Do you see yourself as basically:**   a. Hardheaded   b. Softhearted

62. **Which situation appeals to you more:**
    a. The structured and scheduled   b. The unstructured and unscheduled

63. **Are you a person that is more:** a. Routinized than whimsical   b. Whimsical than routinized

64. **Are you more inclined to:**   a. Easy to approach   b. Somewhat reserved

65. **In writings, do you prefer:**   a. The more literal   b. The more figurative

66. **Is it harder for you to:**   a. Identify with others   b. Utilize others

67. **Which do you wish more for yourself?** a. Clarity of reason   b. Strength of compassion

68. **Which is the greater fault?**   a. Being indiscriminate   b. Being critical

69. **Do you prefer the:**   a. Planned event   b. Unplanned event

70. **Do you tend to be more:**   a. Deliberate than spontaneous   b. Spontaneous than deliberate
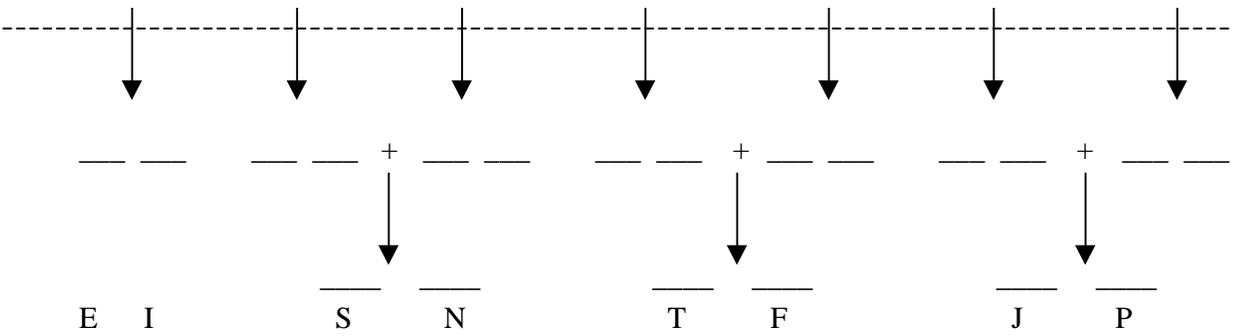
Name _____

Date _____

The Keirsey Temperament Sorter
Answer Sheet

	A	B		A	B		A	B		A	B		A	B		A	B		A	B
1.			2.			3.			4.			5.			6.			7.		
8.			9.			10			11			12			13			14		
15			16			17			18			19			20			21		
22			23			24			25			26			27			28		
29			30			31			32			33			34			35		
36			37			38			39			40			41			42		
43			44			45			46			47			48			49		
50			51			52			53			54			55			56		
57			58			59			60			61			62			63		
64			65			66			67			68			69			70		

— —   — — + — —   — — + — —   — — + — —

___ ___   ___ ___   ___ ___   ___ ___

E   I   S   N   T   F   J   P

Your temperment type combination: _____   _____   _____   _____

Your learning style is: _____   _____

Learning Styles: Keirsey - Bates

There are 4 different learning styles and each has different needs in the classroom. The following is a list of descriptors and needs of the different learners.

SP style:

- Performer
- Player
- Adventurer
- Active
- Fun-loving
- Uninhibited
- Spontaneous

NEEDS:

- Physical involvement
- Hands - on experience
- Activity
- Competition
- Media presentations
- Entertained/Entertaining

SJ style:

- Hungers for belonging
- Dependable
- Duty
- Service
- Responsible
- Wants to please

NEEDS:

- Workbooks
- Structure
- Clear directions
- Small increments

NT style**:**

- Hungers for competence
- Should know everything
- Looks for understanding
- Logical
- Sequential
- Likes to give structure to life
- Thinks for her/himself
- Independent
- Curious

NEEDS:

- Time to pursue answers
- Independence
- A chance to form own ideas
- Time to share and discuss theories

NF style:

- Hungers for sense of self
- Charismatic
- Empathetic
- Idealist
- Dramatic
- Seeks identity
- Dislikes conflict

NEEDS:

- Recognition
- Caring
- Personal attention
- Recognition of emotional attitude
- Acknowledged for her/himself
- Personal feedback for work done
- A lot of positive reinforcement

EXTRAVERTS	INTRAVERTS
Energized by being with people	Energized by spending time alone
Like being the center of attention	Avoids being the center of attention
Act, then think	Thinks, then acts
Tend to think out loud	Thinks things through inside their heads
Are easier to "read" and know; share personal information freely.	Are more private; prefer to share personal information with a select few.
Talks more than listens	Listens more than talks
Communicates with enthusiasm	Keeps their enthusiasm to themselves
Responds quickly; enjoys a fast pace	Responds after taking time to think things through
Prefers breadth to depth	Prefer depth to breadth

SENSORS	INTUITIVES
Trusts what is certain and concrete	Trusts inspiration and inference
Likes new ideas only if they have practical application	Likes new ideas and concepts for their own sake
Values realism and common sense	Values imagination and innovation
Likes to use and hone established skills	Likes to learn new skills; gets bored easily after mastering skills
Tends to be specific and literal; gives detailed descriptions	Tends to be general and figurative; uses metaphors and analogies
Presents information in a step by step manner	Presents information through leaps' in a roundabout manner
Are oriented to the present	Are oriented toward the future

THINKERS	FEELERS
Steps back; applies impersonal analysis to problems	Steps forward; considers the effects of actions on others
Values logic, justice and fairness; one standard for all	Values empathy and harmony; sees the exception to the rule
Naturally sees flaws and tends to be critical	Naturally likes to please others; shows appreciation easily
May be seen as heartless, insensitive, and uncaring	May be seen as overemotional, illogical, ad weak
Considers it more important to be truthful than tactful	Considers it important to be tactful s well as truthful
Believes feelings and valid only if they are logical	Believes any feeling is valid, whether it makes sense or not
Are motivated by a desire for achievement and accomplishment	Are motivated by a desire to be appreciated

