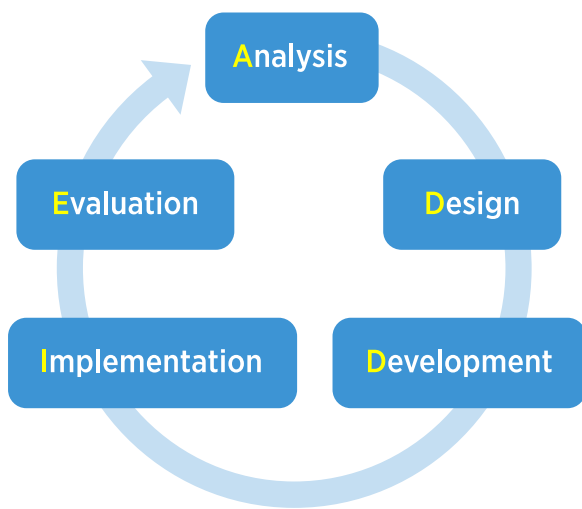# HOW TO

use the ADDIE Model for better instructional design?

ADDIE is an instructional design model to help teachers prepare and implement effective and meaningful instruction. ADDIE has been widely used in various educational contexts (both online and offline) since the 1970s. The five main components of ADDIE are Analysis, Design, Development, Implementation and Evaluation. Although the components are often presented in linear progression, it is important to bear in mind that these components are also inter-related and dynamic.

A. ANALYSE the instructional goals, target audience and required resources

The Analysis phase is a 'Goal-setting stage' where teachers focus on students' knowledge gaps and the aims of the course. Teachers may ask themselves questions from the following four dimensions:

Pedagogical Considerations

- What are the aims of this online exercise or this lecture?
- Why are we doing it?
- What are the desired learning outcomes in terms of knowledge, skills, attitudes, behavior etc.?
- What are the desirable impacts?

Learners Characteristics Considerations

- What is the typical background of the students? (e.g., past knowledge, experiences, age, interests, cultural background)
- What do students already know about the current lesson topic?

Instructional Strategies Considerations

- Should your course be online or face-to-face or a blend of both?
- Synchronous or Asynchronous?
- What are the existing instructional strategies employed for this type of course and audiences?
- Are these strategies adequate? What aspects need to be added, clarified and improved upon?

Learning Constraints

- What are the constraints with respect to resources, including technical, time, human resources, financial and support factors?

Tip: Students may take a self-assessment inventory at the beginning of the semester/course to help you better gauge their expectations and current knowledge level. Questions may include specific ones related to course knowledge (*e.g., What are the characteristics of Romanticism?*) and more general ones (*e.g., What do you expect to learn from this class?*)

END GOAL: *An analysis of the kind of learning required in the course*

D. DESIGN a course plan that aligns objectives and strategies with instructional goals

The design phase involves a systematic and specific plan for developing the instruction. In this phase, teachers must outline in detail how to achieve the course goals decided during the Analyse phase. The following three dimensions may be helpful:

Instructional:

- What instructional strategies best fulfil the learning objectives (e.g., group-work, presentation, project-based)?
- How much time is allocated for each activity?
- How to appeal to and maintain students' diverse learning interest?

Material and media:

- What materials (e.g., flip charts, hand-outs) and media (e.g., video, power point, VR) do you need?
- If the project is web-based, what kind of user interface will you employ?

Guide

Assessment and feedback:

- How (e.g., exams, essays, presentations) and how often (e.g., end of semester; weekly) will you assess your students?
- What feedback mechanism will you use?

END GOAL: *A detailed actionable plan for your course*

D. DEVELOP learning materials and validate the course plan

In this phase, two elements are particularly crucial:

(1) Create: teachers 'create things' that will be used in the course (e.g., hand-outs; power point slides). Pay special attention to graphics, colour and clarity as they have huge bearing on engaging students. Follow strictly to your plan at the design phase.

