Learner Diversity:

What is diversity in the classroom?

➢ Diversity is everything that makes people different from each other.
➢ This includes many different factors: race, ethnicity, gender, sexual orientation, socio-economic status, ability, age, religious belief, or political conviction.
➢ All these factors work together to inform how students (and teachers, and everyone else) encounter the world.
➢ A diverse learner is one of two things: A learner that is racially, ethnically, culturally, economically and or linguistically diverse.
➢ A learner who learns differently from the majority.

12 key elements for effective teaching for ethnic- and language-minority students. [Zeichner (1992)]

• Teachers have a clear sense of their own ethnic and cultural identities.
• Teachers communicate high expectations for the success of all students and a belief that all students can succeed.
• Teachers are personally committed to achieving equity for all students and believe that they are capable of making a difference in their students' learning.
• Teachers have developed a bond with their students and cease seeing their students as "the other."
• Schools provide an academically challenging curriculum that includes attention to the development of higher-level cognitive skills.
• Instruction focuses on students' creation of meaning about content in an interactive and collaborative learning environment.
• Teachers help students see learning tasks as meaningful.
• Curricula include the contributions and perspectives of the different ethnocultural groups that compose the society.
• Teachers provide a "scaffolding" that links the academically challenging curriculum to the cultural resources that students bring to school.
• Teachers explicitly teach students the culture of the school and seek to maintain students' sense of ethnocultural pride and identity.
• Community members and parents or guardians are encouraged to become involved in students' education and are given a significant voice in making important school decisions related to programs (such as resources and staffing).
• Teachers are involved in political struggles outside the classroom that are aimed at achieving a more just and humane society.
**Action and Academic Research:**

**Action Research:**

- Action research refers to a wide variety of evaluative, investigative, and analytical research methods designed to diagnose problems or weaknesses—whether organizational, academic, or instructional—and help educators develop practical solutions to address them quickly and efficiently.
- Action research may also be called a cycle of action or cycle of inquiry, since it typically follows a predefined process that is repeated over time.

A simple illustrative example:

- Identify a problem to be studied
- Collect data on the problem
- Organize, analyze, and interpret the data
- Develop a plan to address the problem
- Implement the plan
- Evaluate the results of the actions taken
- Identify a new problem
- Repeat the process

**Academic/Scholarly Research:**

- Defined as a “Systematic investigation into a problem or situation, where the intention is to identify facts and/or opinions that will assist in solving the problem or dealing with the situation”.
- This academic or scholarly research focuses on research goals/questions that arise from independent researchers. It uses formal, scientific and systematic procedures to discover answers.
- The scholarly research is guided by an already existing theory in order to reject or support the theory.
  - Questions tend to be more conceptual
  - Theoretically focused
  - Findings are generally made public
  - Results generally spur ideas and questions for future research
  - Assessed through peer review by means of academic discipline standards
  - Shared primarily through academic writings (doctoral dissertation, thesis, dissertation research, scholarly journals, academic conferences & presentations, academic articles and other publications (e.g., books)
Copyright and Plagiarism:

Plagiarism is using someone else's work or ideas without giving proper credit. In other words, because you are not giving attribution to the owner of the original work or idea -- you are presenting the idea or thought as your own.

✓ Plagiarism is a violation of academic norms but not illegal; copyright violation is illegal but quite common in academia.
✓ Plagiarism is an offense against the author; copyright violation is an offense against the copyright holder. In traditional academic publishing, they are usually not the same person, because copyright transfer agreements (CTAs) are so common.
✓ Plagiarism applies when ideas are copied; copyright violation occurs only when a specific fixed expression (e.g., sequence of words, use of an image) is copied.
✓ Avoiding plagiarism is about properly apportioning intellectual credit; copyright is about maintaining revenue streams.

Examples of Plagiarism (from Jamie Dendy)

✓ Quoting someone's words from the Internet, a printed article, or an interview, without acknowledging the author.
✓ Copying part of the content of a work into one's own paper without citing the source.
✓ Copying or buying a paper and handing it in as one's own.
✓ Falsely creating a citation that doesn't exist.
✓ Failing to credit and cite someone else's thoughts or ideas when paraphrasing.
✓ Paraphrasing in a way that relies too heavily on another's language or syntax.

Copyright Infringement:

➢ Copyright infringement (colloquially referred to as piracy) is the use of works protected by copyright law without permission for a usage where such permission is required, thereby infringing certain exclusive rights granted to the copyright holder, such as the right to reproduce, distribute, display or perform the protected work, or to make derivative works.
➢ The copyright holder is typically the work's creator, or a publisher or other business to whom copyright has been assigned. Copyright holders routinely invoke legal and technological measures to prevent and penalize copyright infringement.

Rubrics:

What is a rubric?

➢ A rubric is a scoring guide used to evaluate performance, a product, or a project. It has three parts:
• Performance Criteria
• Rating Scale
• Indicators.
✓ For you and your students, the rubric defines what is expected and what will be assessed. Whether
✓ for online or face-to-face courses, it indicates that you will evaluate according to specified criteria,
✓ making grading and ranking simpler, more transparent, and fairer.