JUDGERS	PERCEIVERS
Are happiest after decisions have been made	Are happiest leaving their options open
Has a work ethic; work first, play later (If there is time)	Has a "play ethic"; enjoy now, finish the job later (if there is time)
Sets goals and works toward achieving them on time	Changes goals as new information becomes available
Prefers knowing what they are getting into	Likes adapting to new situations
Are product oriented (emphasis is on completing the task)	Are process oriented (emphasis is on how the task is completed)
Derives satisfaction from finishing projects	Derives satisfaction from starting projects
Sees time as a finite resource and takes deadlines seriously	Sees time as a renewable resource and sees deadlines as elastic

SEATING CHART PLAN
LEARNING STYLES

NT LEARNERS

LITTLE SCIENTISTS
DRIVEN TO KNOW EVERYTHING

ENCOURAGES CLASS DISCUSSION

NF LEARNERS

CHARASMATIC
IDEALIST

NEEDS ENCOURAGEMENT
PERSONAL ATTENTION

SP LEARNERS
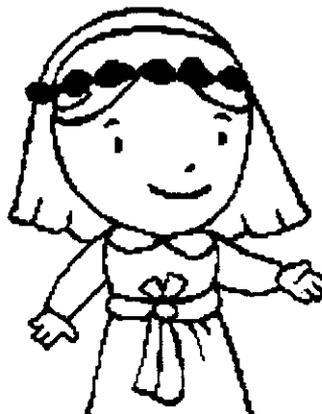
PERFORMERS
SPONTANEOUS

IMMEDIATE ATTENTION
MOST ACTIVE GROUP

SJ LEARNERS

DEPENDABLE
WANTS TO PLEASE

NEEDS STRUCTURE
NEEDS ATTENTION
OF TEACHER

Multiple Intelligences Teacher Inventory

Place a check in all of the boxes that best describe you.

Verbal/Linguistic

o   I really enjoy books

o   I hear words in my head before I write, read, or speak them.

o   I remember more when I listen to the radio or audiocassette than I do from television or films.

o   I enjoy word games such as crossword puzzles, Scrabble, anagrams, or password.

o   I like puns, tongue twisters, non-sense rhymes, and double meanings.

o   English, Social Studies and History are easier subjects for me than Math or Science.

o   When I am driving, I like to read the billboards and signs. I notice them more than the scenery along the road.

o   I often refer to things I have read or heard in conversations.

o   People often ask me the meaning of words.

o   I have written something recently that I was proud of or that was published or recognized.

_____ TOTAL VERBAL/LINQUISTIC BOXES CHECKED

Logical/Mathematical:

o   I can quickly and easily compute numbers in my head. (Example: double or triple a cooking recipe or carpentry measurement without having to write it on paper.)

o   I enjoyed Math and Science in school

o   I like solving brainteasers, logical games and other strategy games such as chess and checkers.

o   I like to set up "what-if" experiments (i.e.: What if I fertilized my plants twice as often?)

o   I look for structure, patterns, sequences or logical order.

o   I wonder about how some things work and keep up-to-date on new scientific developments.

o   I believe that there is a rational explanation for everything.

o   I can think in abstract, clear, imageless concepts.

o   I can find logical flaws in things people say and do at work or home.

o   I feel more comfortable when things have been quantified, measured, categorized or analyzed in some way.

_____ TOTAL LOGICAL/MATHEMATICAL BOXES CHECKED

Visual/Spatial:

o   When I close my eyes, I can see clear visual images.

o   I am responsive to color.

o   I often use a camcorder or camera to record my surroundings.

o   I enjoy visual puzzles such as mazes, jigsaw puzzles and 3-D images.

o   I have vivid dreams at night.

o   I navigate well in unfamiliar places.

o   I often draw or doodle.

o   Geometry was easier than Algebra.

o   I can imagine what something would look like from a bird's eye view.

o   I prefer reading books, newspapers, magazines, etc. that have many illustrations.

_____ TOTAL VISUAL/SPATIAL BOXES CHECKED

Bodily-Kinesthetic:

o   I take part in at least one sport or physical activity.

o   I find it difficult to sit still for long periods of time.

o   I like working with my hands (i.e.: sewing, carving, carpentry, and model building).

o   I frequently get insights or ideas when I am involved in physical activities.

o   I enjoy spending my free time outdoors.

o   I tend to use gestures and other body language when engaged in conversations.

o   I need to touch and hold objects in order to learn more about them.

o   I enjoy daredevil activities such as parachuting, bungee jumping and thrilling amusement rides.

o   I am well coordinated.

o   To learn new skills, I need to practice them rather than simply read about them or watch others perform them.

_____ TOTAL BODILY-KINESTHETIC BOXES CHECKED

Musical/Rhythmic:

o   I have a singing voice.

o   I know when musical notes are off key.

o   I often listen to musical selections on radio, records, tapes and CD's.

o   I play an instrument.

o   My life would be less dynamic without music.

o   I often have a tune running through my head during the day.

o   I can keep time to a piece of music.

o   I know the melodies to many songs or musical pieces.

o   If I hear a musical piece once or twice, I can easily repeat it.

o   I often tap, whistle, hum or sing when engaged in a task.

_____ TOTAL MUSICAL/RHYTHMIC BOXES CHECKED

Interpersonal:

o   People often come to me to seek advice or counsel.

o   I prefer team and group sports to individual sports.

o   When I have problems, I prefer to seek help from other people rather than work them out alone.

o   I have at least three close friends.

o   I enjoy social pastimes like board games and charades more than individual ones such as video games and solitaire.

o   I like the challenge of teaching other people what I know how to do.

o   I have been called a leader and consider myself one.

o   I am comfortable in a crowd of people.

o   I am involved in local school, neighborhood church and/or community activities.

o   I would rather spend a Saturday night at a party than spend it at home alone.

_____ TOTAL INTERPERSONAL BOXES CHECKED

Intrapersonal:

o   I regularly spend time reflecting, meditating or thinking about important life questions.

o   I have attended classes, seminars and workshops to gain insight about myself and experience personal growth.

o   My opinions and views distinguish me from others.

o   I have a hobby, pastime or special activity that I do alone.

o   I have specific goals in life that I think about regularly.

o   I have a realistic view of my own strengths ad weaknesses backed up by accurate feedback from others.

o   I would rather spend a weekend in a cabin or hide-away than at a large resort with lots of people.

o   I am independent minded and strong willed.

o   I keep a journal or diary to record the events of my inner life.

o   I am self-employed or have seriously considered starting my own business.