(2) Validate: reiteratively check your plan and course materials (e.g., are there basic errors – grammar, syntax? Are the materials aligned with course goals? How do they facilitate the course?) Feedback from stakeholders and revision will lead to a final adjustment before actual course implementation

END GOAL: *Online course content*

I. IMPLEMENT the course plan

This is the actual delivery of the instruction plan. This is the phase students gain deeper knowledge and learn with teachers' guidance. To ensure its outcome, four elements should be considered:

(1) Tutor training: make sure the instructor has good command of course outcomes, delivery, assessment and feedback.

(2) Participant engagement: familiarise students with the entire lesson plan (e.g., outcomes, assessment, activities). Actively communicate with them as to their learning needs and difficulties experienced in the course.

(3) Learning environment: ensure all software and equipment are properly tested and installed. Provide relevant guidance for students.

(4) Modification: modifications can be made based on both teachers and students' needs.

Tip: While implementing the plan, you may keep an ongoing record of the 'good' and 'need-to-be-improved' aspects. These notes will serve as formative evaluation (introduced later) to help you revise your future instruction plans.

END GOAL: *The Course is now live.*

E. EVALUATE the course

Evaluation happens at two levels: formative and summative evaluation. Evaluation helps teachers examine the effectiveness of their course, how well the course contributes to the learning goals, and improve future practices.

Formative evaluation takes place during the planning and implementation.

- Teachers may record their feelings and student feedback during the class period, and elicit students' feedback at the end of a class/midway through the semester (e.g., their confusions; how they feel about certain learning tasks).

Summative evaluation occurs at the end of the actual course and usually consists of three levels:

1) **Perception:** students' satisfaction of the course – this could be elicited via Course Evaluation Survey

2) **Learning:** students' acquisition of knowledge and skills

3) **Performance:** students' transfer of acquired knowledge/skills to a new real-life context

    For the latter two levels, teachers may engage students in a project where they must apply what they have learnt. Based on students' project performance, teachers may reflect on their instructional design (e.g., are my activities engaging? Are students reading the material? Should I change the technological tools?)

Questions to consider

- Did we meet the learning goals as set out in the analysis phase?
- Are there extra trainings required for the tutors?
- Do we need to change the media approaches or technological tools used?

END GOAL: *Suggestions for future improvement*

PROs and Cons of ADDIE

Highlights:

- Clearly stated and easy to follow
- Consistent and cost-effective – saves time for teachers, teacher trainers and students
- Facilitates large and complicated teaching projects

Limitations:

- Little attention to teacher-student interaction
- Undermines creativity in course design
- Lack of guidelines on specific choices (which activity/technological tools to choose? which assessment fits?)

Case Studies

The following cases may provide a clearer picture of how ADDIE is implemented in course design in practice:

- Trust, T., & Pektas, E. (2018). Using the ADDIE Model and Universal Design for Learning Principles to Develop an Open Online Course for Teacher Professional Development. *Journal of Digital Learning in Teacher Education, 34*(4), 219-233.

- Patel, S. R., Margolies, P. J., Covell, N. H., Lipscomb, C., & Dixon, L. B. (2018). Using instructional design, analyze, design, develop, implement, and evaluate, to develop e-learning modules to disseminate supported employment for community behavioral health treatment programs in New York state. *Frontiers in public health, 6*, Article 113.

- Hsu, T. C., Lee-Hsieh, J., Turton, M. A., & Cheng, S. F. (2014). Using the ADDIE model to develop online continuing education courses on caring for nurses in Taiwan. *The Journal of Continuing Education in Nursing, 45*(3), 124-131.

Resources and References

- Course design: A systematic approach:
  https://www.niu.edu/facdev/_pdf/guide/prepare/course_design_a_systematic_approach.pdf

- Instructional System Design (ISD): Using the ADDIE Model
  https://www.lib.purdue.edu/sites/default/files/directory/butler38/ADDIE.pdf

- ADDIE: 5 Steps To Effective Training
  https://www.learnupon.com/blog/addie-5-steps/

- The ADDIE Model Infographic:
  https://elearninginfographics.com/the-addie-model-infographic/

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