TED University
CTL Center for Teaching and Learning

TEDU Teaching and Learning Handbook

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About Teaching and Learning Handbook

The Teaching and Learning Handbook, prepared by faculty members, is designed to be a practical resource that supports instructors throughout their teaching journey at TED University. It covers key topics such as course design, the use of technology, active learning strategies, communication and motivation, and assessment practices. This book is intended to support your academic practice during the semester. We wish you a successful and productive academic semester.

We sincerely thank the authors, Assoc. Prof. Sibel Akın Sabuncu, Şevval Kübra Özer, Dr. Funda Alptekin, Assist. Prof. Merve Şahin Kürşad and Assoc. Prof. Gökçen Aydın Dalarslan for their contributions to this handbook.

Best regards,
Center for Teaching and Learning-CTL

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TEDU Teaching and Learning Handbook

CHAPTER 1

Course Design and Planning

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TED University Center for Teaching and Learning

CHAPTER 1

Course Design and Planning

Teaching means carrying out effectively the process of preparing the necessary arrangements for a teaching-learning process in accordance with the program outcomes specified in the curriculum of a course, in order to achieve the knowledge, skills, and behaviors expected as the product (Özçelik, 2014). In other words, the teaching process is the activity of guiding the learning of knowledge, skills, and values by the student (Gözütok, 2006) or guiding learning (Çelenk, 2019).

The basic principles for effective teaching are as follows: learner-centeredness (appropriateness to level), active participation, relevance to life, teaching from concrete to abstract, teaching from known to unknown, up-to-dateness, teaching from near to far, cost-effectiveness, clarity, and teaching from simple to complex (Çelenk, 2019; Güven, 2019; Küçükahmet, 2017).

The planning of a course consists of the elements of determining the general objectives of the course, the learning outcomes, the teaching-learning process, and the planning of the measurement and evaluation of student achievement. The planning of a course can be considered as a system, and the system refers to the harmonious functioning of these elements that make up the whole in a complementary way. In this context, the general objectives and learning outcomes of the course are the main elements of the system, and the other elements are arranged in line with the realization of these objectives and outcomes (Çelenk, 2019).

The objectives of a course express the general qualifications and characteristics to be gained by the student within the scope of a course. That is, they cover what students are expected to learn in a course and the subjects, knowledge, skills, and

attitudes they are expected to acquire throughout the course. At the same time, they inform students about the content of the course and guide the determination of learning strategies–teaching methods and measurement–evaluation methods.

Under each objective, there are more specific and measurable knowledge, skills, and behaviors that students are expected to acquire in order to achieve that objective, and these are called learning outcomes. Learning outcomes answer the following question: "What kind of knowledge, skills, or attitudes are students expected to acquire at the end of the course?" The learning outcomes to be determined by the answer to this question explain which knowledge, skills, and attitudes students will acquire at the end of a course. They should be learner-centered, measurable, observable, and clearly expressed. Thus, learning outcomes help students understand what they are expected to learn in that course, with which learning strategies–teaching methods they will acquire them, and how their learning achievements will be assessed. The content to be covered in the course, the learning strategies–teaching methods, and the measurement–evaluation methods are determined according to the learning outcomes.

Learning outcomes are statements written in a behavior-oriented way that show the target behaviors expected to be achieved by students at the end of the teaching–learning process. The focus is not on how teaching will take place or how it will be conducted, but rather on the product expected from teaching. In this regard, a good learning outcome focuses on what the student will know or be able to do at the end of a certain period of time and indicates how this knowledge or skill will be demonstrated. Therefore, it focuses on student performance, not teacher performance. Attention should be paid to writing outcomes in a behavior-oriented, measurable, and observable manner. General and vague actions should be avoided.

Learning outcomes are classified by Bloom into three domains: cognitive, affective, and psychomotor. The cognitive domain covers the characteristics that students are expected to demonstrate mentally. The sublevels of this domain are knowledge, comprehension, application, analysis, synthesis, evaluation, and creation. The affective domain includes the characteristics related to attitudes, values, interests, and emotions that are intended to be developed in the student. The sublevels of the

affective domain are receiving, responding, valuing, organizing, and characterizing. Finally, the psychomotor domain is related to bodily movements and motor skills. The sublevels of the psychomotor domain are perception, set, guided response, mechanism, complex overt response, adaptation, and creation.

Especially the objectives in the cognitive and affective domains constitute the aims of many theoretical courses in higher education. In practice-based courses such as studios, the skills in the psychomotor domain also come to the fore. However, it is observed that higher education course outcomes are generally at the cognitive level. Considering that the affective dimension is often included in program outcomes, it is recommended that when writing course outcomes, it should be checked whether there is an affective and/or psychomotor characteristic that students are expected to acquire, and if necessary, it should definitely be included.

Below, in Table 1 and Figures 1, 2, and 3, Bloom's taxonomy is presented according to the cognitive, affective, and psychomotor domains, and each domain consists of various levels starting from level 1 and progressing from simple to complex:

Table 1

Bloom's Taxonomy/Classification

Cognitive Domain	Affective Domain	Psychomotor Domain
1. Remembering	1. Receiving	1. Perception
2. Understanding	2. Responding	2. Set
3. Applying	3. Valuing	3. Guided Response
4. Analyzing	4. Organizing	4. Mechanism
5. Evaluating	5. Characterizing	5. Complex Overt Response
6. Creating		6. Adaptation
		7. Creating

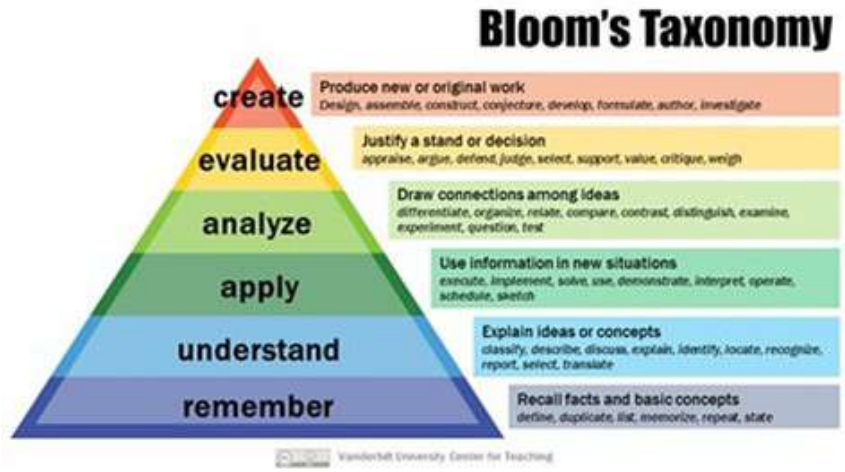

Figure 1. Cognitive Domain Stages

Figure 2. Affective Domain Stages

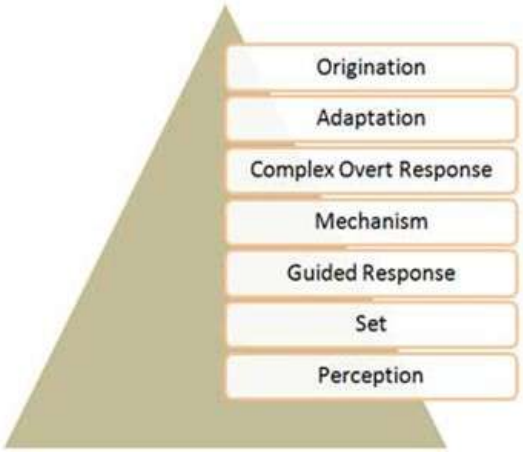

Figure 3. Psychomotor Domain Stages

When creating the learning outcomes of the course, the following points should be taken into consideration:

- Learning outcomes should be student-centered. Therefore, they can be expressed as "Upon successful completion of this course, students will be able to …"
- Learning outcomes should be written using the verbs included in Bloom's Taxonomy shared by CTL (Center for Teaching and Learning).
- Only one verb should be used for each learning outcome.
- To obtain more detailed information and to use appropriate expressions and verbs when writing course learning outcomes, you can refer to the source titled https://ctl.tedu.edu.tr/sites/default/files/docs/writing-learning-outcomes_0.pdf.
- Learning outcomes may be related to cognitive, affective, and psychomotor domains.
- The learning outcomes to be created in line with the course objectives should cover the cognitive, affective, and psychomotor domains and their different levels as much as possible.
- It is expected that the learning outcomes of a course consist of preferably a maximum of 5–6 items for undergraduate courses and 6–7 items for graduate courses.
- The determination of the course objectives and learning outcomes in advance and their sharing with students through the syllabus is important for students to see the course as a whole and to have greater awareness about their own learning.
- Examples of learning outcomes are given below.

Sample Learning Outcomes:

Upon successful completion of this course, students will be able to:

- identify common theories of learning and their limitations (Cognitive Domain – Remembering)
- discuss emerging instructional technologies for their potential impact on teaching and learning process (Cognitive Domain – Understanding)
- apply principles of instructional design to integrate technologies into various educational contexts (Cognitive Domain – Applying)

- assess the effectiveness of instructional technologies in meeting educational goals and improving learner outcomes (Cognitive Domain – Evaluating)

Content

Content involves the process of determining topics in such a way that they will lead to achieving the course learning outcomes and serves as a tool for reaching these outcomes. Content should be consistent both with learning outcomes and with learning strategies and teaching methods, as well as with measurement–evaluation methods. In addition, the validity and reliability of the information included in the content, and its adaptability in accordance with teaching principles, are important criteria in determining the content.

Active Learning Strategies and Teaching Methods

It includes the teaching and learning methods to be used in the course. These methods must be appropriate to the learning outcomes of the course. The active (student-centered) learning strategies and teaching methods recommended by our university are presented below:

Active Learning Strategies & Teaching Methods	☐ Brainstorming ☐ Case Studies ☐ Classroom Polling ☐ Collaborative Learning ☐ Concept Mapping ☐ Demonstration/Worked Examples ☐ Discussions ☐ Debates ☐ Drama / Role Playing ☐ Educational Games ☐ Experiential Learning (lab experiments, practicums, studio performances) ☐ Field Trips ☐ Flipped Classroom	☐ Inquiry-based Learning ☐ Interactive Lecture ☐ Jigsaw ☐ Microteaching ☐ Oral Presentations ☐ Peer Teaching ☐ Problem-based Learning ☐ Project-based Learning ☐ Questioning ☐ Service Learning ☐ Simulations ☐ Storytelling ☐ Think-Pair-Share ☐ Other(s): …

In determining the active learning strategies and teaching methods to be used in the course, factors such as the effectiveness level of the strategies and methods planned to be used, their potential to achieve the course learning outcomes, students' readiness to carry out the expected activities, as well as their interests and motivations, should be taken into consideration.

Assessment Methods

It includes the methods to be used for measuring and evaluating the learning outcomes determined for students in a course. It is important that the assessment methods used in courses are consistent with the course learning outcomes and with the learning strategies–teaching methods. In order to determine the extent to which students have achieved the course learning outcomes, the assessment methods recommended by our university are presented below:

Assessment Methods	☐Active Learning Exercises (ALE)	☐Performance Based Assessment
	☐Case Study	☐Portfolio
	☐Essay/Paper (Term paper, research paper, reflection paper)	☐Presentation (Oral, Poster)
	☐Homework	☐Project
	☐Lab Assignment/ Performance/ Report	☐Quiz
	☐Observation	☐Self-evaluation
	☐Oral Exam	☐Test/Exam
	☐Peer Assessment	☐Other(s): …

The Relationship between Course Learning Outcomes, Learning Strategies–Teaching Methods, and Assessment Methods

An important issue that should be emphasized in the course design process is that the selected learning strategies–teaching methods and assessment methods must be consistent with the course learning outcomes. In this context, the objectives and learning outcomes of the course should be taken as the basis when determining the learning strategies–teaching methods and assessment methods. Therefore, when planning the learning strategies–teaching methods and assessment methods of the course, the objectives and learning outcomes should be reviewed frequently. Only in this way can all elements of the course function in an integrated manner.