_____   TOTAL INTRAPERSONAL BOXES CHECKED

Rank your intelligences:

Number of boxes checked	Intelligence

Which intelligences do you tend to emphasize when you teach?

Multiple Intelligences Teacher Inventory

The Colorful Array of Competencies Found in Each Intelligence

Verbal/Linguistic
- Reading
- Vocabulary
- Formal Speech
- Journal/Diary
- Creative Writing
- Poetry
- Verbal Debate
- Impromptu Speaking
- Humor/Jokes
- Story Telling

Bodily-Kinesthetic
- Folk/creative Dance
- Role Playing
- Physical Gestures
- Drama
- Martial Arts
- Body Language
- Physical Exercise
- Mime
- Inventing Sports Games

Musical/Rhythmic
- Rhythmic Patterns
- Vocal Sounds/Patterns
- Music Composition/Creation
- Percussion Vibrations
- Humming
- Environmental Sounds
- Instrumental Sounds
- Singing
- Tonal patterns

Logical/Mathematical:
- Abstract symbols/Formulas
- Outlining
- Graphic Organizers
- Number sequences
- Calculation
- Deciphering Codes
- Forcing Relationships
- Syllogisms
- Problem Solving
- Pattern Games

Visual/Spatial:
- Guided Imagery
- Active Imagination
- Color Schemes
- Patterns/Designs
- Painting
- Drawing
- Mind-Mapping
- Pretending
- Sculpture
- Pictures

Interpersonal:
- Giving Feedback
- Intuiting Others Feelings
- Cooperative Learning Strategies
- Person to Person Communication
- Empathy Practices
- Division of Labor
- Collaboration Skills
- Receiving Feedback
- Sensing Other's Motives
- Group Projects

Intrapersonal:
- Silent Reflection Methods
- Metacognition Techniques
- Thinking Strategies
- Emotional Processing
- "Know Thyself"
- Mindfulness Practices
- Focusing/Concentrating
- Higher-Order Reasoning
- Complex Guided Imagery
- Centering Practices

Learning-Style Inventory: Instructions

The Learning-Style Inventory Describes the way you learn and how you deal with ideas and day-to-day situations in your life. Below are 12 sentences with a choice of 4 endings. Rank the endings for each sentence according to how well you think each one fits with how you would go about learning something. Try to recall some recent situations where you had to learn something new. Then, using the spaces provided, rank a 4 for the sentence ending that describes how you learn **best**, down to a 1 for the sentence ending that seems **least** like the way you would learn. Be sure to rank all the endings for each sentence unit. Please do not make ties.

Example of completed sentence set:

0. When I learn _____ I am happy _____ I am fast _____ I am logical _____ I am careful

1. When I learn _____ I like to watch and listen.b _____ I like to be doing things.d _____ I like to think about ideas.c _____ I like to deal with my feelings.a

2. I learn best _____ I work hard to get things done.d _____ I listen & watch carefully.b _____ I trust my hunches and feelings.a _____ I rely on logical thinking.c

3. When I am learning _____ I have strong feelings and reactions.a _____ I tend to reason things out.c _____ I am quiet and reserved.b _____ I am responsible about things.d

4. I learn by _____ thinking.c _____ watching.b _____ feeling.a _____ doing.d

5. When I learn _____ I am open to new experiences.a _____ I look at all sides of issues.b _____ I like to analyse things, break them down into their parts.c _____ I like to try things out.d

6. When I am learning _____ I am an intuitive person.a _____ I am a logical person.c _____ I am an observing person.b _____ I am an active person.d

7. I learn best from _____ observation.b _____ personal relationships.a _____ rational theories.c _____ a chance to try out and practice.d

8. When I learn _____ I like to see results from my work.d _____ I feel personally involved in things.a _____ I like ideas and theories.c _____ I take my time before acting.b

9. I learn best when _____ I rely on my observations.b _____ I rely on my feelings.a _____ I can try things out for myself.d _____ I rely on my ideas.c

10. When I am learning _____ I am an accepting person.a _____ I am a reserved person.b _____ I am a rational person.c _____ I am a responsible person.d

11. When I learn _____ I get involved.a _____ I evaluate things.c _____ I like to be active.d _____ I like to observe.b

12. I learn best when _____ I am receptive and open minded.a _____ I am practical.d _____ I analyze ideas.c _____ I am careful.b

Totals: _____ a _____ b _____ c _____ d

CONCRETE EXPERIENCE (CE)
("Feeling")

ACTIVE EXPERIMENTATION (AE) ("Doing")

REFLECTIVE OBSERVATION (RO) ("Watching")

ABSTRACT CONCEPTUALIZATION (AC) ("Thinking")

Percentiles

Accommodator

Diverger

AE — RO➤ 50   28   21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6   5 4 3 2 1 0 -1 -2 -3 -4 -5 -6 -7 -8 -10   -13 -15   -21

Converger

Assimilator

100   90   80   70   60   50   40   30   20   10   0

Percentiles

AC — CE

TYPE ONE LEARNERS: (DIVERGERS)

PERCEIVES INFORMATION CONCRETELY

PROCESSES INFORMATION REFLECTIVELY

INTEGRATES EXPERIENCE WITH THE SELF

LEARNS BY LISTENING AND SHARING IDEAS

IMAGINATIVE THINKERS WHO BELIEVE IN THEIR OWN EXPERIENCE

VALUES INSIGHTFUL THINKING

WORKS FOR HARMONY

NEEDS TO BE PERSONALLY NIVOLVED

SEEKS COMMITMENT

ENJOYS OBSERVING PEOPLE AND EVENTS

ABSORBS REALITY

TYPE TWO LEARNERS: (Assimilators)

