CTLE
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Applying ShareStart (學思達) Approach in Higher Education Lectures

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Teaching Philosophy

Regard the students as discoverers of new facts rather than as receptacles of memorizing previously developed knowledge.

What is ShareStart Approach?

- **ShareStart** is homophony of the Chinese term "學思達", which means Learning-Thinking-Expressing.
- Developed by Dr. Chang Hui-Cheng (張輝誠老師), a Chinese Language Teacher in the Taipei Municipal Zhong Shan Girls High School (台北市立中山女子高中), Taiwan.

One-way Lecturing

- Traditional one-way lecturing:
  - o All the teaching materials (e.g. concepts, theories, model answers of working examples) are provided in PPT, students are listeners only;
  - o Another extreme: PPT is too simple and the students spend most of their time taking notes, "Doing Dictation".
  - o Lots of online resources (e.g. online teaching videos) may replace us easily.

One-way Lecturing

Example: Two-Tail Test (σ Unknown)

The average cost of a hotel room in New York is said to be $168 per night. To determine if this is true, a random sample of 25 hotels is taken and resulted in an X of $172.50 and a sample standard deviation S = $15.40.

Test the appropriate hypotheses at $\alpha = 0.05$. Assume that the population distribution is normal.
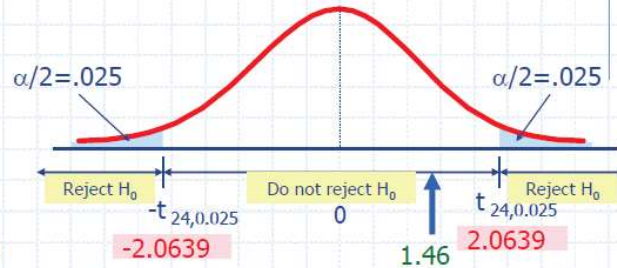
$H_0: \mu = 168$
$H_1: \mu \neq 168$

One-way Lecturing

Example: Two-Tail Test (σ Unknown)

$H_0: \mu = 168$
$H_1: \mu \neq 168$

$\alpha/2 = .025$ ... $\alpha/2 = .025$

◆ $\alpha = 0.05$

◆ $n = 25$, df $= 25-1=24$

◆ σ is unknown, so use a t statistic

◆ Critical Value:

$\pm t_{24,0.025} = \pm 2.0639$

Reject H_0 | Do not reject H_0 | Reject H_0
$-t_{24,0.025}$ 0 $t_{24,0.025}$
-2.0639   1.46   2.0639

$$t_{STAT} = \frac{\overline{X} - \mu}{\frac{S}{\sqrt{n}}} = \frac{172.50 - 168}{\frac{15.40}{\sqrt{25}}} = 1.46$$
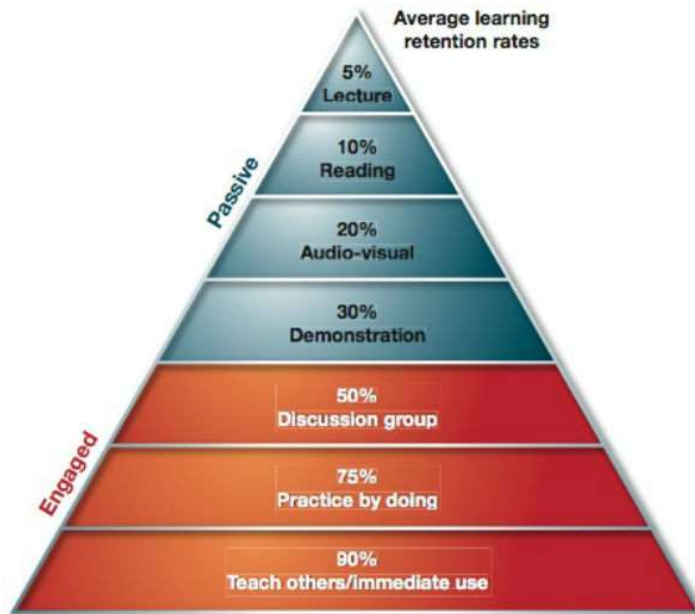
Do not reject H_0: insufficient evidence that true mean cost is different than $168

One-way Lecturing

- Advantages:
  - ✓ Cultural norm of adult education;
  - ✓ Efficient coverage of content in a limited time;
  - ✓ Can reach a large group at the same time;
  - ✓ Lecturers can predict exactly what will happen during their speech and believe they are in control;
  - ✓ Students do not feel threatened while listening passively.