Example:

- Upon successful completion of this course, students will be able to apply principles of instructional design to integrate technologies into various educational contexts (Cognitive Domain – Applying)
    - **Active Learning Strategies–Teaching Methods:** Demonstration, Collaborative Learning (appropriate for Cognitive Domain – Applying level)
    - **Assessment Methods:** Project, portfolio (appropriate for Cognitive Domain – Applying level)

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CHAPTER 2

Active Learning in Higher Education

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CHAPTER 2

Active Learning in Higher Education

"What I hear, I forget.
What I hear and see, I remember a little.
What I hear, see, and ask questions about or discuss with someone else, I begin to understand.
What I hear, see, discuss, and do, I acquire knowledge and skills.
What I teach to another, I master" (Silberman, 1996)

Silberman (1996), inspired by Confucius, expressed ideas that reflect the core principles of active learning. His statements point out that passive listening has only a limited effect, whereas retention and understanding are strengthened when learners engage with visual, auditory, and interactive experiences. In line with this, Bonwell and Eison (1991) describe active learning as students' involvement in meaningful tasks that encourage them to reflect on what they have done. Prince (2004), however, defines it as a teaching approach that directly engages learners in the learning process. While Prince emphasizes the instructor's role in creating opportunities for participation, Bonwell and Eison highlight the importance of students' own reflection. Together, these perspectives stress the necessity of student engagement.

Active learning, however, is not restricted to physical participation. Demirel (2002) argues that learners should take responsibility for their decisions and their own learning, while Açıkgöz (2008) views active learning as a process that requires the use of cognitive skills to handle complex tasks. Similarly, Bonwell and Eison (1991) and Fink (2003) underline its multidimensional nature, which includes analysis, synthesis, knowledge sharing, and evaluation. Chickering and Gamson's "Seven Principles for Good Practice" also support this view, stating that learning does

not occur simply by listening to an instructor or repeating information. Instead, learners must connect new knowledge with prior experiences and apply it to real-life situations to achieve meaningful understanding.

The book that is Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses highlights the importance of developing a holistic perspective on active learning (Fink, 2003). This perspective involves a balanced integration of three essential components: gaining information and ideas, engaging in experiences, and reflecting on those experiences in Figure 1.

By combining these elements, Fink emphasizes that learners do not simply receive knowledge but actively construct it, participate in meaningful experiences, and critically reflect on what they have learned. In this way, learning becomes more than memorizing information; it involves connecting new ideas to prior knowledge and applying them to real-life situations to achieve deeper understanding.

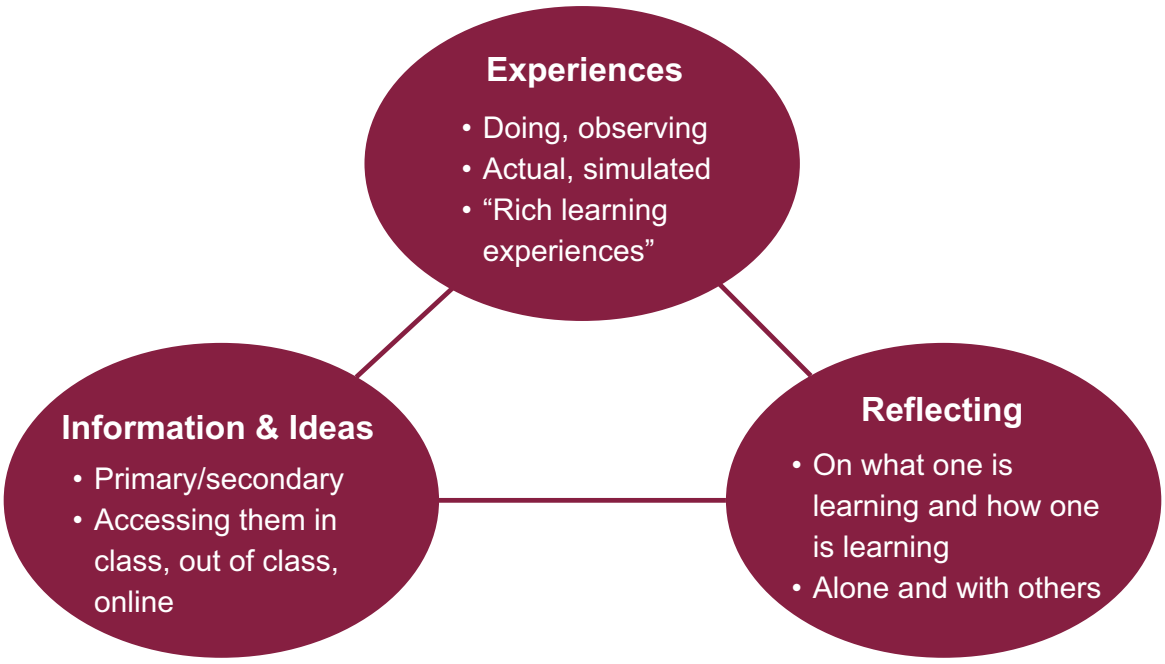


Figure 1. Holistic View of Active Learning

Active Learning Principles

In addition to defining active learning in higher education, it is also important to understand its underlying principles. The literature outlines several key principles that shape the practice of active learning.

According to Demirel (2007), active learning is characterized by four main features. First, students are encouraged to access and explore resources, helping them develop different ways of acquiring knowledge. Second, they are given opportunities to organize and present what they have learned. Third, students take responsibility for their own learning through individual or group projects and work collaboratively toward shared goals. Finally, a supportive learning community is fostered, where students can exchange information and engage in meaningful discussions.

Similarly, Wilke (2003) identifies five important steps in the active learning process. In line with Demirel's third principle, he stresses the importance of giving students a voice in their learning. He further highlights the development of scientific process skills by limiting direct information delivery, encouraging higher-order thinking, promoting participation in activities, and supporting students' exploration of their own attitudes, values, and beliefs about learning.

Chickering and Gamson's book that is *Seven Principles for Good Practice in Undergraduate Education* have had a significant influence on teaching. These principles include:

1. Stimulating faculty members and student interaction
2. Fostering student collaboration and mutualness
3. Promoting active learning
4. Giving immediate feedback
5. Stressing the importance of time on assignments
6. Expressing superior criterias
7. Esteeming various learning styles and skills (Chickering & Gamson, 1987)

Instructional Strategies of Active Learning

It is important to identify the instructional strategies commonly used in higher education in order to understand the current state of active learning. A wide range of strategies and practices are employed, all with the goal of encouraging students to take an active role in their own learning (Anderson et al., 2013; Floyd & Yerby, 2014; Mabrouk, 2007; Weimer, 2002).

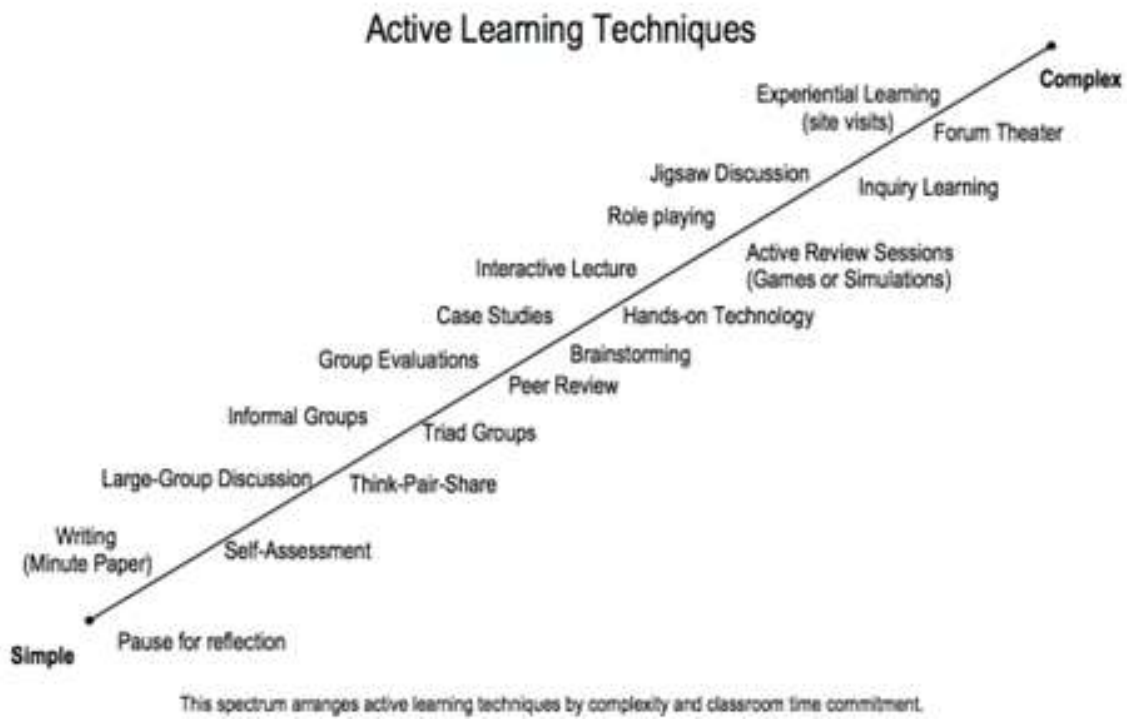


Figure 2. Active Learning Techniques (Retrieved from by the Center for Research on Learning and Teaching, University of Michigan)

Think-Pair-Share (TPS)

Think-pair-share (TPS) is a collaborative learning strategy where students work together to solve a problem, scenario, or question. Think-Pair-Share is an active learning strategy designed to promote student engagement, even when learners show limited initial interest in a topic (Lightner & Tomaswick, 2017).

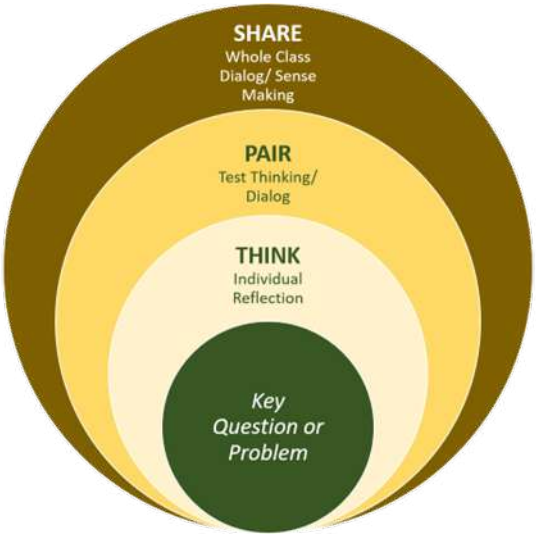
How to Implement TPS in my class?

THINK: You can pose an open-ended question, short problem or scenario aligned with your instructional goal and ask them to think to themselves for about 1 minute and write down their thoughts.

