Computational Thinking Lab

Peer-Led Team Learning (PLTL):
Computing Concepts

Fall 2017
What is PLTL

• Active, cooperative learning in small groups
• *Students helping, learning from other students*
• Facilitated by an undergraduate Peer Leader
• Beneficial to both students and leaders

Intro slides to PLTL courtesy of S. Horowitz, University of Wisconsin, WES-CS project.
Why PLTL?

Cone of Learning (Edgar Dale)

<table>
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<th>Nature of Involvement</th>
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<td>Reading</td>
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<tr>
<td>Hearing Words</td>
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<tr>
<td>Looking at Pictures</td>
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<td>Watching a Movie</td>
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<td>Watching a Demonstration</td>
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<td>Seeing it done on location</td>
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<tr>
<td>Participating in a discussion</td>
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<td>Giving a talk</td>
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<td>Doing a dramatic presentation</td>
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<tr>
<td>Simulating the real experience</td>
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After 2 weeks we tend to remember...

- 10% of what we read
- 20% of what we hear
- 30% of what we see
- 50% of what we hear and see
- 70% of what we say
- 90% of what we say and do

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| 10% of what we read       | READING |
| 20% of what we hear       | HEARING WORDS |
| 30% of what we see        | LOOKING AT PICTURES |
| 50% of what we hear and see | WATCHING A MOVIE |
| 70% of what we say        | LOOKING AT AN EXHIBIT |
| 90% of what we say and do | WATCHING A DEMONSTRATION |
|                           | SEEING IT DONE ON LOCATION |
|                           | PARTICIPATING IN A DISCUSSION |
|                           | GIVING A TALK |
|                           | DOING A DRAMATIC PRESENTATION |
|                           | SIMULATING THE REAL EXPERIENCE |
|                           | DOING THE REAL THING |

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Nature of Involvement:

- Lecture
- PLTL

Typical CTL Session

• Simulate executing code:
  – Trace or act out lines of code, method calls…

• Write Code
  – Pair programming

• Exam review sessions
  – Jeopardy game using prior exam questions

• Practice solving spatial/logic puzzles
  – KenKen, toothpick puzzles, river crossing, …
Spatial & Logic Reasoning Ability

- Key to success in technology, engineering, math, and science
- Necessary for problem solving
- Improve with practice!
Goal

Students help one another learn strategies for solving problems using programming.

Have fun doing it!
The CTL Pledge

• Try to enjoy the material (keep open mind)
• Attend and prepare for every class meeting
• Be an active learner
• Ask questions and volunteer answers
• Help others to learn material
  – General concepts, strategy, programming idioms
  – *Do not share* details of CSE 231 project implementations (*no work on projects in the CTL*)
Expectations of Students

- Actively participate
- Come prepared
  - View assigned video & reading
  - Complete the week’s Pre Lab assignment *before* attending your CTL session
- Be on time
- Stay on task:
  - Refrain from email, texting, phone calls, social networking, …
Grading

Total possible points: 14 x 10 pts = 140 pts

90% (126-140)  4.0
80% (112-125)  3.0
70% (98-111)   2.0
60% (84-97)    1.0
<60% (0-83)    0.0

Can “make up” 10 missed points by attending final exam review session, filling pre-post survey
Being Present is Key!

• *Missed meetings cannot be made up*

• Notify instructor of unavoidable, MSU-sanctioned conflict a week *in advance*.

• In case of prolonged illness or documented emergency, notify instructor as timely as possible.
CSE 231 tips

• Read the book
• Watch the videos
• Read the *entire* project specifications (multiple times!) and *follow them*
• Practice taking the exams
Lifetime tips

• Being able to follow instructions is a necessary life-time skill.
  – Did you do something to earn a sweet treat today?
• Being able to follow instructions is a necessary life-time skill.
  – Did you do something to earn a sweet treat today?
• But exercise good judgment: ask if instructions do not make sense/seem wrong.
• What was ranked #1 best job in America?
Consent Form

• We would like to use your archived data to evaluate the effectiveness of the CTL

• Needed to justify continued investment of resources in the CTL