PERCEIVES INFORMATION ABSTRACTLY

PROCESSES INFORMATION REFLECTIVELY

FORMS THEORIES AND CONCEPTS

INTEGRATES OBSERVATIONS INTO WHAT IS KNOWN

SEEKS CONTINUITY

NEEDS TO KNOW WHAT EXPERTS THINK

LEARNS BY THINKING THROUGH IDEAS

VALUES SEQUENTIAL THINKING

NEEDS DETAILS

THOROUGH AND INDUSTRIOUS

ENJOYS TRADITIONAL CLASSROOMS

MORE INTERESTED IN IDEAS THAN PEOPLE

PREFERS TO MAXIMIZE CERTAINTY

UNCOMFORTABLE WITH SUBJECTIVE JUDGEMENTS

TYPE THREE LEARNERS: (CONVERGER)

PERCEIVES INFORMATION ABSTRACTLY

PROCESSES INFORMATION ACTIVELY

INTEGRATES THEORY INTO PRACTICE

LEARNS BY TESTING THEORIES AND APPLYING COMMON SENSE

ARE PRAGMATISTS - IF IT WORKS, USE IT

PROBLEM SOLVERS WHO RESENT BEING GIVEN THE "RIGHTANSWER"

GETS RIGHT TO THE POINT; CAN BE BLUNT

LIMITED TOLERENCE FOR FUZZY IDEAS

VALUES STRATEGIC THINKING

SKILLS ORIENTED

EXPERIMENTS AND TINKERS WITH THINGS

NEEDS TO KNOW HOW THINGS WORK

OFTEN SEEMS "BOSSY" OR IMPERSONAL

TYPE FOUR LEARNERS   :   (Accommodators)

PERCEIVES INFORMATION CONCRETELY

PROCESSES INFORMATION ACTIVELY

INTEGRATES EXPERIENCE AND APPLICATION

LEARNS BY TRAIL AND ERROR

BELIEVES IN SELF DISCOVERY

ENTHUSIASTIC ABOUT NEW THINGS

ADAPTABLE, EVEN RELISHES CHANGE

EXCELS WHEN FLEXIBILITY IS NEEDED

OFTEN REACHES ACCURATE CONCLUSIONS IN ABSENCE OF LOGICAL JUSTIFICATION

ARE RISK TAKERS

ARE AT EASE WITH PEOPLE

ENRICH REALITY BY TAKING WHAT IS AND ADDING TO IT

SOMETIMES SEEN AS "PUSHY" AND MANIPULATIVE

The Teacher's Role: A Recapitulation

The teacher's role changes as s/he moves through the cycle of learning:

- from Motivator/Witness
- to Teacher/Information Giver
- to Facilitator/Coach
- to Evaluator/Remediator and Resource.

Concrete
Experience

TEACHER Evaluating/Remediating

TEACHER Motivating/Witnessing

TEACHER MORE ACTIVE

Observation

Self-Discovery Method

4

Discussion Method

1

Creative | Part
of | Teaching

Students/Teacher Interacting

Teacher·Students Interacting

Active Experimentation

STUDENTS MORE ACTIVE

Coaching Method

3

Information Method

2

TEACHER Coaching/Facilitating

Intellectual | and Organizational
Part of | Teaching

Students Reacting

Teacher Acting

TEACHER · · Teaching

Abstract
Conceptualization

8503

THE GREAT EDUCATIONAL
PARADIGM DILEMMA :

INFORMATION AGE CHALLENGES

in a

HIGH TECHNOLOGY AGE

with a

BUREAUCRATIC AGE CULTURE

and an

INDUSTRIAL AGE
DELIVERY SYSTEM

goverened by an

AGRICULTURAL AGE CALENDAR

and a

FEUDAL AGE AGENDA

Welcome to the One Computer Classroom

Elements of Successful Classroom Technology

Support of Teacher Control
Use of the technology must <u>not</u> make the teacher's management task <u>more</u> difficult.

Pedagogic Flexibility
The technology must support the various ways teachers teach.

Accessibility
Teachers must have access to it where they work, both inside and outside of the classroom.
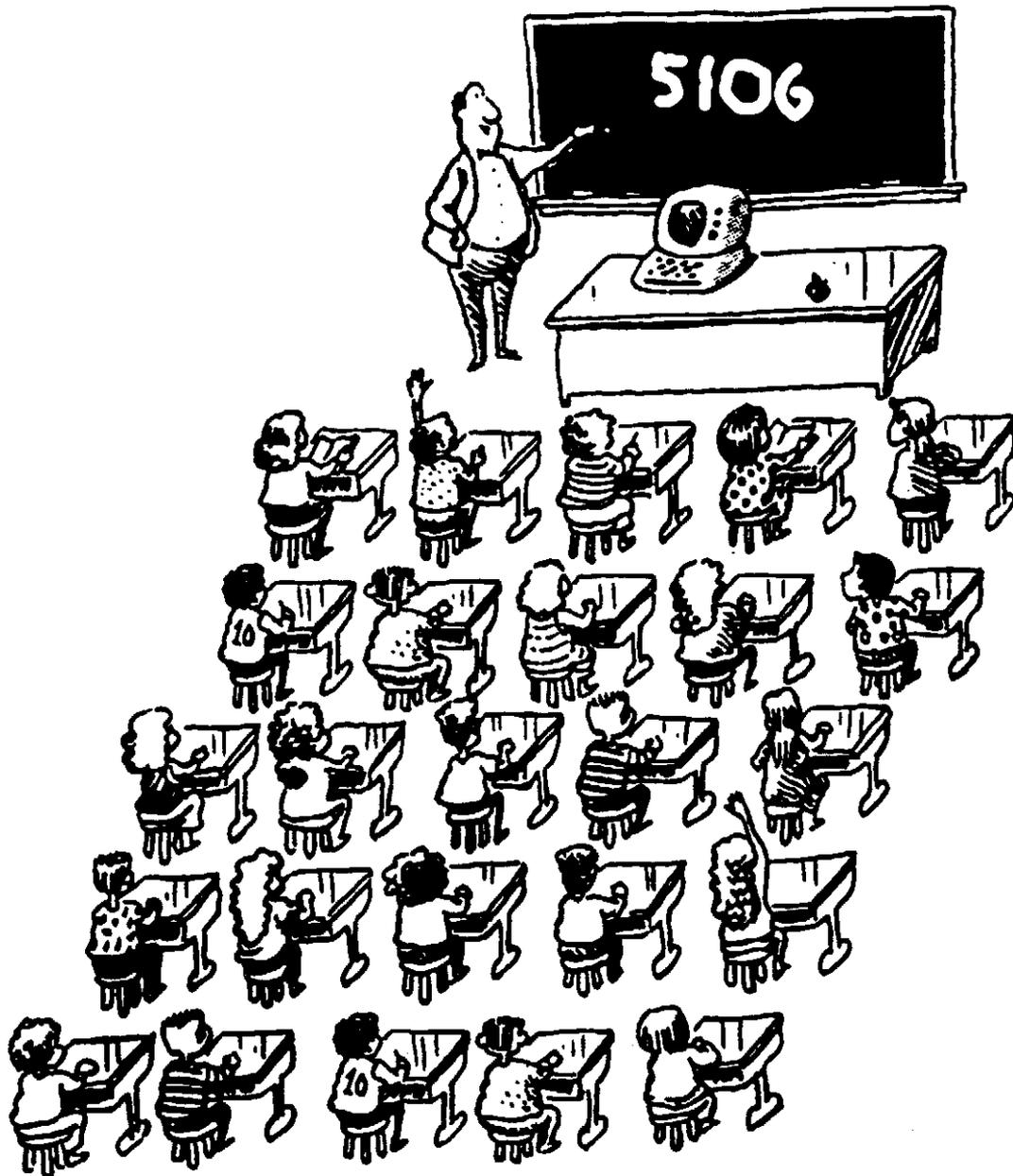
What Can a Good Teacher Do With a Computer?