What does a rubric look like?
✓ On the left side, the criteria describe the key elements of a student work or product.
✓ At the top, the rating scale identifies levels of performance. Under each section of the rating scale, the indicators provide examples or concrete descriptors for each level of performance.

Types of Rubrics:

<table>
<thead>
<tr>
<th>Type of Rubric</th>
<th>Definition</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Holistic or Analytic: One or Several Judgments?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Analytic</strong></td>
<td>✗ Each criterion (dimension, trait) is evaluated separately.</td>
<td>✗ Gives diagnostic information to teacher. ✗ Gives formative feedback to students. ✗ Easier to link to instruction than holistic rubrics. ✗ Good for formative assessment; adaptable for summative assessment; if you need an overall score for grading, you can combine the scores.</td>
<td>✗ Takes more time to score than holistic rubrics. ✗ Takes more time to achieve inter-rater reliability than with holistic rubrics.</td>
</tr>
<tr>
<td>Holistic</td>
<td>Description of Performance: General or Task-Specific?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• All criteria (dimensions, traits) are evaluated simultaneously.</td>
<td><strong>General</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Scoring is faster than with analytic rubrics.</td>
<td>• Can share with students, explicitly linking assessment and instruction.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Requires less time to achieve inter-rater reliability.</td>
<td>• Reuse same rubrics with several tasks or assignments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Good for summative assessment.</td>
<td>• Supports learning by helping students see &quot;good work&quot; as bigger than one task.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Single overall score does not communicate information about what to do to improve.</td>
<td>• Supports student self-evaluation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Not good for formative assessment.</td>
<td>• Students can help construct general rubrics.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Task-Specific**

• Description of work refers to the specific content of a particular task (e.g., gives an answer, specifies a conclusion).

• Teachers sometimes say using these makes scoring "easier."

• Requires less time to achieve inter-rater reliability.

• Cannot share with students (would give away answers).

• Need to write new rubrics for each task.

• For open-ended tasks, good answers not listed in rubrics may be evaluated poorly.
Learning Objectives:

➢ In education, learning objectives are brief statements that describe what students will be expected to learn by the end of school year, course, unit, lesson, project, or class period.
➢ In many cases, learning objectives are the interim academic goals that teachers establish for students who are working toward meeting more comprehensive learning standards.
  ✓ OBJECTIVES articulate the knowledge and skills you want students to acquire by the end of the course
  ✓ ASSESSMENTS allow the instructor to check the degree to which the students are meeting the learning objectives
  ✓ INSTRUCTIONAL STRATEGIES are chosen to foster student learning towards meeting the objectives

One way to approach course design is to start from the learning objectives, then move on to the other two components, and revisit the cycle iteratively as needed.

Articulating your learning objectives will help:

YOU select and organize course content, and determine appropriate assessments and instructional strategies.

STUDENTS direct their learning efforts appropriately and monitor their own progress.

Example from an English Functional Skills lesson

OBJECTIVE: To recognise the power of different types of language

OUTCOMES: I will be able to:

- Use formal and informal language (Entry level)
- Explain how to speak and write in appropriate language (Level 1)
- Teach others how to use a range of writing and speaking styles appropriate for different audiences

Objectives should be SMART: Specific, Measurable, Achievable, Realistic and Timebound.

Blooms Taxonomy:

➢ Bloom’s Taxonomy: this framework has been applied by generations of K-12 teachers and college instructors in their teaching.
➢ The framework elaborated by Bloom and his collaborators consisted of six major categories:

- Knowledge,
- Comprehension,
- Application,
- Analysis,
- Synthesis, and
- Evaluation.

➢ The categories after Knowledge were presented as “skills and abilities,” with the understanding that knowledge was the necessary precondition for putting these skills and abilities into practice.

- Knowledge “involves the recall of specifics and universals, the recall of methods and processes, or the recall of a pattern, structure, or setting.”
- Comprehension “refers to a type of understanding or apprehension such that the individual knows what is being communicated and can make use of the material or idea being communicated without necessarily relating it to other material or seeing its fullest implications.”
- Application refers to the “use of abstractions in particular and concrete situations.”
- Analysis represents the “breakdown of a communication into its constituent elements or parts such that the relative hierarchy of ideas is made clear and/or the relations between ideas expressed are made explicit.”
- Synthesis involves the “putting together of elements and parts so as to form a whole.”
- Evaluation engenders “judgments about the value of material and methods for given purposes.”

A criterion-referenced Test:

➢ Criterion-referenced tests and assessments are designed to measure student performance against a fixed set of predetermined criteria or learning standards—i.e., concise, written descriptions of what students are expected to know and be able to do at a specific stage of their education.

➢ In elementary and secondary education, criterion-referenced tests are used to evaluate whether students have learned a specific body of knowledge or acquired a specific skill set. For example, the curriculum taught in a course, academic program, or content area.

Norm-Referenced Tests:
➢ Norm-referenced refers to standardized tests that are designed to compare and rank test takers in relation to one another.

➢ Norm-referenced tests report whether test takers performed better or worse than a hypothetical average student, which is determined by comparing scores against the performance results of a statistically selected group of test takers, typically of the same age or grade level, who have already taken the exam.

