Customizing Instructional Methods to Match Student Learning Styles

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Applied Technology Classes I Teach

- Buying and Selling on eBay
- Digital Photography*
- Scanning and Editing Photos*
- CompTIA A+ Certification

* Regular and seniors’ classes
The Challenges of Teaching Applied Technologies

- Textbook and resource selection
- Matching teaching methods to diverse learning styles
- Conquering student technophobia
- Developing effective class exercises
- Helping students retain information
- Adapting class material to diverse age groups
Textbook Selection Criteria

- Practical
- Easy to understand
- Provides specific guidance for the most common tasks
- Logical organization
- Provides coverage of as much of the syllabus and objectives as possible
Easy series

- Que Publishing
- Highly visual step-by-step instructions for technology tasks
- **Easy Digital Cameras** (Digital Photography)
- **Easy Photoshop Elements** (Scanning and Editing Photos)

Sample page from **Easy Digital Cameras**
Absolute Beginner’s Guide series

- Que Publishing
- Covers more complex tasks using a friendly style
- Absolute Beginner’s Guide to eBay
- Absolute Beginner’s Guide to A+ Certification
Additional Resource Selection Criteria

- Improves student experience of class
- Covers topics from syllabus and objectives not included or adequately covered in textbook
- Provides resources for further study
Additional Resource Types

- Handouts
  - Presentations
  - Class exercises
  - Links to websites, libraries, other resources

- Websites
  - Tutorials
  - Useful products and services
Examples - 1

**Using the Mode Dial**

- **Night Mode icon**
  Fires flash, then leaves shutter open to gather dim light. Use with a tripod. Called ‘Slow shutter sync’ in some cameras.

- **Sports**
  Uses fast shutter speeds. Some cameras also use continuous focus.

- **Portrait**
  Blurs background. Use for head and shoulders portraits.

- **Close-up**
  Use for macro photography (see manual for distances).

- **PAS**
  Program, Aperture, Shutter. Advanced control of exposure, white balance, etc. Some cameras use separate settings.

- **Video**
  Records a movie. Some cameras also record audio. Quality not as good as with a DV camcorder.

- ***Turn on flash manually if you shoot in dim light***

**Epson Perfection 3170 Menus**

- **Professional Mode Image Adjustments**
  - Auto Exposure
  - Tone (color) Correction
  - Image Adjustment
  - Histogram (Levels)
  - Sharpens details in scan
  - Removes halftone screen in newspaper/magazine photos
  - Restores colors (slides and negatives only)

Handout for Digital Photography

PowerPoint slide for Scanning/Editing
Examples - 2

Easy Digital Cameras

Student Class Exercises – Week 1

Exercise 1: Learning About Your Camera

What is your camera brand and model?

What is your camera’s MP (megapixel) rating?

What is your camera’s optical zoom ratio (3x, 4x, etc.)?

What is the zoom lens size (in mm, such as 8mm-32mm, etc.)?

What is the maximum aperture (f-stop, such as 1: 2.8, f2.8, etc.)?

It might be identified as a range, such as 1:2.8-4.5

What type and size of media does your camera use for storage?

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eBay fraud handout

Digital Photography class exercise
Learning Styles

- Auditory
- Visual
- Kinesthetic

Successful instructional methods must address all learning styles to effectively reach the entire class.
Instructional Methods for Auditory Learners

- Lecture
- Class discussion
- Narration of guided exercises
- Narration of hands-on exercises
- Narration of handouts
- Answering student questions
- Narration of writeups on whiteboard
Instructional Methods for Visual Learners

- Handouts
- Textbook (especially visuals in book)
- Visual component of guided demonstrations
- Visual component of hands-on exercises
- Visual component of handouts
- Writing answers to questions on whiteboard
- Demonstrating a task
Instructional Methods for Kinesthetic (Tactile) Learners

- Classroom hands-on exercises
- Guided exercises
- Learning by doing
Factors Influencing Technophobia

- Student class population typically ranges in age from about 35 up to 60+ (standard classes) or 60-85 (seniors’ classes)
- Students present a diverse range of technical skills
- Many students have limited experience with computers or other technologies used in class
Overcoming Student Technophobia - 1

- Make comparisons between non-technical and technical items

  “A digital camera is a computer that takes pictures”

  “Adjusting the ISO setting in a digital camera is like switching to faster film in a film camera”
Overcoming Student Technophobia - 2

- Demonstrate and guide students through methods to recover gracefully from errors
  - Undo button
  - Undo history
  - Discard and restart process
Overcoming Student Technophobia - 3

- Repetition to achieve mastery
- Guided exercises
- Pairing up students
- Individualized instruction when necessary
- Student discussion and encouragement
Developing Effective Exercises

- Must contribute to students’ mastery of subject
- Must appeal to students with diverse learning styles
- Must capture and maintain students’ attention
- Must be relevant to students’ interest
Examples of Class Exercises - 1

- eBay Class
  Look up completed auctions of items the student is interested in selling
eBay Class Exercise Benefits

- Gauge market interest in item
- Discuss why item sold or did not sell
- Learn the major features of a good listing
- Learn what mistakes to avoid in listing an item
Examples of Class Exercises - 2

- Digital Photography class
  Take pictures in varying lighting conditions
Photography Exercise Benefits

- Determine effect of different lighting conditions on photo quality
- Determine effect of shutter lag, exposure and focus lock
- Evaluate need to increase ISO, adjust white balance, use flash, use EV adjustment, other features
- Learn to reshoot after making adjustments
Examples of Class Exercises - 3

- Scanning and Editing Photos
  Repair photos (red-eye, dust, poor lighting)

  Builds confidence in photo editing tools
  Teaches student how to evaluate photos
  Demonstrates practical benefit of undo history
Photo Repair Exercise Benefits

- Builds confidence in photo editing tools
- Helps develop photo-evaluation skills
- Demonstrates practical benefits of undo history (before/after; retrace steps for learning; reverse course if latest changes reduce picture quality)
Helping Students to Retain Information

- Review previous class before continuing
- Tie discussions in current class to concepts covered in previous classes
- Provide book or handout references for each topic covered to enable students to review information
- Summarize class session at end of session
Adapting Class Material to Diverse Age Groups - 1

- **Pace**
  - Adjust pace of class to student understanding and retention
  - Consider a slower pace for seniors

- **Repetition**
  - Consider more use of repetition for seniors
  - Build on previous knowledge and avoid exact repetition to avoid student boredom
Adapting Class Material to Diverse Age Groups - 2

- **Comparisons/Analogies**
  - Develop comparisons and analogies that are relevant to the age group(s) in your class

- **Instructional Methods**
  - Adjust the mix of instructional methods as appropriate to your students’ experience
  - Plan for more individualized instruction and more guided exercises in senior classes
Adapting Class Material to Diverse Age Groups - 3

- Consider adjusting number of sessions or adjusting syllabus and class objectives when developing classes for different age ranges
Guided Exercises

- Repairing a Poor-Quality Photo
- Writing a Title for an eBay Item Listing