Manage responsibilities and paperwork
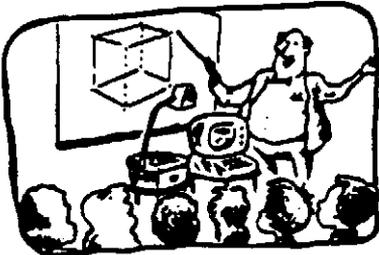
Make dazzling presentations

Lead incredible discussions

Manage dynamic cooperative learning activities

Inspire enlightening self-discovery

Manage Responsibilities and Paperwork
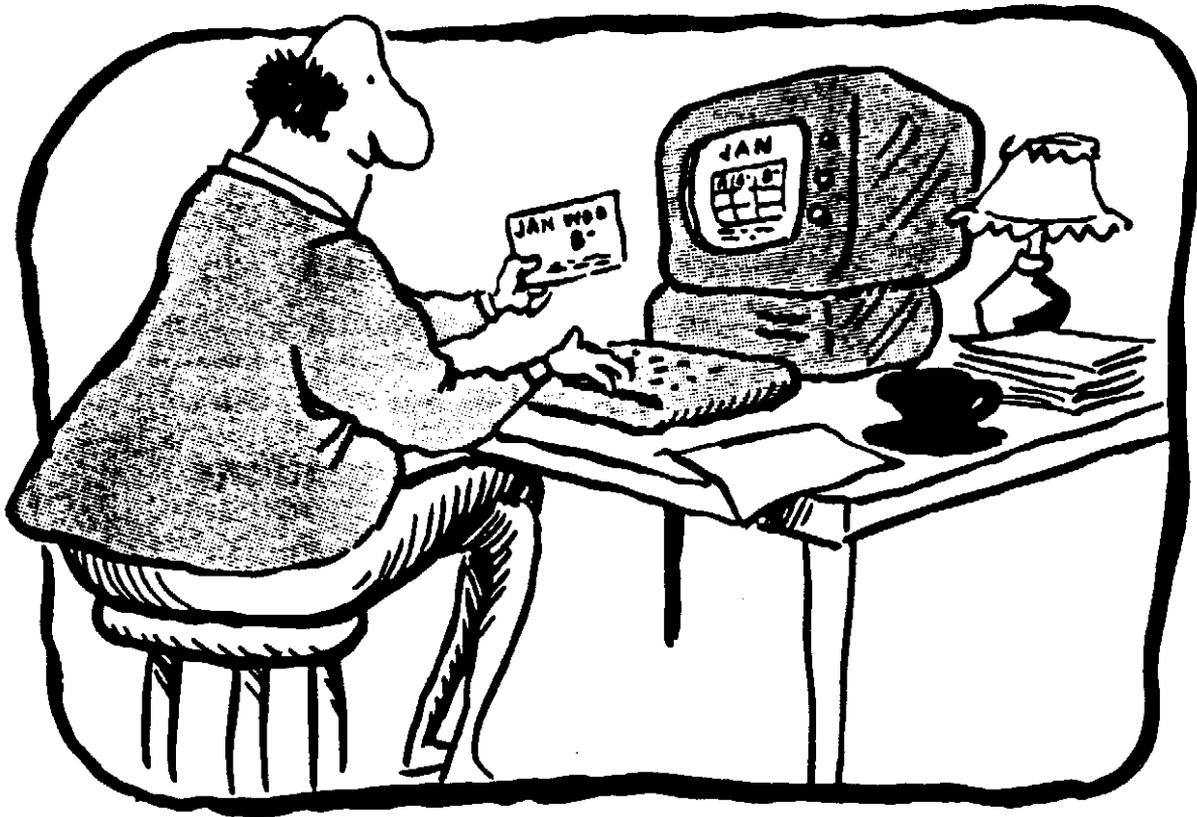
- **Ease the burden of redundant administrivia**
- **Manage student records, grades, and attendance**
- **Generate tests, worksheets, handouts, and displays**
- **Produce reports, letters, and notes**
- **Create and modify curriculum**
- **Increase teacher professionalism**