According to Wiggins and McTighe (1998), the question should be both challenging and aligned with the learning objectives of the lesson.

PAIR: You can ask them to turn to the person next to them and share their thought process / answer with each other. Groups can be made up of 2 or 3 students. You should tell students how they should be spending the time throughout (usually 5 minutes) and let them know when they should be finishing up their thoughts.

SHARE: Allow each group to choose who will present their ideas to the rest of the class. Pairs, then, share their ideas with a larger group, such as the whole class. Students are more comfortable when presenting their ideas to a group with the support of a partner.



Problem-Based Learning

It is an instructional approach that emphasizes students' active involvement in their own learning by presenting them with real-life problems and encouraging collaborative research and critical thinking (Arambula-Greenfield, 1996; Barrows, 1986; Savery & Duffy, 1995). In a PBL environment, learners engage with complex, open-ended problems, take responsibility for identifying and using appropriate resources, and develop effective communication skills with their peers (Rosing, 1997). When confronted with authentic issues, students are encouraged to explore alternative solutions, either individually or in groups, fostering self-directed learning (Prince, 2004).

Collaborative and Cooperative Learning

Due to their emphasis on group work and student interaction, collaborative learning and cooperative learning are closely associated with active learning (Watters, 2014). Although the two terms are often used interchangeably, they represent distinct instructional strategies (Cooper & Robinson, 1998).

According to Cohen (1994), cooperative learning involves learners working in small groups to accomplish a well-defined task, where each individual actively participates and contributes to the group. In contrast, collaborative learning is characterized by learners' joint engagement in an organized attempt to solve a problem, typically in a less structured manner that requires the distribution of responsibilities among participants (Roschelle & Teasley, 1995; Garrison et al., 2000).

Concept Map

A concept map is described by Novak and Gowin (1984) as a schematic tool for representing a network of concepts. It builds on Ausubel's cognitive psychology, which emphasizes that learning occurs through integrating new ideas into existing cognitive structures (Novak & Musonda, 1991). From this perspective, concept maps help learners connect unfamiliar ideas with what they already know (Coffey et al., 2003).

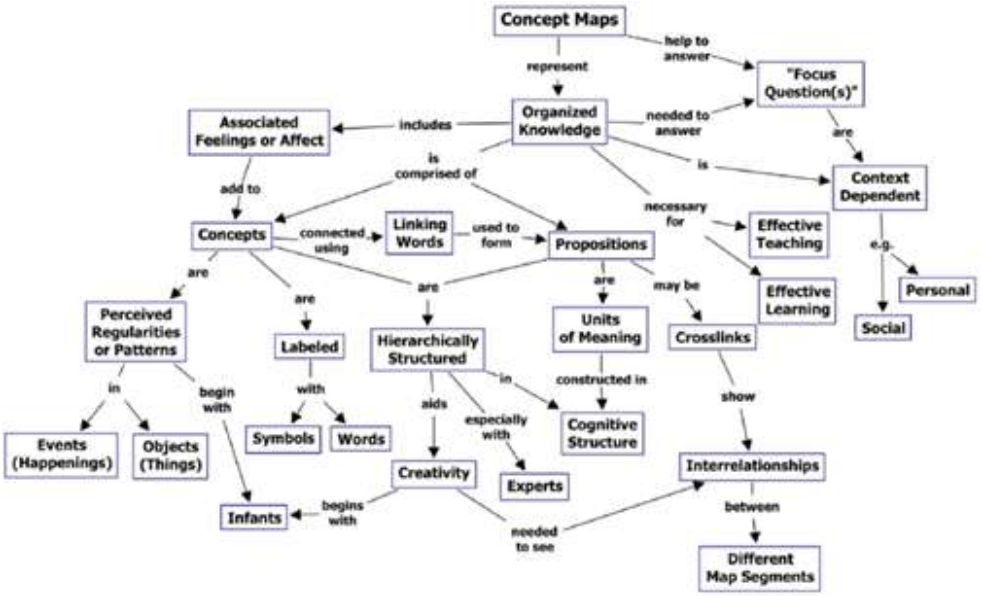


Figure 3. A Concept Map Showing The Key Features of Concept Maps. (Novak & Cañas, 2008)

As an active learning strategy, they provide a framework for organizing and linking concepts, which supports deeper understanding. By visually displaying the relationships among ideas, concept maps encourage synthesis of information, recognition of patterns, and the development of higher-order thinking skills (Lee et al., 2013).

Case Based Learning

Case-based learning is an instructional approach that engages learners in addressing problems and tasks through real or simulated cases (Levine, 2017). According to Shulman (1992), a case is "a narrative, a story, or a set of events that unfold over time in a particular place" (p. 21). Within this framework, learners are presented with complex scenarios that require them to integrate knowledge, generate solutions, and strengthen their reasoning skills (Hmelo-Silver, 2004).

According to Wasserman (1994) and Herried (1997) effective cases for learning share several characteristics:

- The case content is closely aligned with the overall instructional goals and objectives.
- The case tells a story and focuses on an issue that arouses interest.
- The case should be written in the present tense and deal with an authentic situation not more than five years old.
- The case includes direct quotes, using the characters' dialog to tell the story.
- The case clearly states and illuminates the dilemma without resolving it.
- The case provokes conflict and forces decision making.
- The case is short.

Project-Based Learning

Project-based learning involves students in an inquiry process centered on challenging issues along with products or projects that facilitate the acquisition of information and abilities (Markham et al., 2003). Project-based learning encompasses several key elements that are essential for its implementation:

1. Utilization of leading questions
2. Active engagement of learners in research aimed at addressing questions
3. Collaborating investigation and search for solutions to the motivating answer to the driving question by students, instructors, and external stakeholders
4. Effective integration of technology to facilitate knowledge, support investigative processes, and foster collaboration among participants
5. Creation of products or tangible outcomes that offer viable solutions pertaining to the motivating question
6. Application of authentic assessment (Blumenfeld et al., 1991; Frank & Barzilai, 2004; Krajcik et al., 1994, 1999; Marx et al., 1997; Tal et al., 2000)

Inquiry Based Learning

Inquiry-based instruction is grounded in constructivist learning theory, where learners are engaged in problem-solving tasks that demand logical reasoning, investigation, and the ability to establish connections (NCTM, 2000; Supovitz et al., 2000). This approach encourages students to formulate questions, explore possible solutions, and construct meaningful links to prior knowledge (Deskins, 2012). The National Research Council (2000) further emphasizes five essential dimensions of inquiry-based learning that can be applied across educational levels to maximize its benefits.

The National Research Council (NRC, 2000) identifies five key aspects of inquiry-based learning that can be applied at all educational levels to fully realize its benefits.

1. Students pose scientifically focused queries (p. 24).

2. Students emphasize evidence, leading them to come up with and analyze explanations that meet scientifically directed queries (p. 25).

3. Students generate responses based on data for responding to scientifically oriented queries (p. 26).

4. Students evaluate their justifications in the context of clarifications, notably the ones that represent scientific understanding (p. 27).

5. Students express and support their justifications (p. 27).

Peer Instruction

Peer instruction is a strategy in which students support one another and reinforce each other's learning toward a shared goal (Graybeal & Stodolsky, 1985; Hooker, 2010; Mynard & Almarzouqi, 2006; Yardım, 2009). It allows peers to explain concepts in accessible language, making complex ideas easier to understand (Hooker, 2010; O'Donnell, 2006; O'Donnell & O'Kelly, 1994).

According to Mazur (1997), peer instruction shifts the focus from simple information transfer to conceptual understanding, encouraging students to take an active role in constructing knowledge. Topping (1996) further emphasizes that peer instruction occurs when higher-achieving students assist lower-achieving students in their learning (p. 322).

Simulation-Based Learning

Alessi and Trollip (2001) defined simulation as "a model of phenomenon or activity that users learn about through interaction with it" (p. 213). Simulations, characterized by their ability to change variables within a virtual environment (Wilson, 2016), present an interactive and visually immersive learning experience (Plass et al., 2012). It has emerged as effective instructional tools for dealing with issues from daily life (Snir et al., 1993) and understanding abstract topics that can be challenging for students to completely comprehend (Shaw & Switky, 2018).

Active Learning in Practice: Insights from TED University

In line with a needs assessment conducted at TED University, Özer (2023) examined faculty members' perceptions of active learning and the instructional strategies they implement in undergraduate courses. The study drew on survey data from 122 faculty members representing five faculties, Education, Arts and Sciences, Architecture, Economics and Administrative Sciences, and Engineering. The findings provide a picture of how active learning is perceived and practiced across different disciplines within the university, while also pointing to opportunities and challenges in its implementation.

Results show that faculty members hold strongly positive views regarding active learning. More than 80% of participants agreed that active learning enhances student engagement, motivation, and overall learning outcomes. Group work, class discussions, projects, and case studies emerged as the most widely used instructional strategy, with nearly 70% of faculty members reported frequent use of them. These results suggest that active learning has become a central part of classroom practices at TED University.

At the same time, the study indicates that less commonly used instructional strategies such as peer instruction, concept mapping, and simulation-based learning were reported by under 30% of faculty members. This suggests that although instructors acknowledge the benefits of active learning, many still rely on familiar strategies, while less commonly used instructional strategies remain not widely adopted.

The research also reveals important institutional constraints. Faculty members consistently identified time pressures, heavy teaching loads, and large class sizes as the three major barriers to adopting active learning. More than 60% of participants stated that workload demands limited their ability to implement with new approaches. This finding provides a tension between faculty motivation and structural realities, pointing to the need for institutional support in order to bridge the gap between perception and practice.

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TEDU Teaching and Learning Handbook

CHAPTER 3

Using Technology in Education

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TED University Center for Teaching and Learning

CHAPTER 3

Using Technology in Education

Technology has become an indispensable part of education today. It enriches the learning experience, increases student participation, and makes teaching more efficient. Instructors are expected to know and effectively use digital tools and resources that can meet various needs in their courses. This part of the guide aims to provide practical information on integrating digital tools and innovative technologies into teaching

1.1 Before Adopting a Digital Tool: What Instructors Should Know and Do

1) Pedagogical Preparation

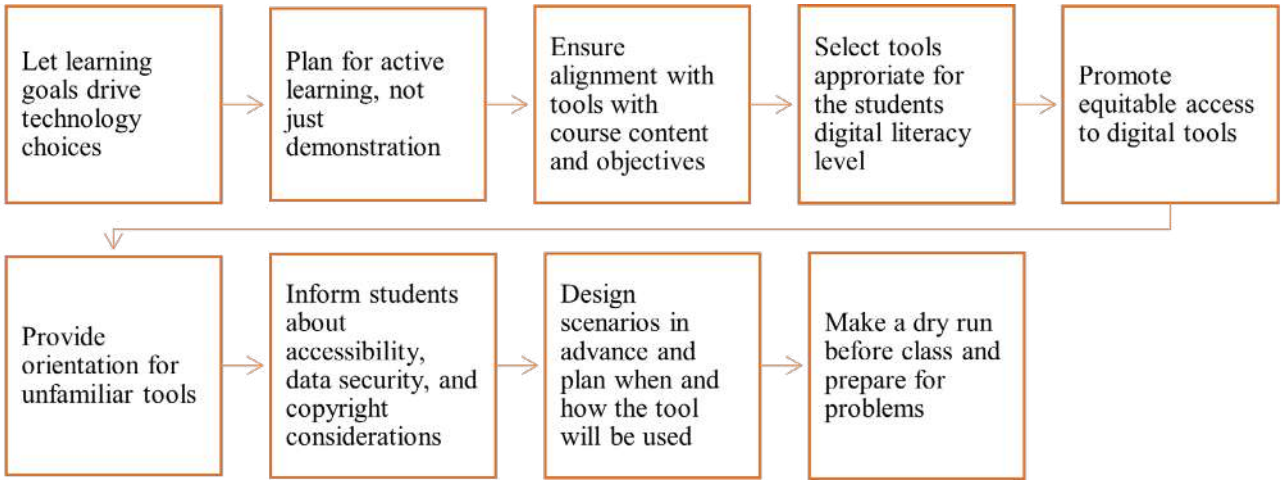
The approach should be "technology for learning goals," not "technology for technology's sake". After determining the learning objectives, you should choose a digital tool based on how it will support those goals. The use of the tool should be planned to ensure active student participation, not just for a demonstration. You should also check if the tool is suitable for the course content, learning methods, and assessment methods.

