

Summary: Instructional Design is the creation of learning material along with process/interactions of the course (the learning experience). This encompasses three main components:

- 1) **Student Learning Objectives (SLOs)**
- 2) **Assessment**
- 3) **Pedagogies (Teaching and Learning Activities: TLAs)**

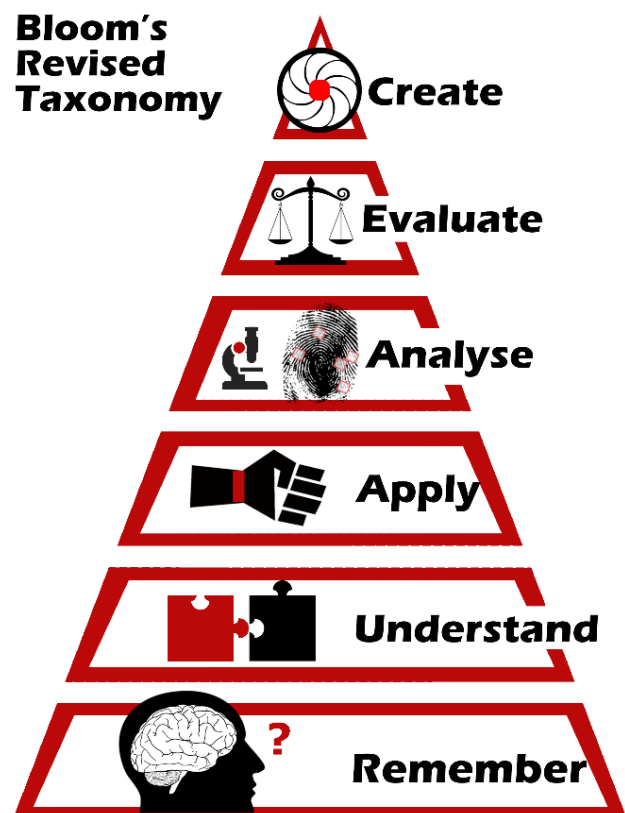
To achieve good course design, the learning objectives must be fully understood: why is this course being given to the students. Based on the learning objectives and to ensure that students are properly learning the objective of the course, appropriate formative and summative assessments must be utilized. Additionally, effective pedagogies are selected to meet the diverse needs of the students in helping them to understand and achieve deep learning.

Benefits: Research has revealed that when proper instructional design is used, multiple benefits are obtained that ultimately help both the instructor and the students (Hart, 2020; Molenda et al., 2003; Cheng et al., 2009):

- **efficiency of course creation**
- **effectiveness of course instruction and student learning**
- **better organization/flow**
- **higher level of appeal/aesthetics**
- **greater student satisfaction**
- **helps address the vital need of student motivation**
- **improves applicability of the course**
- **enhanced quality of both face-to-face and especially online courses**

1) Student Learning Objectives: this deals with the specific items/processes that student must learn from the course. To be fully effective, these Student Learning Objectives must be nested within the Course Learning Objectives. Meaning that the students are learning key things that will help them pass the class. The nesting continues in that these Course Learning Objectives need to be nested within the Degree Learning Objectives. This alignment helps the student learn in proper progression and help avoid any gaps in knowledge to properly achieving the desired degree in their course of study.