Make Dazzling Presentations
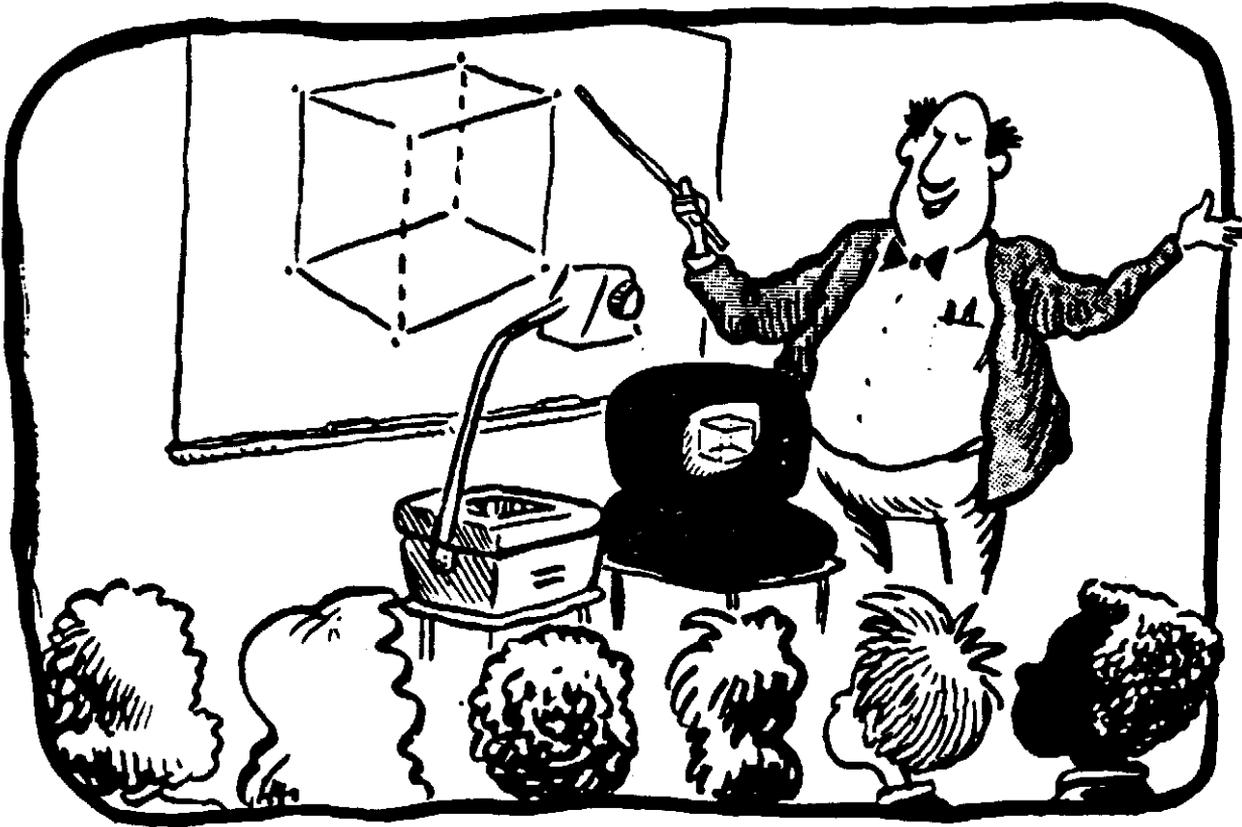
- Illustrate ideas and concepts
- Manage and organize information
- Assist in classroom management
- Encourage student participation
- Enliven demonstrations

Lead incredible discussions

- **Prompt discussion**
- **Promote debate**
- **Manage information**
- **Support role playing**
- **Create a compelling context**
- **Enhance drama and excitement**

Inspire enlightening self-discovery
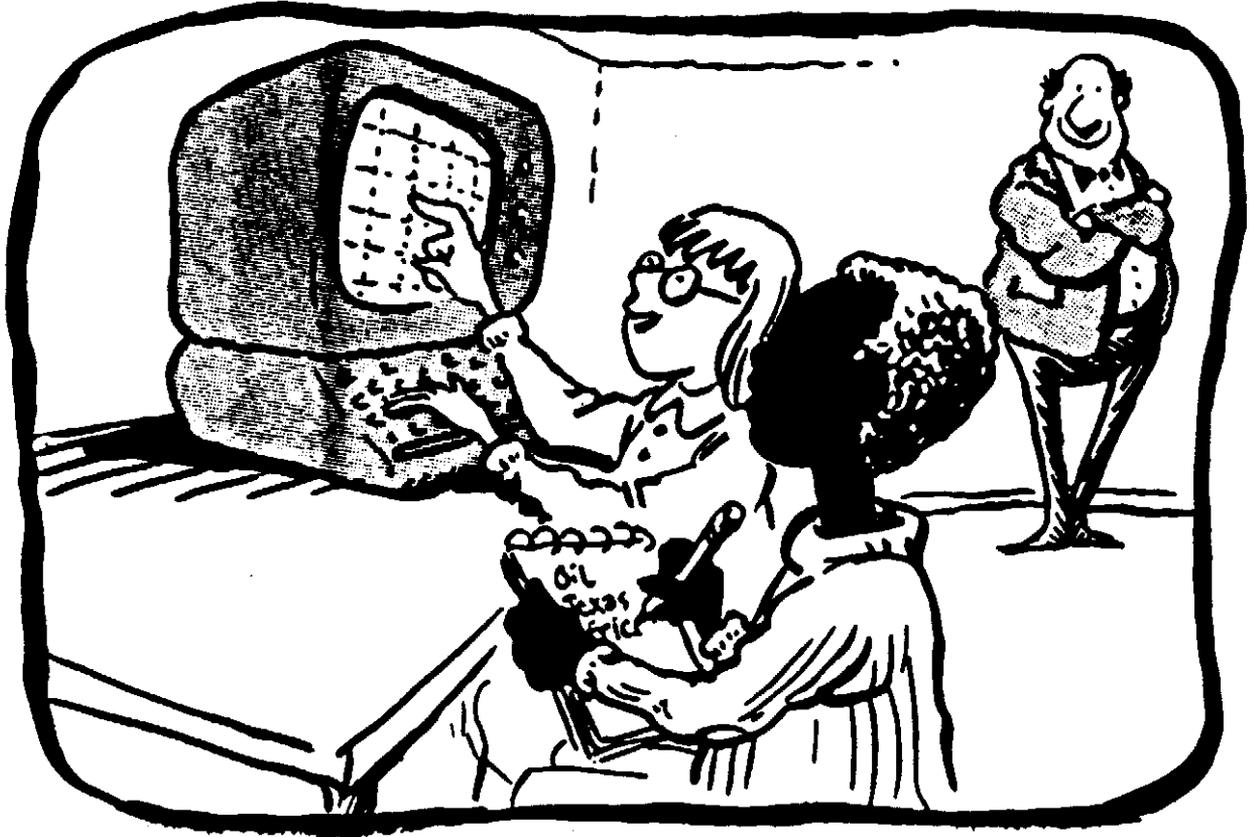
- **Provide access to information**
- **Offer tools for organizing and manipulating data**
- **Engage exploration in a compelling context**
- **Display content in alternative forms**