Ensure that every student has equal access to the tool, both in and out of the classroom. Students' technological literacy, device access, and internet access should also be similar.
To prevent students who are already familiar with an application from having an unfair advantage, provide a demonstration beforehand.

Example
A homework assignment given via **ChatGPT** should not give an advantage to students with a "Plus" subscription.

Plan usage scenarios and a detailed implementation strategy before coming to class. For an in-class activity, the plan should ensure it does not exceed the allotted time. Communicate usage guidelines, login links, and technical requirements to students in advance. A rehearsal before the lesson can help identify and prevent potential issues.

Tips for Pedagogical Preparation



2) Technical Preparation

The selected digital tool should be used and tested in detail before the lesson to understand its functionality and workflow. Check the license type (paid, free, institutional, or personal) and ensure students can also access it with the appropriate account type. If a trial version is used, check its duration or data limit. The tool should be tested on different devices (computer, tablet, phone) and browsers. Always have alternative methods ready in case of a technical problem. Know how data is stored and shared. Inform students about privacy and the handling of their personal data.

3) Post-Use Evaluation

After using a digital tool, it's important to evaluate its contribution to the learning objectives. This helps determine its effectiveness and provides guidance for future use. Getting feedback from students, especially when they are using a tool for the first time, is also crucial for making improvements.

1.2 Digital Tools and Innovative Technologies

1) Digital Tools

- **Learning Management System (LMS):** LMS help educators manage courses, organize content, and communicate with students. In TEDU, a customized version of Moodle is used as an LMS. You can upload a syllabus, lecture slides, and reading materials to the LMS and also you can create other course materials using plug-ins such as H5P. You can also create a discussion board where students can post questions about the readings and a submission portal for homework assignments, ensuring all course materials and communication are in one place. You find detailed information about how to use from CTL website.

- **Interactive Presentation and Polling Tools:** Tools like **Mentimeter, Slido, Kahoot!**, and **Poll Everywhere** enhance in-class participation and provide instant feedback. These tools transform a one-way lecture into an interactive dialogue.

Example
During a lecture on a complex topic, you can use Mentimeter to ask a quick multiple-choice question to check for student understanding. The results are displayed instantly as a bar graph or word cloud, allowing the instructor to see if students grasped the concept or if they need to spend more time on it.

- **Content Creation Tools:** Visual and audio-visual content can be prepared with tools like **Canva** and **Genially**. These applications empower both educators and students to create engaging visual and multimedia content.

Example
A history professor can use Canva to design a visually appealing infographic timeline of a historical period to share with students.

Moreover the course content in video or podcast format allows students to learn at their own pace. You can record lessons using tools like **OBS Studio, Audacity, Clipchamp**, or even a simple phone camera and microphone, and then share them on online platforms.

Example

In the same history course, students can be tasked with creating a short video or podcast using a tool like **OBS Studio** to summarize a key historical event for a class presentation.

- **Collaboration and Project Management Tools:** Tools such as **Trello, Miro,** or **Google Drive** help organize and make group work more efficient. They allow students to collaborate on documents, share ideas, and track projects on a shared platform. These tools are essential for organizing and facilitating group projects.

Example

For a group research project, students can use a tool like **Trello** to create a project board with columns for "To Do," "In Progress," and "Done." They can create cards for individual tasks (e.g., "Research Topic A," "Write Introduction," "Create Presentation Slides"), assign them to group members, and track their progress, ensuring accountability and a smooth workflow.

Note

While we will discuss **AI** applications under the innovate technologies heading, almost all the tools on we mentioned in this guide also offer **AI** support. For example, with **Canva**, you can create visuals using prompts.

Innovative Technologies in Education

Innovative technologies like **AI, Virtual Reality (VR),** and **Augmented Reality (AR)** offer powerful ways to deepen the learning experience. These technologies help visualize complex concepts, create realistic simulations, and provide interactive learning environments.

Artificial Intelligence (AI)

AI is at the forefront of educational innovation, primarily by enabling personalized learning. Platforms powered by AI can adjust to a student's pace and learning style, providing customized content, feedback, and support. AI can automate the grading of quizzes and essays, freeing up educators' time to focus on more complex tasks. More advanced systems can provide targeted feedback to improve students' writing and critical thinking skills.

Example

In a writing assignment, Grammarly can be used to provide students with automated feedback on grammar and style in their essays. Moreover, you can use Gradescope to analyze the content, provide a preliminary grade based on a pre-set rubric, and identify common themes or errors. You can then review the AI's suggestions and provide more detailed, human-centric feedback where needed.

Example

In a large-enrollment course, AI-powered grading tools can used to quickly assess multiple-choice quizzes, providing students with immediate scores and feedback. This saves the valuable time, allowing you to focus on providing more detailed feedback on more complex assignments.

AI assists you with routine tasks like lesson planning, attendance tracking, and generating reports, allowing them to focus more on direct student interaction.

Example

In order to generate differentiated lesson plans with a variety of materials, including different reading levels, quizzes, and hands-on activities, all tailored to the specific needs of their classroom you can use applications such as **magicschool.ai**, **Education Copilot** and **school.ai.** You can design a whole 14-week course using **Almanacak.ai.**

Note

Ethics & Accuracy Note: When using AI tools, always verify the accuracy of generated content and act in line with institutional ethics and responsible-use guidelines.

Note

The same LLM technology that powers platforms like ChatGPT can be found in other tools, such as **Almacak.ai**, which simply uses a distinct interface to serve the results.

Virtual and Augmented Reality (VR/AR)

VR and AR create immersive learning environments that make abstract concepts tangible and accessible. These technologies create immersive and hands-on learning experiences. Safe simulation environments will be provided for students to practice complex, dangerous, or high-stakes procedures **Virtual Reality (VR)** uses headsets to fully immerse students in a computer-generated world, allowing them to experience things that would be impossible in a traditional classroom. **Augmented Reality (AR)** overlays digital information onto the real world using a device like a smartphone or tablet. It can add digital layers to physical materials.

- **Virtual Field Trips:** Students can visit historical sites like ancient Rome or explore the deep sea without leaving the classroom.Virtual field trips allow students to visit distant locations or historical sites without leaving the classroom. This technology breaks down geographical and financial barriers, making it possible for students to explore a wide range of environments. Tools and applications such as **Nearpod** and uploaded 360-degree **YouTube** VR videos can be used. Also there are android or ios applications such as **Sites in VR, Travel world VR** and **3D Mekanlar** and etc.

Example
A history class can use a VR application to “walk through” the ruins of ancient Rome or explore the Giza pyramids. Students can look at monuments from all angles, and interactive elements can provide information about specific structures or artifacts.

- **Abstract Visualization:** Students can “shrink down” to the molecular level to observe chemical reactions or explore a cell’s structure in 3D. VR and AR can make abstract, theoretical, and invisible concepts visible and interactive. This helps students understand difficult subjects by allowing them to experience them in a tangible way. **EonXR** is a good tool to find various AR-VR activities in various topics. Also using **Delightex**, you can create your own environments besides various activities located at its library.

Example

A chemistry student can “shrink down” to the molecular level in a VR environment to visualize and manipulate chemical bonds, or a physics student can experience the laws of motion in a world without gravity or friction. This allows them to see and feel the concepts rather than just reading about them.

Example

A biology class can use an AR app on a tablet to scan an image of a human heart in their textbook. A 3D model of the heart appears on the screen, allowing students to “walk around” it and interact with the different parts as they are learning about the circulatory system.

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TEDU Teaching and Learning Handbook

CHAPTER 4

Assessment

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CHAPTER 4

Assessment

Assessment is a key component of effective teaching and learning in higher education. It serves multiple purposes: measuring what students have learned, supporting their progress, and ensuring that course goals are achieved. To design meaningful assessments, it is essential to consider what we teach, how we teach, and how we evaluate—this is where **constructive alignment** becomes central.

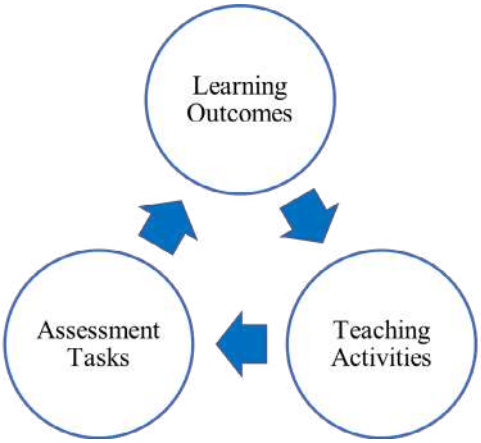


Figure 1. Constructive Alignment in Course Design

This model illustrates the alignment between intended learning outcomes, teaching and learning activities, and assessment tasks. Effective course design ensures that what students are expected to learn (learning outcomes), how they learn it (teaching activities), and how their learning is measured (assessment tasks) are coherently connected. This alignment fosters transparency, fairness, and meaningful learning.

Beyond aligning instructional components, assessment itself plays multiple critical roles in the higher education context. It not only provides evidence of student learning but also drives instructional improvement and supports institutional accountability. The figure below summarizes the core reasons why assessment is a foundational element in effective teaching and learning.

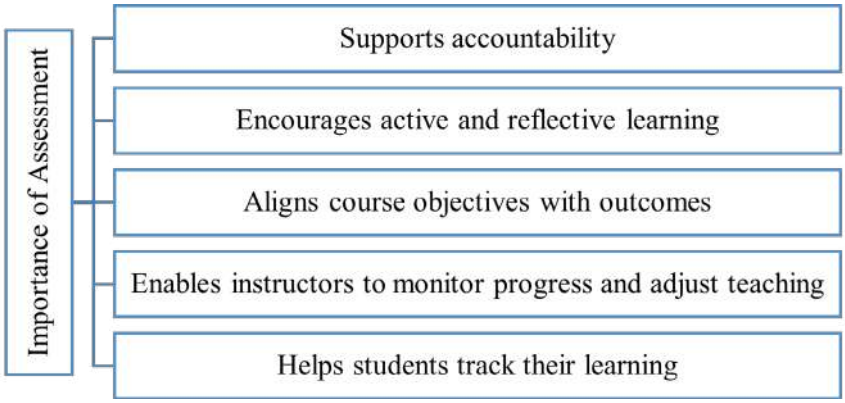


Figure 2. The Importance of Assessment

Building on the foundational role of assessment, it is essential to understand that how we assess students significantly shapes their learning experiences. Different types of assessment methods—ranging from traditional testing formats to more authentic, alternative approaches—serve different purposes and engage different cognitive skills. The choice of method should be informed by the learning outcomes, the nature of the subject matter, and the desired level of student engagement. The next section outlines and compares the most commonly used traditional and alternative assessment tools in higher education.