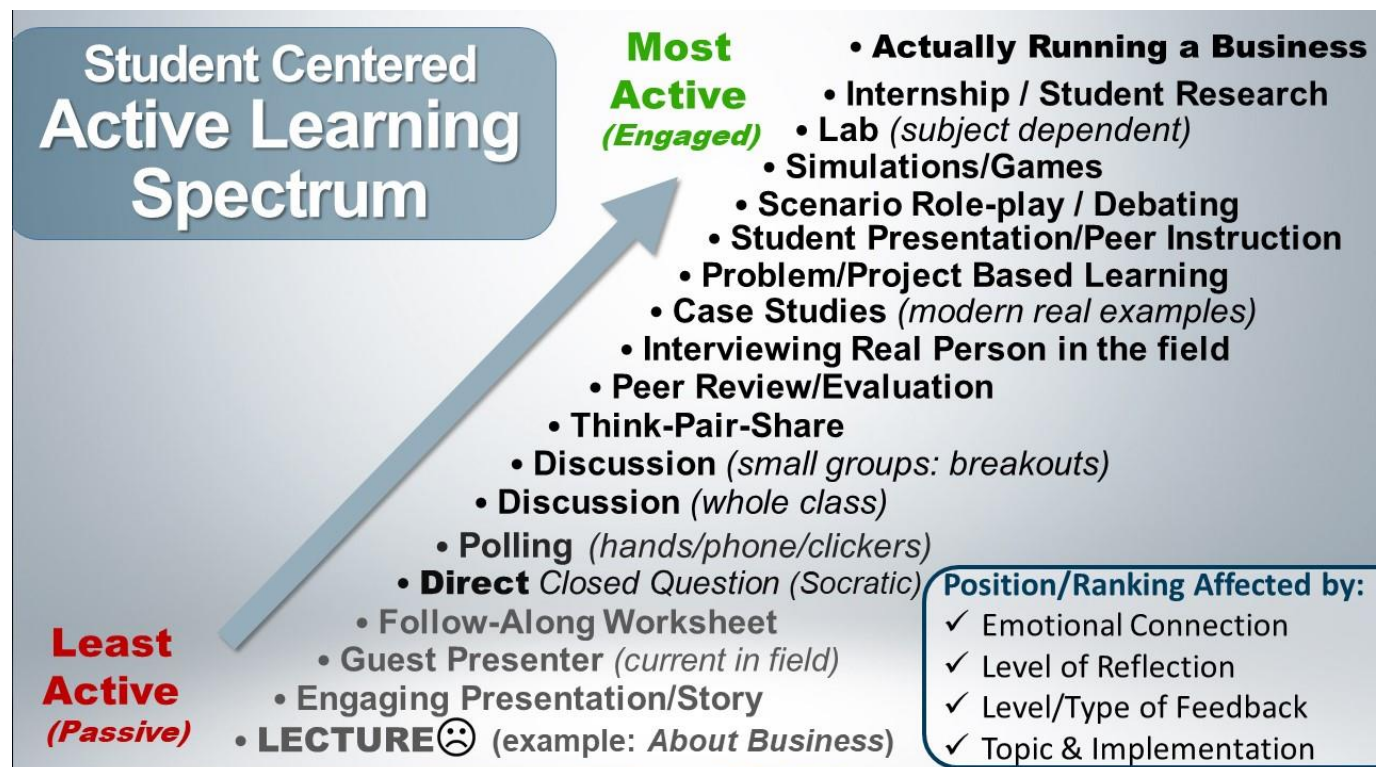
The best way to decide on Student Learning Objectives is to use backward design. Identify the desired knowledge, skills, and/or behaviors that students need to learn by the end of the course. Additionally, use Bloom's Revised Taxonomy when deciding what type and level of learning students should achieve by the end of the course (Krathwohl & Anderson, 2009). The bottom level (*Remember*) is generally considered less difficult, with the higher level (*Create*) as being more complex and challenging.



2) Assessment: determine what acceptable evidence would prove that learning has occurred regarding your specific Student Learning Objectives. Use both formative (as the course is going along) and summative (overall) assessments. Avoid using only one or two major tests (summative assessments) in the course in that this generally doesn't provide an accurate assessment of the students' learning. Instead use more formative assessments throughout the course to better gauge students learning and be able to provide more timely and accurate feedback (Wholey, 1996). Additionally, be sure that the test properly assesses what was actually taught.

Imagine a student was taught CPR (Cardiopulmonary Resuscitation) through hands-on active learning using a life-like mannequin. Then, for the test, they had to answer a series of a, b, c, d, questions on a computer. This test does not properly match what was actually taught. A better assessment would be for the student to actually perform CPR on a mannequin and for the instructor to evaluate their performance. This would provide proper instructional constructive alignment (Biggs & Tang, 2014).

3) Pedagogy (Teaching Learning Activities: TLAs): are the instructional techniques you use to deliver your instruction to help students learn. Research has repeatedly shown that active, more hands-on learning leads to greater understanding and student performance on assessments (Beichner et al., 2007; Capone, 2022; Warming 2017). For this reason, using a pure lecture type format, where the instructor spends most of the time out in front of students simply talking, is strongly discouraged because this only allows for passive learning which is less effective (Fraser et al., 2019; Freeman et al., 2014). As an instructor you must evaluate what needs to be learned, the time available, and other resources present in order to choose the best active learning pedagogy or TLA.