5 ISSUES TO CONSIDER
BEFORE
USING COMPUTERS IN SCHOOLS

1. Existing pressures on your time and energy.

2. Support for you within the school.

3. Your professional priorities.

4. Your self-esteem and confidence.

5. Your knowledge of the machine.

8 TIPS FOR TEACHERS
BEGINNING TO USE COMPUTERS

1. Take the computer to where you work.

2. Don't worry about breaking anything.

3. Start easy.

4. Be patient.

5. Don't be afraid to seek help.

6. Keep it on your turf.

7. Remain skeptical.

8. Find programs to make life easier.

THE VISION

Envisioning the Future (Part 1)

Assessing Where You Are Now (Part 2)

Setting Goals and Objectives (Part 3)

Planning How to Get There from Here (Part 4)

Making the Plan Happen (Part 5)

Evaluating and Adjusting (Part 6)
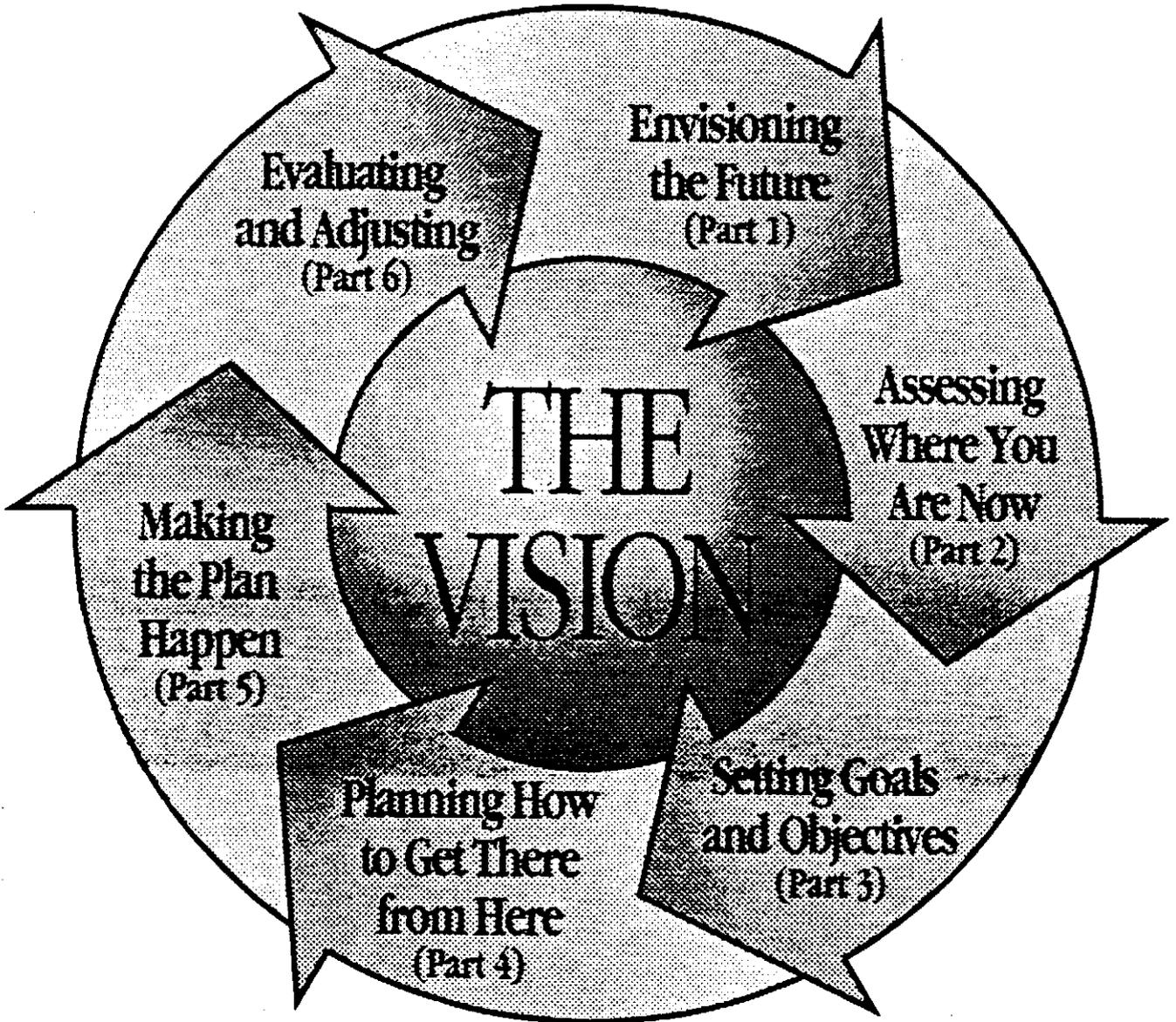
CHANGE

"Evolution is a process by which the impossible
becomes possible through small, accumulating
shifts. Concentrate on direction, not the size of
the change. Begin with actions that seem tinier than necessary
but which are small enough to be maintained. The rate of change
is slow at first but do not prematurely judge your efforts. Change
happens through spirals; the work grows upon itself. As little
changes accumulate, they will reinforce one another and make
larger changes possible. Gradually balances will shift."
(Krapfel, 1989)

Concerns Based Adoption Model
A Model for Change

The Concerns Based Adoption Model (CBAM) has been designed as a diagnostic tool for change agents (principals, supervisors, trainers, etc.) to asses the concerns of teachers in relation to the introduction of an innovation (new ideas or practices).

The term innovation refers to anything that is new to the individual involved. For example: If a school has not been involved in "team teaching", then team teaching would be an innovation at that particular school. The employment of new innovations can be considered the small steps toward adopting new paradigms.

The CBAM process is the result of research conducted at the Research and Development Center for Teacher Education at the University of Texas at Austin. The original research was developed for change at the college level but was later adapted for public school teachers and used extensively throughout Jefferson County public schools.