TYPES OF ASSESSMENT TOOLS

A variety of tools are used to assess learners' knowledge, skills, and attitudes across different educational settings. Selecting the right tool depends on the learning objectives, the nature of the task, and the level of cognitive engagement required. Below is a list of widely used assessment tools along with concise descriptions of their purposes and considerations for effective use.

Selected-Response Exams (e.g., Multiple Choice, True/False): These formats present students with predetermined options and are useful for assessing factual knowledge or comprehension efficiently (mostly lower-order thinking skills). Although easy to score, well-designed items are essential to minimize guessing and ensure validity.

Constructed-Response Exams (e.g., Essay questions): These are open-ended written questions that require students to formulate their own answers. They are ideal for assessing reasoning, explanation, and argumentation skills (mostly higher-order thinking skills). Clear prompts and structured scoring criteria are necessary to ensure consistency in evaluation.

Oral Exams: This tool involves posing questions to students verbally and asking them to respond in real-time. It allows for assessment of communication, fluency, and conceptual clarity. However, it may cause anxiety for some learners and requires careful planning to ensure fairness.

Presentations: Learners communicate their understanding through oral or visual presentations. These tasks assess content knowledge, organization, and verbal expression. To reduce performance anxiety, instructors should provide clear guidelines and a supportive atmosphere.

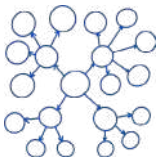
Projects: Projects require students to explore a problem or topic over an extended period and produce a final product, such as a report or prototype. They promote critical thinking, research skills, and self-management. Clear rubrics and expectations help guide both the process and evaluation.

Portfolios: A portfolio is a structured collection of student work accumulated over time. It provides a holistic view of learning progress, self-reflection, and achievement. Portfolios are especially useful for process-oriented or creative disciplines.

Observation: In this tool, the instructor observes students in real-time as they engage in learning activities, such as discussions, group work, problem solving, or practical tasks. The observer uses a checklist or structured form to document specific behaviors, strategies, or skills. Observation is especially useful for assessing participation, collaboration, or learning processes that may not be captured through written tasks.

Interview: Students engage in structured interviews or informal discussions to demonstrate their understanding. This tool supports interpersonal and interpretive skill development and should be guided by questions and scoring rubrics.

Reflective Writing (e.g., Reflection Reports, Journals): Students express their thoughts on learning experiences, personal growth, or conceptual insights. These tasks develop metacognitive awareness and are often used to supplement more performance-based tasks.



Concept Mapping: A visual tool for organizing knowledge, concept maps reveal how students connect and structure key ideas. They can be used as diagnostic or summative tools and are especially helpful in assessing systems thinking and conceptual clarity.,

Peer Assessment: Students assess the work of their peers using instructor-provided criteria. This encourages active engagement, accountability, and evaluative thinking. Clear instructions and structured tools (e.g., rubrics) are essential to guide students in providing constructive feedback.

Self-Assessment: In this process, students reflect on and evaluate their own performance. It supports self-regulated learning, personal responsibility, and growth mindset. Self-assessment tools may include rating forms, guiding questions, or learning logs.

Performance-Based Tasks: Students complete tasks that simulate real-life challenges or professional contexts. These tasks emphasize practical application and transferable skills. Evaluation should focus on both process and product using task-specific rubrics.

ITEM TYPES IN ASSESSMENT

Assessment tools consist of different types of items that serve to measure a variety of learning objectives—from basic knowledge recall to complex analysis or application. The selection of item types should reflect the cognitive level being assessed and the nature of the learning outcomes. This section introduces commonly used **objective** and **performance-based** item types along with their key features and original examples.

The following classification outlines two primary categories of assessment items frequently used in educational settings: **Objective Item Types** and **Performance-Based Item Types**. This structure supports instructors in choosing item formats that best reflect the nature and complexity of what is being assessed.

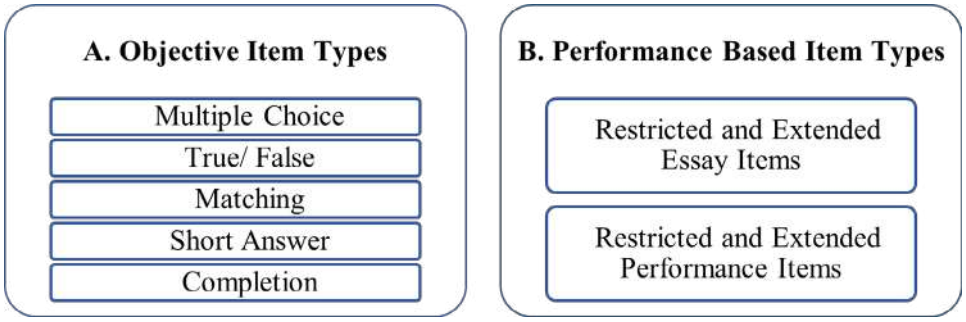


Figure 3. The Classification of Assessment Items

A. Objective Item Types

Objective item types are characterized by their highly structured nature, where students are expected to provide a specific, predetermined response. These items often require learners to supply a single word, a brief phrase, or to choose the correct option from a set of alternatives. Unlike essay items, objective items do not allow students to redefine the problem, organize their ideas, or express their answers in their own words. They are referred to as “objective” because there is a single correct or best answer, which makes scoring straightforward and consistent.

1. Multiple Choice

Multiple-choice questions (MCQs) consist of a clearly written question stem and a set of alternatives, including one correct answer and several distractors. Although they are challenging to construct, MCQs are widely used because they allow for efficient testing and scoring while assessing not only factual knowledge but also more complex cognitive skills such as application and analysis. Their structured nature offers practicality, especially in large-group settings. However, since students may rely on guessing, it is best to use them alongside other item types. When designing MCQs, clarity, consistency, and the use of meaningful distractors are essential.

Example

Which of the following best illustrates an application-level learning task in educational assessment?

A. Defining the concept of reliability in assessment

B. Listing different types of validity

2. True / False

These items require students to judge whether a statement is accurate. They are efficient for assessing factual knowledge, definitions, or relationships. While easy to write and grade, they are vulnerable to guessing. To enhance their validity, statements should be clear, singular in focus, and free of absolutes (e.g., "always," "never") unless universally true. They are best suited for lower-order cognitive skills such as recall and comprehension. To reduce guessing, students can be asked to correct false statements.

Example

Indicate whether each statement is True (T) or False (F). Write the correct version of the statements you believe are false.

T F Assessment and evaluation refer to the same process.

T F Formative assessment is used during the learning process to provide feedback.

3. Matching

Matching items are composed of two parallel columns: one containing a list of premises (such as definitions, descriptions, or questions), and the other containing a set of possible responses. Students are expected to associate each item in the first column with the correct option from the second. This item type is especially effective for assessing factual knowledge, conceptual understanding, and recognition of relationships. To reduce guessing, it is common practice to provide more response options than items to be matched. All elements should belong to the same conceptual category, and the language used should be clear and concise.

Example

Match each statement below with the appropriate educational concept.

1. A type of assessment conducted during the learning process to provide timely feedback and guide student improvement.	a. Validity
2. The degree to which an assessment tool measures what it is intended to measure.	b. Summative
3. A type of assessment used at the end of instruction to evaluate overall achievement.	c. Formative

4. Short Answer

Short answer items require students to generate a brief response—typically a word, phrase, or number—without the support of predetermined options. This format emphasizes recall over recognition, demanding a greater cognitive effort than multiple-choice or true/false questions, where students can rely on recognition strategies or guessing. As a result, short answer questions are particularly effective for assessing foundational knowledge and conceptual understanding. However, because they typically target recall, they are still considered lower-order cognitive tasks within Bloom's taxonomy. While well-crafted items may touch upon comprehension, they are generally not suitable for measuring higher-order thinking skills such as analysis or evaluation. These items are efficient to construct and versatile across subject areas. However, scoring should be guided

by a clearly defined answer key that accounts for possible correct variations in phrasing, spelling, or numerical form. They are best suited for evaluating factual recall, key terminology, basic understanding, or calculations. Ideal for formative assessments, quizzes, or quick knowledge checks.

Example
What type of assessment is used primarily to monitor student progress during instruction and guide teaching decisions?

5. Completion

Completion items, also known as fill-in-the-blank questions, present students with an incomplete sentence or statement that they must complete using a word, phrase, or number. These items measure recall rather than recognition, requiring learners to retrieve relevant knowledge from memory, which promotes deeper cognitive engagement. This format is particularly effective for assessing key terms, definitions, factual knowledge, formulas, or conceptual understanding. Completion items are relatively easy to construct and score, especially when there is a single, unambiguous correct response. To maintain clarity, the blank should appear toward the end of the sentence and should not disrupt the grammatical structure of the item.

Please ensure that the language used is clear and concise, the structure remains simple, and each item is designed to elicit a single correct or clearly preferred response—unless acceptable alternatives are thoughtfully included in the scoring guide.

Example
The type of validity that refers to how well an assessment aligns with the content it aims to measure is called _____ validity.

B. Performance-Based Item Types

Performance-based items require students to actively demonstrate their knowledge and skills by creating a product, performing a task, or presenting a structured response. Unlike objective items, these items require students to generate and justify responses using reasoning and creativity, often involving multiple valid solutions and authentic, real-world challenges. They are especially useful for assessing higher-order thinking skills such as analysis, synthesis, evaluation, and creativity.

1. Restricted and Extended Essay Items

Essay items require students to construct written responses to a prompt. They are commonly used to assess the ability to organize thoughts, develop coherent arguments, and apply critical thinking. Essay items can be categorized as restricted-response or extended-response, depending on how much structure is provided in the question.

Restricted Essay Questions: These items limit the scope of the response in terms of content, length, or format. They are useful when you want to assess focused understanding of a specific topic or skill within a controlled framework.

Example
Briefly describe two advantages of using rubrics in student assessment. Your answer should not exceed 100 words.

Extended Essay Questions: These items offer students greater freedom in how they organize and express their ideas. Extended responses are ideal for assessing students' ability to synthesize information, build arguments, and apply concepts to complex issues.

Example
Discuss the role of validity and reliability in the development of assessment tools. How might the lack of either affect the interpretation of student results?

2. Restricted and Extended Performance Items

Performance items require students to complete an activity, produce a product, or engage in a process that demonstrates their learning. These tasks mimic real-world applications and are evaluated using predefined criteria, such as rubrics. Similar to essay questions, they can also be restricted or extended in nature.

Restricted Performance Tasks: These tasks are well-defined and typically involve a specific set of steps or expected outputs. The criteria for performance are clearly delineated.

Example

Instructions: Read the statement below and respond briefly to the following prompts.

Statement: "Rubrics provide a more transparent and consistent way to evaluate student performance compared to holistic judgments."

(A) Indicate whether you agree or disagree with the statement above.

(B) Briefly explain two reasons to support your position (maximum 100 words).

Extended Performance Tasks: Extended tasks allow students to explore content more freely and often span a longer period. They integrate multiple skills and encourage creativity, problem-solving, and self-direction.