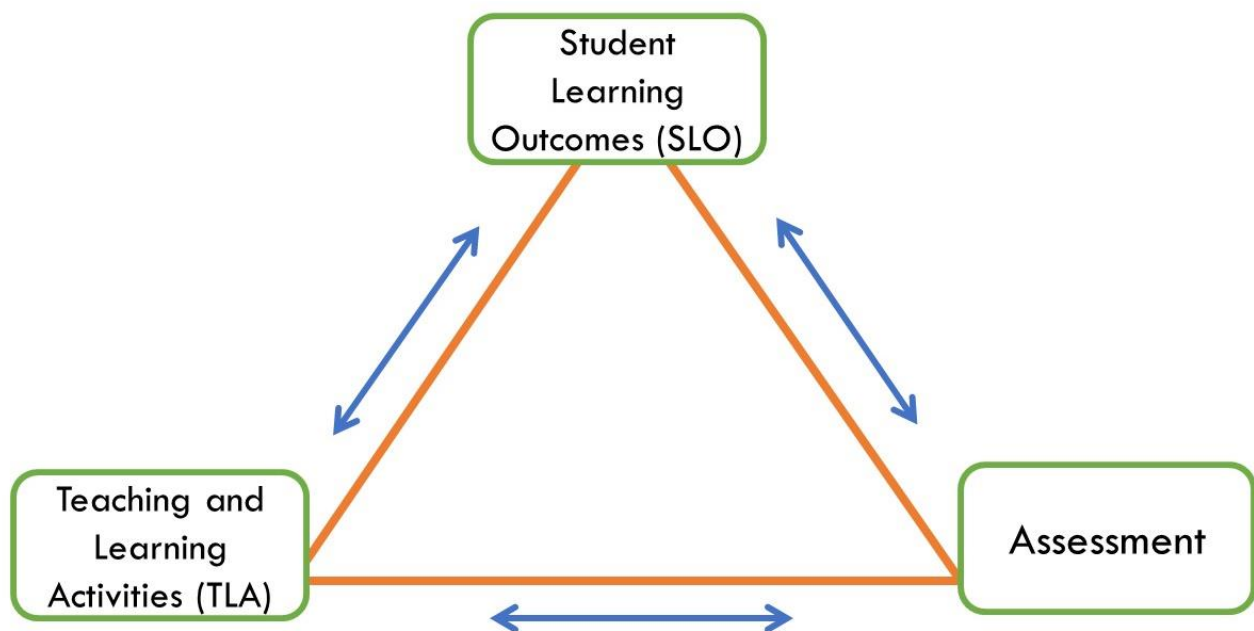


Student Centered Active Learning Spectrum (Anders, 2022)

Along with the actual learning activities, keep in mind that your actions and verbal/non-verbal communication affects the class' *Community of Inquiry* (class environment, equity, inclusion, and motivation) with your instructional, social, and cognitive practices (Anders, 2015; Garrison et al., 1999; Satar et al., 2019). Regardless of what pedagogy/TLAs are used, be sure that frequent, usable feedback is always provided to help the student understand and improve. Feedback is also provided through graded or ungraded formative assessment and graded summative assessment.

When all three aspects of instructional design are properly addressed, then an alignment triangle has been achieved and a more successful educational experience will be available for both the students and the instructors (Savard & Cotton, 1982; Leitzel & Vogler, 1994).

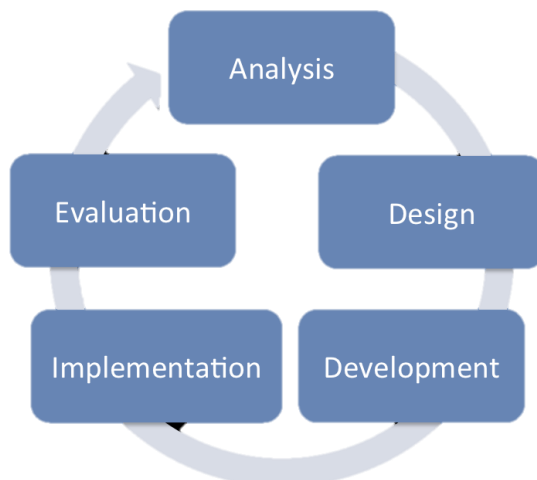
Instructional Design Alignment Triangle



Also referred to as instructional constructive alignment (Biggs & Tang, 2014)

ADDIE Model of Instructional Design:

although the three components of Student Learning Objectives (SLOs), Assessments, and Pedagogies (Teaching and Learning Activities: TLAs) are the key aspects to consider with instructional design, a popular step-by-step instructional design model, that still has these three components within it, is the ADDIE Model (Analyze, Design, Develop, Implement, and Evaluate), (Branson, 1975). Additional explanation and a user guide is available through the Purdue University Library at



<https://www.lib.purdue.edu/sites/default/files/directory/butler38/ADDIE.pdf>

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