One-way Lecturing

- Disadvantages:
  - ✖ Fail to provide feedback of student learning;
  - ✖ Not ensure students intellectually engaged in materials;
  - ✖ Students' attention wanes quickly;
  - ✖ Information tends to be forgotten quickly;
  - ✖ Presuming all students learn at the same pace and are at the same level of understanding;
  - ✖ Not suited for teaching higher orders of thinking such as application, analysis, synthesis, or evaluation.

Learning Pyramid
(Source: National Training Laboratories, Bethel, Maine)

Applying ShareStart Approach

1. **Learning**:
    - Students are required to read the handouts before coming to class;
    - Concepts, definitions, and derivations of formulas are introduced first;
    - Providing sufficient information of basic content.

Applying ShareStart Approach

2. **Thinking**:
    - Solutions to the examples are not given in PPT;
    - Students are grouped and attempt solving problems;
    - Students do not ask for model answers and they know the teacher is waiting for their answers;
    - Observing the students' learning progress;
    - Giving instructions but not the answers when needed;
    - Practicing has 75% retention rate, according to learning pyramid.

Applying ShareStart Approach

☺ **Why grouping**?

    ○   Sharing the learning pressure;

    ○   Training the corporative and collaborative abilities;

    ○   Teaching others and immediate use have the highest learning retention rate, according to learning pyramid.

Applying ShareStart Approach

Example

Example 5

A random sample of 18 FBA year-4 students was asked to rate, on a scale from 1 (not important) to 5 (extremely important), starting salary as a job hunting characteristic. The sample mean rating was 3.2, and the sample standard deviation was 0.70.

a. Test at the 1% significance level that the population mean rating is larger than 3.0.

b. What assumption must you make about the population distribution in order to conduct the test in (a)?

Applying ShareStart Approach

Example

Example 5

a. ① H_0:
   H_1:

Remember which hypothesis has equal sign, which one does not

② $\alpha = 0.01$

③ — distribution (σ is unknown)

④ Reject H_0 if

⑤

⑥ Decision:
   Conclusion:

Applying ShareStart Approach

3. **Expressing:**

   • Some students are chosen randomly to present their solutions to the peers;

   • If the students can't answer or answer incorrectly? Providing guidance, allowing peers to correct.

   • A few students may have bad learning attitude? Understanding their obstacle; Giving warning if someone keeps goofing off.

Applying ShareStart Approach

How Lewis Hamilton won Formula 1 Championship

- The following table shows the point distribution in season 2018

Rounds	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Total
Hamilton	18	15	12	25	25	15	10	25	0	18	25	25	18	25	25	25	25	15	12	25	25	383
Vettel	25	25	4	12	12	18	25	10	15	25	0	18	25	12	15	15	8	12	18	8	18	302

- Lewis Hamilton:
  - Mean point per round = 19.43; Standard deviation = 6.8422
- Sebastian Vettel:
  - Mean point per round = 15.24; Standard deviation = 7.0367

a. Which driver performs better?

b. Which driver has more consistent performance every race?

Applying ShareStart Approach

3. Expressing:

- Finally, I will provide some feedbacks, suggested solutions, and follow-ups;
- Students are participants, not listeners, not outsiders;
- Students have sense of accomplishment.

Effects on Students

- ☝ More involvement;
- ☝ Building up students' curiosity;
- ☝ Establishing self-learning ability;
- ☝ Achievement in learning;
- ☝ Confidence in learning and seeking for knowledge.

More than 50,000 non-tertiary teachers in Taiwan are adopting ShareStart.

More academics in Taiwan universities are trying to adopt ShareStart to flip the one-way lecturing.

More academics in Taiwan universities are trying to adopt ShareStart to flip the one-way lecturing.

Teach Like a Coach

☺ Trying to understand students;

☺ Clarifying the applications of what they are learning;

☺ Teach not only the knowledge, but also the skills of seeking knowledge;

☺ Light up students' hearts.

Excellent Teaching

- ✖ Not only the skills or methods;
- ✓ But also caring students, giving them guidance, and sharing our life experience.
- ✖ DON'T: regard the students as products, expect there are standardized output produced;
- ✓ DO: every student has his/her particular merit, they like to be discovered and noted.

The first high school in HK adopts Share Start
The United Christian College (Kowloon East)

https://youtu.be/BemHxmhTgmI

From Learning to
Learning – Thinking – Expressing

Thank you!