Example

Design and administer a short classroom assessment activity (e.g., quiz, observation form, rubric, or peer assessment form) for a selected topic of your choice. After implementing it, write a short reflection addressing:

a. Why you chose that assessment method?

b. How well it measured the intended learning outcome?

FROM DESIGN TO EVALUATION: KEY STAGES IN IMPLEMENTING EFFECTIVE ASSESSMENTS

Identifying and designing appropriate item types is only one component of effective assessment. To ensure fair, valid, and meaningful evaluation of student learning, instructors must also engage with the broader assessment process—encompassing planning, administration, scoring, and feedback across a range of assessment formats.

This section goes beyond the construction of individual test items to outline practical steps for implementing and evaluating diverse assessment tools, including written exams, performance tasks, portfolios, and projects. It provides guidance on preparing well-structured assessments, fostering supportive assessment environments, applying consistent and transparent grading criteria, and offering timely, constructive feedback. These practices are essential for promoting student learning, ensuring equity, and maintaining academic integrity in higher education contexts.

1. Clarifying the Purpose of the Assessment: Before designing any assessment activity—whether it is a test, assignment, performance task, or project—it is essential to clearly define its purpose. Understanding why the assessment is being conducted informs key decisions about its format, content, timing, and evaluation criteria. A well-defined purpose ensures that the assessment aligns with instructional goals, supports meaningful student learning, and provides actionable information for both teaching and learning improvement. Clearly defined purposes help determine what to assess, how to assess it, and which tools and item types are most appropriate.

2. Developing a Table of Specifications: A Table of Specifications is a two-dimensional planning tool that ensures alignment between learning outcomes, instructional content, and assessment tasks. It supports content validity by helping instructors:

- List intended learning outcomes.
- Identify key content areas.
- Map outcomes to content in a matrix format.
- Allocate weight or item numbers based on emphasis and instructional time.

This structure helps balance cognitive levels (e.g., knowledge, comprehension, application) across content areas and tasks.

3. Selecting Appropriate Assessment Formats and Item Types: Choosing the right format for an assessment is critical to ensuring that it effectively measures the intended learning outcomes. The format should be aligned with the type and depth of knowledge or skill being assessed, whether it involves basic recall, conceptual understanding, critical thinking, or applied performance.

Educators should consider a variety of assessment approaches—including written responses, practical tasks, projects, portfolios, or presentations—depending on the nature of the learning goals. In addition to pedagogical alignment, practical considerations such as the number of students, available time for scoring, and instructional context should also guide the choice of assessment method. A well-matched format enhances the validity, fairness, and usefulness of assessment results.

4. Constructing High-Quality Items or Tasks: Whether creating a multiple-choice item or designing a rubric-scored assignment, assessment tasks should be:

- Clearly worded, age-appropriate, and free from ambiguity.
- Aligned with intended learning outcomes and assessment goals.
- Designed to elicit a single, well-defined response (unless open-ended format is used with a scoring guide).
- Screened for unintended clues, bias, or irrelevant difficulty.

Creating a larger item pool than necessary allows for refinement and reuse over time.

5. Reviewing and Refining Items and Tasks: All assessment items or tasks should be critically reviewed for:

- Clarity of instructions and prompts
- Alignment with learning goals
- Appropriate cognitive challenge
- Cultural fairness and accessibility
- Accuracy of scoring criteria or answer keys

Peer review by another instructor can help improve objectivity and item quality.

6. Pilot Testing (If Feasible): Conducting a small-scale trial with representative learners—before full implementation—can highlight problems related to:

- Wording and clarity
- Item difficulty or ambiguity
- Scoring inconsistencies
- Test length or timing

Pilot data may also support item analysis (e.g., item discrimination, reliability) for high-stakes assessments.

7. Administering the Assessment: Effective administration requires both practical preparation and thoughtful communication:

- Prepare the physical or digital environment (clean space, functioning technology, necessary materials).
- Communicate instructions clearly: Assessment format, time limits, and expectations.
- Reduce anxiety by fostering a supportive atmosphere.
- Use consistent timing cues and procedures to promote fairness.

This applies to in-class exams, take-home assignments, online quizzes, and group presentations alike.

8. Scoring and Providing Feedback: Scoring must be transparent, consistent, and aligned with the learning objectives. To enhance reliability and student growth:

- Use clear answer keys or rubrics—ideally shared with students in advance.
- Double-score open-ended tasks when possible to ensure inter-rater reliability.
- Provide meaningful feedback that reinforces learning or clarifies errors.
- Reflect on student performance to guide future instruction or curriculum adjustments.

Whether numerical scores or qualitative comments are used, feedback should support continued learning and engagement.

AFTER THE QUESTION: GUIDELINES FOR FAIR AND EFFECTIVE EVALUATION

Meaningful assessment is not solely defined by how well a question is written—it begins much earlier, with a clear understanding of learning objectives and continues long after students submit their work. A key component of this process is the fair and thoughtful interpretation of student responses, which ensures that assessments truly reflect what students know and can do.

This section offers practical guidance to instructors on how to evaluate a variety of assessment tools used in higher education. From objective tests to essays, projects, and written assignments, each type calls for specific scoring strategies that are transparent, consistent, and aligned with course goals. By applying these principles, instructors can provide constructive evaluations that support student learning and uphold academic standards.

1. Evaluation of Objective Assessment Tools *(e.g., multiple-choice, true/false, matching, short answer, completion exams)*

Objective assessments are commonly used in higher education to evaluate foundational knowledge and conceptual understanding. However, effective evaluation extends beyond simply scoring correct versus incorrect responses. Instructors must take deliberate steps to ensure that scoring is consistent, equitable, and aligned with learning objectives.

Once the test has been administered, instructors should apply a predetermined scoring scheme—typically assigning 1 point for each correct response and 0

for incorrect ones. However, for items that require brief constructed responses (e.g., completion or short answer), clear scoring criteria should be established to account for acceptable variations in wording or format.

For large-enrollment courses, digital tools such as optical mark recognition systems can reduce clerical errors and enhance efficiency. Additionally, item-level analysis—including the calculation of item difficulty and discrimination indices—can provide valuable insights into the quality of test items and inform future revisions. Reviewing these metrics helps instructors detect poorly functioning items and adjust scoring if necessary.

When students request a review of their scores, instructors should adopt a transparent and respectful approach, rechecking calculations and providing clear explanations. In cases where patterns of misunderstanding are identified, targeted feedback—such as brief written explanations or group-level discussions—can help clarify concepts and reinforce learning.

Ultimately, objective assessments must be treated as part of a larger feedback loop rather than isolated scoring events. Thoughtful interpretation of results contributes not only to fair grading practices but also to instructional improvement.

2. Evaluation of Essay Type Assessment Tools *(e.g. Restricted-response vs. extended-response exams)*

Essay items present both opportunities and challenges when it comes to evaluation. Their open-ended nature allows students to demonstrate depth of understanding, but this also necessitates a carefully structured and consistent scoring process to ensure fairness.

To maintain reliability, instructors should begin by designing a detailed scoring rubric prior to reviewing any responses. Whether employing analytic scoring, where responses are dissected into component criteria, or holistic scoring, which evaluates the response as a unified whole, the scoring method must align with the learning objectives and be consistently applied across students.

Before initiating full-scale scoring, instructors are encouraged to review the same question across all students' papers before moving on to the next question, rather than grading entire responses one by one. This question-by-question approach facilitates greater consistency and calibration, as the evaluator becomes more attuned to the range of responses for each prompt. Additionally, grading should be done without viewing student names, to reduce the potential for bias and uphold anonymity. Revisiting a subset of previously scored responses intermittently can also help maintain scoring alignment and mitigate the effects of fatigue or shifting expectations over time.

Providing formative feedback—through brief margin notes or summary statements—can enhance the educational value of essay assessments. These comments should focus on guiding improvement, such as offering insight into argumentative structure, conceptual depth, or use of evidence, rather than merely justifying scores.

Finally, instructors should be mindful of their own cognitive load and schedule grading sessions accordingly. Taking breaks between sessions, and revisiting a few earlier papers before resuming, helps maintain scoring objectivity over time.

Using Rubrics for Essay Scoring

Rubrics serve as a valuable tool in essay evaluation by offering explicit scoring criteria that guide both instructors and students. When crafted thoughtfully, rubrics promote consistency, transparency, and alignment with learning outcomes. A well-designed essay rubric typically includes dimensions such as content knowledge, organization, clarity, use of evidence, and language mechanics. Each dimension is described across multiple performance levels (e.g., exemplary, proficient, developing, beginning), enabling nuanced assessment.

Rubrics help identify common patterns in student performance and support a fair and transparent grading process. Sharing rubrics in advance gives students a clearer understanding of expectations and can enhance both motivation and self-regulation. Additionally, rubrics serve as instructional tools by making assessment criteria explicit and accessible. When criteria are co-constructed with students, they become more meaningful and learner-centered, which fosters ownership of the learning process. The language used in rubrics should be clear, concise, and free from subjective or evaluative phrasing to ensure consistency and interpretability. Providing both written and oral explanations of the rubric criteria can help students internalize what is expected of them.

To be most effective, rubrics should be distributed before the assignment or task begins so that students can prepare accordingly. Knowing in advance how their performance will be evaluated enhances transparency and can boost intrinsic motivation. Finally, rubrics also support post-assessment conversations by offering a structured reference point when students request feedback or clarification about their grades. In this way, rubrics are not only scoring tools, but also serve as vehicles for feedback, reflection, and self-assessment.

Example

Analytic Rubric for an Essay Question: Describe how different types of classroom assessments (e.g., quizzes, projects, exams) can be used to support student learning in your discipline with examples.

Criterion	Excellent (4)	Good (3)	Fair (2)	Poor (1)	Total
Relevance and Alignment	Clearly explains how assessment types align with learning goals and instructional context	Generally explains relevance, with minor clarity issues	Limited discussion with underdeveloped connections	Lacks relevance or conceptual alignment	
Structure and Clarity	Well-organized and logically structured; smooth transitions between ideas	Generally clear with minor structural inconsistencies	Lacks clear organization; ideas difficult to follow	Disorganized or incoherent presentation	
Use of Examples	Provides relevant, discipline-specific examples to support ideas	Examples included but not always clearly connected	Limited or vague examples; insufficient support	No or unrelated examples provided	
Language and Mechanics	Clear academic language, grammatically correct, with appropriate terminology	Minor errors that do not hinder comprehension	Noticeable errors affecting clarity	Frequent errors that disrupt understanding	

3. Evaluation of Performance-Based Tasks *(e.g., presentations, projects, portfolios)*

Performance-based assessments provide a dynamic way to evaluate students' abilities to apply knowledge, synthesize information, and demonstrate creativity and initiative in authentic contexts. These tasks go beyond rote learning by requiring students to engage in real-world or simulated challenges such as designing a project, delivering a presentation, or compiling a portfolio.

Effective evaluation of such assessments begins with clearly defined criteria aligned with instructional goals and communicated to students at the outset. Rubrics tailored to the specific task help clarify expectations and reduce subjectivity in scoring. They should describe performance across multiple dimensions such as content accuracy, originality, organization, collaboration, and overall execution.

Instructors are encouraged to view performance assessment as an ongoing process, not a single end-product. This means offering formative feedback at key stages of the project, checking progress, and identifying areas where students may benefit from clarification or support. While maintaining academic standards, instructors can provide guidance during the process, especially when students face challenges in structuring or implementing their ideas.