There are some assumptions that must be understood before the model and stages of concern can be examined:

1. Change is a **process** not an event:
   - Change takes 3 - 5 years (sometimes longer) to be implemented.
   - Simply stating that a group has adopted a new innovation does not mean that everyone involved will be actually carrying out their part of the change.

2. Change is made by individuals first and then by institutions.
   - Until each person is actually doing their part in the innovation, change has not occurred.
   - Grass-roots change is the most lasting and broad based form of change

3. Change is a highly personal experience.
   - As educators, we have not allowed ourselves to express personal concerns about our work. We are trained to believe that the kids come first and our needs our secondary.
   - Educators need to understand that personal feelings are normal, acceptable and important to the process of change.

4. Change entails developmental growth in feelings and skills.
   - The stages of CBAM are developmental.
   - One does not start at Stage 1 and 'skip' to Stage 5.
   - Some people move through stages more quickly than others.
   - **Everyone goes through each stage.**

Level #1
Concerned about: SELF
Stages 0 - 2

People in the following three stages are gathering information about the innovation and preparing to decide whether to commit to the change or not based on how the innovation will effect them **personally**. During these stages, people **will not** be sold on making a change because it may help someone else. People in these stages want to know how the innovation will make their lives easier. The change has not yet taken place. These stages are pre-implementation stages of the change process.

Stage 0: **AWARENESS**

People at this stage have nothing to say about the innovation. If asked, what they think, they will make comments like:
- "I've never heard of that."
- "Oh that, I'm really not interested."
- "I'm afraid that I can't help you on that one!"

The lack of enthusiasm typical at this stage should not be perceived as a negative response. Quite often the person who does not seem to be interested will become a strong proponent once she/he has learned more.

Stage 1: **INFORMATIONAL**

Individuals at this stage will be seeking more information about the innovation. Some typical comments are:
- "Where can I get a book about the subject?"
- "I am taking a class to learn more about it."
- "I've been talking to some people from other schools to find out more about it."

People at this stage will be asking questions to get a clearer definition of the innovation. They want to know the long term benefits of the change but they will not decide to participate until they understand the short term personal costs.

Stage 2: **PERSONAL**

This is the most critical stage of this level. Individuals will decide whether or not to adopt the innovation. They will say things like:
- "I'm not at all sure I can commit to this!"
- "This is going to be a lot of work!"
- "I'm not sure this will work in my classroom."

Time and energy requirements are very important to people at this level. Unless they can find some **personal benefit** from the innovation, they will **not change**. Emotions tend to run high at this level and people often experience stress from they process.

People at this level are in the **first phase of implementing** the innovation. They have past the planning and thinking stages and are working through the problems involved in doing something new. Most people will be at these stages for 2 to 3 years. Many never go beyond this level.

Stage 3: **MANAGEMENT**

This is the earliest stage of implementation. People at this stage recognize the tremendous amount of time and energy involved in making a change. They will say things like:
- "I'm taking work home every night."
- "There doesn't seem to be enough hours in the day since we made that change."
- "I just don't have the time to get it all done."

Management concerns will usually be specific in nature and may be the cause of stress and overload. Personal concerns (Stage 2) will quite often become prevalent again after reaching Stage 3.

Stage 4: **CONSEQUENCES**

People at this stage are beginning to consider the impact of the innovation on their students. At this point, the individual has **moved away from the "SELF"** concerns of the earlier stages. Some typical comments are:
- "I would like to excite my colleagues and students about their part in this program."
- "I am concerned about my students attitude toward this program."
- "We are really doing well at this. I am beginning to wonder about the long range impact this innovation may have on my students."

At this point, people are comfortable with their ability to deliver the product. Quite often, people at this stage are gathering data on the effectiveness of the innovation in order to **make minor changes** in the delivery to improve student outcomes.

Individuals at his level are **very concerned** about the impact the innovation is having on their students. People at these stages are interested in being involved in professional development activities.

Stage 5: **COLLABORATION**

People at this stage are very anxious to get involved with others at the same stage of implementation of the innovation. They want to share ideas, thoughts and experiences in order to **improve the delivery** of their innovation. Common statements from people at this stage are:
- "We need to coordinate a bit better on our delivery."
- "I think we should have more opportunities to share."
- "This would work better if we could 'team' it."

Comments about working with others are also frequently made by people at Stage 3 and should not be confused with comments made by Stage 5 people. Stage 3 concerns relate to making the job easier. Stage 5 concerns relate to a desire to make the product more effective and useful for the student.

Stage 6: **REFOCUSING**

People at this stage are ready for a major change (a new paradigm). At this stage, the innovation has been in place for several years and the individual has discovered a new and completely different way of delivering the product. People at this stage say:
- "I know of some other approaches that might work better."
- "I am interested in looking for alternatives to our current situation."
- "I really believe we are ready to move on to something new."

Concerns at Stage 6 can often be confused with those at Stage 4. Both stages involve a concern for the effect the innovation is having on the student. The **difference lies in the magnitude of the change**. People at Stage 4 are considering minor changes while people at Stage 6 are considering doing away with the current innovation and replacing it with another, more effective innovation.

CONDITIONS FACILITATING CHANGE

1. People tend to change when they have participated in the decision to change.

2. People tend to change when the rewards of change exceed the cost (pain).

3. People tend to change when they see others changing, particularly when the direction of change is supported by valued persons.

4. People tend to change more readily when they have the competencies, knowledge and/or skills required for the change.

5. People tend to change more readily in an environment free from threat and/or judgment.

6. People tend to change to the degree they can trust the motives of those trying to induce change.

7. People tend to change more readily if they are able to influence reciprocally those attempting to induce change.

8. People tend to change either in series of small steps or as a total change in a way of life. That is, they tend to change slowly except when they experience a total life change.

9. People tend to change to the degree that they see the change has been successful and especially if they are able to gather date regarding the change.

10. People tend to maintain change as the change is supported by their environment.

11. People tend to maintain change if there is public commitment to the change.

12. People tend to resist change to the degree they feel it is imposed on them.

Students, as well as collegues, experience these same conditions when dealing with change.