

MET – 30 steps to Effective Teaching and Successful Learning

Planning the lesson (see Chap. 7)

1. Choice of curricular goals linked to prior learning; goals, standards, and objectives should be motivating and relate to students' lives.
2. Explicit connection to students' existing knowledge; prior knowing consists of subject matter as well as of world knowledge.
3. Possibly subdivision of the goal(s) in several objectives; in most cases students need this fragmentation in order to grasp new knowledge and skills.
4. Thorough planning of content presentation and practice; presentation and practice have to fit the special subject matter content as well as the students' needs and interests.
5. Elaboration of alternative forms of content presentation and practice; it is important to plan and elaborate alternative forms to be prepared for students' learning difficulties.

Starting the lesson (see Chap. 7)

6. Explanation of the goals, the learning intentions and the success criteria; students need to be informed in advance of what respective knowledge and skills they should learn and why, and how they can evaluate the success of their learning processes.
7. Display of the values connected to the particular knowledge and skills; depending on the age of the students, explanations are often less effective than examples.
8. Encouraging students with regards to their possibilities of meeting the goals; student learning outcomes depend to a large extent on their self-confidence.
9. Promotion of students' commitment through motivating hooks or other hints; teachers should dispose of a variety of inspiring examples and short narrations in order to increase students' engagement.

Presenting knowledge and skills (see Chap. 8)

10. Comprehensible explanations or demonstrations of learning content; explanations, modeling, and demonstrations have to be in accordance with students' learning possibilities.
11. Redundant explanations; various formulations of content knowledge and/or skills help students to grasp the learning content and store it in memory.
12. Illuminating, student-centered examples; examples should be easy to understand in order to attract the attention of the students.
13. Exemplification and demonstration of knowledge and skills through visual/audiovisual aids; as visual memory plays an important role in storing knowledge, a display of different means such as pictures, tables, and especially different digital media could possibly be incorporated.
14. Presentation of the steps leading to solution through worked examples; not only in mathematics but in (almost) all subject matters, worked examples show students what to do in order to reach goals and objectives.

Questions and Answers (see Chap. 8)

15. Assertive questioning; during the whole lesson, but especially when presenting new content, teachers have to check through adequate questioning if and what students have understood.

16. Attentive answering of students' questions; students' questions should never be ignored, as they show if and how students have conceived the learning content.

17. Positive attitude toward mistakes; students need to know that mistakes are welcome, as they offer further learning possibilities.

18. Questions regarding the presented knowledge and skills; these questions should be formulated in such a way that all students have an opportunity to take part in the lesson.

19. Repeated presentation of the learning content; if it is found that the students did not comprehend the learning content on the whole or in part, it has to be re-taught.

Guided Practice (see Chap. 9)

20. Graded activities for practice including short self-assessments; under the guidance of the teacher, all students are enabled through practice to improve and evaluate their understanding of the learning content.

21. Further worked examples with explanations of the single steps leading to the solution; in this context the worked examples are part of student practice (see no 14).

22. Decision on the social setting; by agreement with the students it is decided whether guided practice takes place in seatwork, in tandem, or in small groups.

23. Formative feedback; it is (most of the time) for the teacher to give feedback to single students in difficulty or asking for help.

24. Short explanations directed to individual students; the teacher should invite all students to seek help when their understanding of the new learning content is found to be insufficient during practice.

Independent Practice (see Chap. 9)

25. Thoroughly planned and elaborated activities that allow for deep learning and transfer; these activities are more complex and demanding, in order to further critical and creative thinking.

26. De-contextualization; the contexts in which the presented knowledge and the skills occur are varied so that students can transfer the learned content to relevant (new) situations.

27. Decision on the social setting; by agreement with the students it is decided whether independent practice takes place in seatwork/homework, in tandem, or in small groups (see Chap. 10)

28. Formative feedback; this time it should not predominantly be given by the teacher, but rather by peers (see Chap. 11).

29. Feedback through tests; besides grading, summative feedback possibly could take forms that lead to further learning.

Transition or Conclusion (see Chap. 9)

30. At the end of an important learning phase or at the end of the lesson, the teacher and the students summarize the learning processes so that the students can make sense of the passed learning experiences.