Before assigning final grades, it is useful to scan all submitted projects to develop a general impression of quality levels and recurring patterns. This pre-evaluation phase allows instructors to refine their application of the rubric and ensure consistency. Taking brief notes during this initial review can aid in delivering meaningful, individualized feedback later on.

Performance-based tasks should also be assessed within a broader understanding of fairness and transparency. Instructors must be explicit in their syllabus about how such tasks will be weighted, how frequently they will occur, and what standards will guide their evaluation. This helps manage students' expectations and promotes trust in the assessment process.

Finally, incorporating opportunities for student self-assessment or peer evaluation can enrich the learning experience and reinforce metacognitive skills. Structured reflection activities or group debriefings after task completion can also provide valuable insights into students' thought processes, enhancing the formative value of the assessment.

4. Evaluation of Written Assignments *(e.g., research papers, short written tasks, critical reflections)*

Written assignments enable students to demonstrate synthesis, argumentation, and academic writing proficiency. Evaluating such tasks involves examining not only the content and argument quality but also structure, referencing, and clarity of expression.

Transparent evaluation begins with a well-articulated scoring rubric or grading guide shared with students in advance. Instructors should consider conducting a preliminary scan of submissions to establish scoring benchmarks and calibrate expectations. Commentary should differentiate between content-related feedback and mechanical issues (e.g., grammar, formatting). Anonymous marking can be employed to reduce bias, particularly in large classes or high-stakes assignments.

Equally important is a principled commitment to fairness and academic integrity throughout the evaluation process. Students often view the grading of written assignments as one of the most consequential aspects of their academic experience. Thus, assessments must be converted into grades in a manner that is both equitable and transparent. Instructors must be aware of the expectations placed on them—by both students and institutional standards—to ensure that their judgments are informed, well-reasoned, and pedagogically sound.

Before beginning to grade, instructors should revisit the learning objectives and outcomes that underpin the assignment. Evaluators are encouraged to develop varied assessment approaches that reflect not only students' factual knowledge but also their engagement, synthesis capabilities, and overall academic performance. Course syllabi should clearly communicate the number, type, weight, and deadlines of written assignments, and these expectations should be revisited and clarified throughout the term when needed.

By embracing a structured, reflective, and student-centered approach to written assessment, instructors not only uphold academic standards but also foster an environment of trust, clarity, and meaningful intellectual development.

5. Evaluation of Attendance and Participation

Deciding whether to include attendance and in-class participation as part of students' final grades is at the instructor's discretion. If participation is to be assessed, clear expectations must be communicated in the course syllabus from the beginning of the term. This includes specifying the conditions under which participation will be rewarded or penalized, as well as how frequently attendance must occur to qualify for any associated credit (e.g., bonus points or grade adjustments).

Transparency is critical for fairness. Students should understand exactly how their presence and engagement contribute to their overall evaluation, enabling them to make informed decisions about their participation. Moreover, if attendance influences assessment, instructors should implement a consistent and documented method for tracking and recording student presence (e.g., sign-in sheets, online attendance tools).

Participation evaluation may also go beyond mere physical presence and consider active engagement, such as contributing to discussions, asking questions, or collaborating in group activities. In such cases, the use of a simple rubric or descriptive criteria can help standardize judgments and avoid ambiguity.

Example Course Assessment Breakdown

Having explored how to evaluate various assessment tools—including the use of rubrics, feedback strategies, and principles of fairness—it's also helpful to consider how these components come together in the overall grading structure of a course. Transparent communication of the weight and role of each assessment tool reinforces student trust and motivation, while also helping instructors align grading with intended learning outcomes.

The following table presents a sample distribution of assessment components within a university course. It integrates a balance of objective, written, and performance-based evaluation methods:

Example

Course Requirements	Weight
Participation (Activities)	15%
Midterm	35%
Assignment: Research Critique	10%
Research Proposal and presentation	40%
TOTAL	**100 %**

This example underscores the importance of a diversified assessment approach and emphasizes the value of aligning course components with broader instructional goals. When shared in the syllabus and consistently reinforced throughout the term, such distributions guide student expectations and promote a more meaningful, well-supported learning experience.

PROVIDING FEEDBACK TO SUPPORT STUDENT LEARNING

Effective feedback is an essential component of the teaching and learning process. Beyond simply assigning a grade, feedback guides students toward deeper understanding, encourages reflection, and helps them identify their strengths and areas for growth. Constructive feedback—whether written, oral, formal, or informal—has the power to reinforce motivation and clarify expectations. Timely, clear, and targeted feedback is especially important, as it supports the development of self-regulated learners and contributes to overall academic success. It is therefore vital for instructors to provide feedback not just at the end of a task, but throughout the learning journey, using a variety of strategies suited to different contexts.

Key Strategies for Giving Effective Feedback

1. Be timely and consistent: Provide feedback soon after the assessment or learning activity. Regular, ongoing feedback helps students track their progress and make necessary adjustments in time.

2. Clarify what is being evaluated: Always link your feedback to specific learning outcomes, criteria, or rubric dimensions. This helps students understand the purpose and focus of your comments.

3. Balance strengths and areas for improvement: Highlight what the student did well before addressing areas needing development. A balanced approach builds confidence while guiding improvement.

4. Be specific and actionable: Vague comments like "good job" or "needs work" are not helpful. Instead, provide concrete suggestions such as "expand your explanation with a supporting example" or "clarify your thesis in the introduction."

5. Use a constructive and respectful tone: Feedback should encourage learning, not discourage effort. Avoid overly negative or judgmental language; instead, frame critiques as opportunities for growth.

6. Adapt your method to the context: Feedback can be written (e.g., margin notes, summary comments), oral (e.g., one-on-one meetings), or interactive (e.g., group discussions, peer reviews). Choose the method that fits the task and group size.

7. Engage students in the feedback process: Invite students to reflect on the feedback they receive and to ask questions.

8. Provide whole-class feedback when patterns emerge: When many students make the same mistake, address it collectively. This saves time and clarifies common misunderstandings.

9. Test your feedback style in small steps: Try different approaches in small groups to see what resonates best. This helps refine your communication style and improve clarity.

10. Encourage dialogue and self-assessment: Foster an environment where feedback is a two-way process. Ask students to assess their own work or provide input on their learning needs.

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TEDU Teaching and Learning Handbook

CHAPTER 5

Enhancing Student Motivation & Faculty-Student Interaction

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CHAPTER 5

Enhancing Student Motivation & Faculty-Student Interaction

Introduction

Student motivation and faculty-student interaction are cornerstones of effective higher education teaching. Motivation drives student engagement, persistence, and learning outcomes, while quality interaction fosters trust, belonging, and academic success. In a landscape marked by growing diversity, technological change, and evolving student expectations, faculty must be intentional in cultivating environments that motivate learners and support authentic connection.

This section of the handbook provides strategies, principles, and practical examples to support faculty in:

- Understanding the key components of student motivation
- Creating motivating learning environments
- Building meaningful faculty-student relationships
- Encouraging communication inside and outside the classroom

Part 1: Enhancing Student Motivation

1.1. What is Student Motivation?

Student motivation is a fundamental concept in educational psychology that refers to the internal and external factors that initiate, guide, and sustain students' engagement in learning activities. It significantly impacts how students perceive academic tasks, how persistently they work toward goals, and how resilient they are when facing difficulties. In essence, motivation determines not only whether students learn, but also how effectively they learn.

Motivation affects various aspects of the learning process, including attention, effort, strategy use, and academic performance. When students are motivated, they are more likely to attend classes, participate actively, explore topics deeply, and take ownership of their learning experiences.

Motivation is commonly categorized into two primary types:

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1. Intrinsic Motivation

Intrinsic motivation refers to engaging in a learning activity out of genuine interest, curiosity, or personal satisfaction. Students who are intrinsically motivated participate in tasks because they find them inherently rewarding or enjoyable, rather than for some separable consequence. For example, a student might study science not to earn a high grade, but because they are fascinated by how the natural world works.

Intrinsic motivation is often associated with deeper learning, creativity, and long-term academic success. It fosters self-directed learning and encourages students to pursue knowledge beyond the minimum requirements.

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2. Extrinsic Motivation

Extrinsic motivation, on the other hand, involves engaging in a task to achieve a specific outcome or avoid a negative one. These outcomes may include receiving grades, gaining praise, earning rewards, or meeting external expectations such as career advancement or parental approval.

While extrinsic motivation can be effective in promoting academic engagement—especially in the short term—it may not always lead to deep or lasting learning unless it is aligned with students' personal goals and values. Ideally, educators aim to gradually help students internalize external motivators, turning them into self-driven goals.

1.2. Creating Motivating Learning Environments

It is essential for instructors to establish a meaningful connection with their students. Such a connection facilitates more effective coping with daily learning challenges and enables both the transmission of knowledge to the student and the acquisition of insight from the student. Rather than reinforcing negative patterns, it is important to cultivate a positive classroom atmosphere through encouragement, efforts to understand, and active listening. This, in turn, enhances the learner's ability to engage in active and high-quality learning.

The following practices are recommended to foster a positive learning environment:

- Design settings that allow instructors to get to know their students beyond the course plan, even before the first class session, and determine whether there are any international students in the group.
- Review the class list prior to the first session and try to familiarize yourself with students' names and photographs.
- Prepare a brief introductory talk about yourself, including your area of expertise, educational background, and relevant course-related information.
- Visit the classroom or laboratory in which you will be teaching to identify any potential deficiencies and to gain greater familiarity with the teaching environment.
- Clearly communicate your expectations and the classroom rules you would like students to follow in order to establish a respectful and productive atmosphere.
- Greet students sincerely and inquire about their well-being during class breaks or office hours to help prevent potential communication issues and to support a more inclusive classroom dynamic.
- Incorporate icebreaker activities that promote student interaction and help facilitate a sense of community within the class.
- If there are students with disabilities in your classroom who require support, you may refer them to TEDU Without Barriers (Engelsiz TEDÜ) to ensure they receive appropriate accommodations.
- Avoid engaging exclusively or repeatedly with only one or a few students during class sessions. Instead, strive to create an inclusive environment by planning activities that actively involve the entire class whenever possible.

Occasionally incorporating humor into your teaching can help students feel more at ease and foster a positive classroom atmosphere. However, it is essential to ensure that such humor is respectful and does not offend or marginalize anyone.

1.3. Enhancing Student Motivation Through Evidence-Based Pedagogical Practices

1.3.1. Set High, Clear, and Achievable Expectations: To effectively foster student motivation, it is imperative to **communicate learning objectives early and clearly,** thereby establishing transparent expectations and providing students with a purposeful framework for their learning. Equally important is the practice of **providing detailed rubrics and explicit grading criteria**, which not only promote fairness and consistency in evaluation but also guide students in understanding the standards by which their work will be assessed. Furthermore, ensuring that **assessments are closely aligned with course goals** reinforces the relevance of course activities, helping students make meaningful connections between instructional content and evaluative measures. Together, these strategies contribute to a more structured and motivating learning environment.

Clearly communicate to your students that you respect and value them.

1.3.2. Offer Choice and Autonomy: Promoting student autonomy is a critical factor in sustaining motivation and engagement in higher education. One effective approach is to **allow students to choose project topics or paper formats**, which can increase personal relevance and investment in their work. When feasible, **using flexible deadlines** can also support students' ability to manage their time and reduce anxiety, particularly in courses that emphasize creativity or independent research. Additionally, faculty can **encourage independent learning and inquiry** by designing assignments that require critical thinking, exploration, and self-direction. These strategies not only foster a sense of ownership over the learning process but also help develop skills essential for lifelong learning.