➢ Calculating norm-referenced scores is called the “norming process,” and the comparison group is known as the “norming group.”

➢ Norming groups typically comprise only a small subset of previous test takers, not all or even most previous test takers.

➢ Test developers use a variety of statistical methods to select norming groups, interpret raw scores, and determine performance levels.

➢ Norm-referenced scores are generally reported as a percentage or percentile ranking. *For example, a student who scores in the seventieth percentile performed as well or better than seventy percent of other test takers of the same age or grade level, and thirty percent of students performed better (as determined by norming-group scores).*

**Innovation:**

➢ “Innovation in education means doing what’s best for all students. Teachers, lessons, and curriculum have to be flexible. We have to get our students to think and ask questions. We need to pique their curiosity, and find ways to keep them interested. Innovation means change, so we have to learn that our students need more than the skills needed to pass the state assessments given every spring. We have to give them tools that will make them productive in their future careers.” – Kimberly

➢ “Innovation, to me, means finding any way you can to reach all of your students. This means being willing and flexible to adjust what you teach and how you teach. We have to keep our students engaged and excited to learn. We have to create a safe place for them to make mistakes, take risks, and ask questions.” – Ashley

➢ “Innovation in education is always seeking knowledge that will support new and unique ideas in instructional techniques that will reach the students in more effective and exciting ways.” – Mischelle

➢ “Innovation in education is stepping outside of the box, challenging our methods and strategies in order to support the success of all students as well as ourselves. This transformation may be small or a complete overhaul, but it is done with purpose and supports the whole student.” – Whitney
“Innovation in education means allowing imagination to flourish and not be afraid to try new things. Sometimes these new things fail but it’s awesome when they are a success. Without the right attitude, innovation would just be a word and the art of education would miss out on some great accomplishments.” – Valerie

“Innovation means keeping yourself educated about new trends and technology in education. For example, I incorporated STEM bins into my classroom because there is a huge push for more STEM related activities in education. I think innovation is also being creative with the resources you’re given. Sometimes your building or district might not provide everything you need for a lesson so you need to be innovative and think on the fly of how you could make something work!” – Nadia

**Entrepreneurship education:**

- Entrepreneurship competence is the ability to identify and seize opportunities and to plan and manage creative processes that are of cultural, social or financial value.

- It requires a knowledge of contexts and opportunities, approaches to planning and management, ethical principles and self-awareness.

- It includes the skills of creativity (imagination, critical reflection, problem-solving), communication, mobilizing resources (people and things), and coping with uncertainty, ambiguity and risk.

- An entrepreneurial mind-set also includes the attitudes of self-efficacy, motivation and perseverance, and valuing the ideas of others.

- For entrepreneurship education to be effective in developing the competences of learners, the capacity of schools to create supportive and stimulating learning environments is as important as is the personal competences and motivation of educators.

- Entrepreneurship education cannot take place in isolation from the world outside of the school. It may require working in partnership with external organisations in order to facilitate learning in other ways.

**Project Based Learning:**

- Project Based Learning (PBL) is a teaching method in which students learn by actively engaging in real-world and personally meaningful projects.
In Project Based Learning, teachers make learning come alive for students.

✓ Students work on a project over an extended period of time – from a week up to a semester – that engages them in solving a real-world problem or answering a complex question. They demonstrate their knowledge and skills by creating a public product or presentation for a real audience.

✓ As a result, students develop deep content knowledge as well as critical thinking, collaboration, creativity, and communication skills. Project Based Learning unleashes a contagious, creative energy among students and teachers.

**Types of Misconceptions:**

➢ Preconceived notions are popular conceptions rooted in everyday experiences. For example, many people believe that water flowing underground must flow in streams because the water they see at the earth's surface flows in streams. Preconceived notions plague students' views of heat, energy, and gravity (Brown and Clement, 1991), among others.

➢ Nonscientific beliefs include views learned by students from sources other than scientific education, such as religious or mythical teachings. For example, some students have learned through religious instruction about an abbreviated history of the earth and its life forms. The disparity between this widely held belief and the scientific evidence for a far more extended pre-history has led to considerable controversy in the teaching of science.

➢ Conceptual misunderstandings arise when students are taught scientific information in a way that does not provoke them to confront paradoxes and conflicts resulting from their own preconceived notions and nonscientific beliefs. To deal with their confusion, students construct faulty models that usually are so weak that the students themselves are insecure about the concepts.

➢ Vernacular misconceptions arise from the use of words that mean one thing in everyday life and another in a scientific context (e.g., "work"). A geology professor noted that students have difficulty with the idea that glaciers retreat, because they picture the glacier stopping, turning around, and moving in the opposite direction. Substitution of the word "melt" for "retreat" helps reinforce the correct interpretation that the front end of the glacier simply melts faster than the ice advances.

➢ Factual misconceptions are falsities often learned at an early age and retained unchallenged into adulthood. If you think about it, the idea that "lightning never strikes twice in the same place" is clearly nonsense, but that notion may be buried somewhere in your belief system. (See the sidebar for another example.)