Actively engage in attentive listening and demonstrate a genuine effort to understand your students. Acknowledge and thoughtfully consider their concerns and suggestions related to the course.

1.3.3. Foster a Growth Mindset: To cultivate a growth-oriented learning environment, it is important to **emphasize learning over performance**, shifting the focus from grades to the development of understanding and skills. Faculty can further support this mindset by **normalizing mistakes as an essential part of the learning process**, helping students view challenges and setbacks as opportunities for growth rather than indicators of failure. Additionally, **providing feedback that focuses on effort, strategy, and improvement** reinforces the value of persistence and reflective practice. These approaches not only enhance motivation but also contribute to the development of resilient, self-regulated learners.

1.4. Making Learning Meaningful: Here are some tips to make learning more meaningful for the students:

- **Connect to Real-World Contexts**
  - Use case studies, simulations, or current events
  - Invite guest speakers from relevant industries
  - Design projects that solve real problems

Foster an environment that supports independent and diverse perspectives, and demonstrate openness to constructive feedback and critical viewpoints.

- **Highlight Relevance and Value**
  - Explicitly connect content to students' future careers
  - Share your own enthusiasm and experiences with the material
  - Ask students to reflect on how the content matters to them

If a problem arises involving a student during class, indicate that the issue will be addressed after the session and continue with your teaching. Make sure to follow up by speaking with the student individually after class.

- **Use Active Learning Strategies**
- Incorporate discussion, debate, and peer teaching
- Use collaborative tools like group work or problem-solving exercises
- Leverage technologies like polling tools, quizzes, or learning apps

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Part 2: Enhancing Faculty-Student Interaction

2.1. Why Faculty-Student Interaction Matters

Research consistently shows that frequent, meaningful interactions between faculty and students are linked to:

- Higher academic achievement
- Stronger motivation
- Increased retention and graduation rates
- Greater sense of belonging

2.2. Encouraging Communication in Class

To enhance student motivation and strengthen faculty-student interaction, instructors can implement a range of inclusive and responsive teaching strategies.

✓ **Facilitating discussion through the use of open-ended questions**, sufficient wait time, and interactive techniques such as think-pair-share or small group discussions encourages active participation and deeper engagement. Acknowledging and building on student responses during these discussions further validates their contributions and fosters a supportive learning environment.

✓ In addition, **soliciting feedback from students**—through mid-semester evaluation, informal check-ins, or anonymous reflections on teaching methods—can provide valuable insights into the learning experience. When faculty make thoughtful adjustments based on this input and communicate those changes transparently, students are more likely to feel heard and invested in the course.

✓ Equally important is **responding promptly and thoughtfully to student contributions:** this includes acknowledging input during class, following up on unanswered questions, and providing timely, constructive feedback on assignments. Collectively, these practices help create a more dynamic, inclusive, and motivating academic environment.

Necessary Points to Remember:

► **First Impressions Matter:** Building positive instructor-student relationships is a key component of fostering motivation and a supportive classroom environment. A simple yet powerful strategy is to **learn and use students' names early in the term**, which helps establish a sense of recognition and belonging. Instructors can further strengthen rapport by **sharing their own background, interests, and teaching philosophy**, making themselves more approachable and humanizing the learning experience. Moreover, consistently **demonstrating warmth and enthusiasm in class** can create an engaging atmosphere that encourages participation and signals to students that their presence and contributions are valued. These relational practices contribute significantly to student motivation by promoting trust, connection, and a sense of community.

► **Psychological Safety Needed:** Creating an inclusive and psychologically safe learning environment is fundamental to supporting student motivation and engagement. Faculty should **foster a climate where students feel safe to speak, ask questions, and be wrong,** ensuring that classroom interactions encourage participation rather than fear of judgment. This involves **responding supportively to incorrect answers or expressions of confusion**, framing them as valuable moments for learning rather than failure. Additionally, **using inclusive language and equitable teaching practices** signals respect for diverse identities and experiences, contributing to a sense of belonging for all students. Proactive outreach, such as **e-mailing students who have been absent for an extended period,** can further demonstrate care and support, potentially re-engaging students who may feel disconnected or overwhelmed. Together, these practices help cultivate a learning environment in which all students feel respected, included, and motivated to succeed.

2.3. Increasing Out-of-Class Interaction

Out-of-class communication plays a vital role in reinforcing in-class learning and fostering meaningful faculty-student relationships. It provides students with opportunities to seek clarification, receive guidance, and engage more personally with course material beyond the constraints of scheduled class time. However, its effectiveness is closely tied to the quality of in-class communication. When students feel heard, respected, and supported during class, they are more likely to reach out and engage outside of it. Thus, strong in-class communication lays the foundation for productive out-of-class interactions, making both essential components of a supportive and motivating learning environment.

- Make office hours welcoming and accessible
- Use technology to enhance communication; for example, send periodic announcements or check-ins
- Engage beyond the classroom; for example, attend or support student events when possible or recommend readings, events, or opportunities related to students' interests

2.4. Increasing Student-Student Interaction

- **Encourage respectful interactions among students, and model this behavior in your own actions:** Set a positive example by demonstrating respectful communication, and emphasize the importance of treating one another with kindness and consideration.
- **Facilitate activities that help students get to know each other and build effective communication:** Incorporate group work and in-class collaborative exercises to foster connection, mutual understanding, and teamwork among students.
- **Organize regular meetings with your students to discuss their academic progress and gather feedback:** These meetings, whether held in or outside the classroom, can provide a valuable platform for students to express their thoughts, concerns, and ideas about the learning process.

Part 3: Inclusive Motivation and Communication Practices

Recognize Student Diversity

Students come from varied cultural, linguistic, educational, and socioeconomic backgrounds. Motivation strategies and communication approaches must be responsive to this diversity.

► Culturally Responsive Motivation involves recognizing and valuing the diverse backgrounds, experiences, and identities students bring to the classroom. By inviting students to share their own perspectives and experiences, faculty can foster a learning environment where all voices are heard. Being open to different ways of knowing and expressing understanding allows students to demonstrate their learning in meaningful and authentic ways. Additionally, validating multiple forms of participation and engagement helps ensure that every student feels seen, respected, and motivated to contribute.

► Language and Communication Style involves avoiding complex languages, using multiple formats to explain key concepts (visual, verbal, written) and encouraging questions and clarify frequently

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Part 4: Addressing Motivation Challenges

4.1. Recognizing Signs of Low Motivation: There are some signs of low motivation. For example;

- Poor attendance or participation
- Missed deadlines or low-quality work
- Lack of engagement or affect (e.g., disinterest)
- Expressed frustration or hopelessness
- Failure to meet responsibilities and offering excuses
- Talking during class, asking disruptive questions, or causing distractions
- Inappropriate use of phones/laptops and other devices
- Defiance or mocking behavior

4.2. Key Strategies of Responding to Disruptive Student Behavior

1. Plan and prepare your course thoroughly to create a structured and engaging learning experience.

2. Clearly communicate your rules and expectations at the beginning of the term to set a strong foundation.

3. Get to know your students and understand their developmental and personal characteristics to better support their learning.

> Rule of Thumb: Never engage in an argument with your students during class under any circumstances.

4. Foster a positive classroom environment through effective communication and interaction. For more, refer to the Enhancing Faculty-Student Interaction section and use this handbook as a whole.

5. Stay attentive and responsive during lessons—observe both verbal and non-verbal cues, seek feedback regularly, and be mindful that misbehavior may have deeper causes (e.g., personal or academic challenges).

6. Start with subtle, non-verbal cues such as making eye contact or moving closer to the student while continuing the lesson. This often helps redirect behavior without disrupting the class.

7. Use indirect verbal interventions if the behavior persists. Include the student in examples, ask relevant questions, or check if they need help—always keeping the tone supportive.

8. If needed, address the behavior calmly and privately. Briefly and respectfully explain that the behavior is disruptive, but avoid direct confrontation during class.

9. Follow up individually and listen actively. Give the student a chance to explain their perspective without judgment. Avoid assumptions—behavior may stem from anxiety, personal challenges, or skill gaps.

10. Recognize when to refer for additional support. If the issue continues, connect the student with campus resources like Student Development and Psychological Counseling Center or Center for Teaching and Learning.

Part 5: Motivational Teaching Strategies

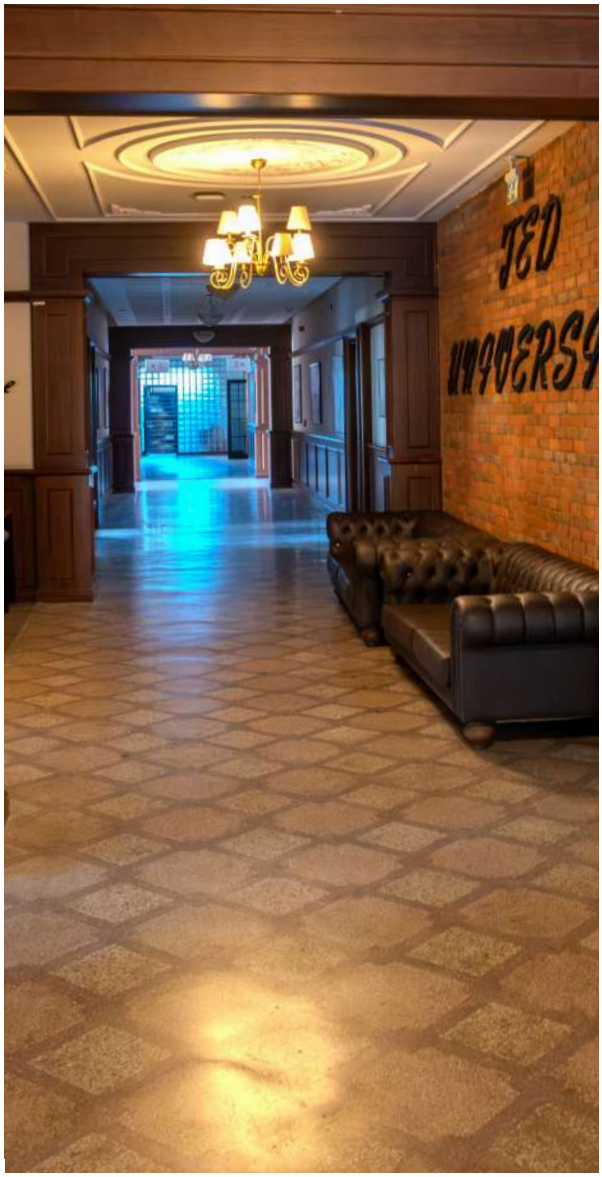
There are some motivational teaching strategies which you can use in and outside class. Below, you can find some strategies alongside the examples:

Strategy	Example
Provide choice	Let students select topics or partners
Build relevance	Link concepts to real-world applications
Use active learning	Incorporate group problem-solving
Give effective feedback	Focus on strengths and next steps
Recognize effort	Acknowledge improvement, not just outcomes
Set goals	Use learning contracts or milestone planning

Note to Remember:

From time to time, you may ask yourself some self-prompting questions below. These questions help you be active and an observer of the teaching practices.

- How do I currently communicate with my students? Is it effective?
- In what ways do I show students that I care about their learning?
- Are there students I interact with less frequently? Why?
- How do I respond to student disengagement?
- How can I better incorporate student feedback into my teaching?



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