# ADDIE ('Analysis, Design, Development, Implementation and Evaluation')

**Ashwini Naresh Kudtarkar**

Shri G.P.M. Degree College of Science and Commerce, Andheri, Mumbai, Maharashtra

**Abstract:** *Florida State University initially developed the ADDIE framework to explain, "...the processes involved in the formulation of an instructional systems development (ISD) program for military underservice training that will adequately train individuals to do a particular job and which can also be applied to any underservice curriculum development activity The model originally contained several steps under its five original phases (analyse, design, develop, implement, and evaluate).*

**Keywords:** ADDIE

## I. INTRODUCTION

Florida State University initially developed the ADDIE framework to explain, "...the processes involved in the formulation of an instructional systems development (ISD) program for military underservice training that will adequately train individuals to do a particular job and which can also be applied to any underservice curriculum development activity The model originally contained several steps under its five original phases (analyse, design, develop, implement, and evaluate).

The initial concept behind the instructional design model involved completing each phase sequentially before advancing to the next one. However, over time, practitioners have refined and evolved these steps, resulting in a more dynamic and interactive model compared to the original hierarchical version. By the mid-1980s, the version familiar today appeared.[4]
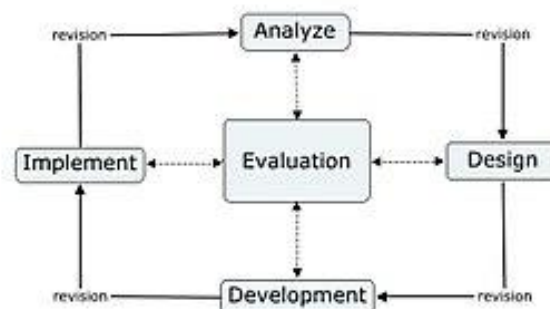


ADDIE Model

The precise origins of the ADDIE label are somewhat unclear, but the foundational concepts of Instructional Systems Design (ISD) can be traced back to a model that was developed for the U.S. armed forces in the mid-1970s. Branson (1978) provides an account of this development, where the Center for Educational Technology at Florida State University collaborated with a branch of the U.S. Army to create a model known as the Interservice Procedures for Instructional Systems Development (IPISD). This model was intended to be used by the Army, Navy, Air Force, and Marine Corps.

In Branson's narrative, the IPISD model is described with five primary headings: Analyze, Design, Develop, Implement, and Control. Notably, subsequent historical reviews of Instructional Design (ID) frequently reference this model. However, it's essential to point out that users and authors generally do not use the ADDIE acronym in this context. Instead, they primarily refer to the IPISD model. Consequently, it is evident that the ADDIE acronym is not derived from the IPISD model.

Phases of ADDIE ('Analysis, Design, Development, Implementation and Evaluation')

## Analysis phase

The analysis phase clarifies the instructional issues and objectives, and identifies the learning environment and learner's existing knowledge and skills. Questions the analysis phase addresses include:

Who are the learners and their characteristics?

What is the desired new behaviour?

What types of learning constraints exist?

What are the delivery options?

What are the pedagogical considerations?

What adult learning theory considerations apply?

What is the timeline for project completion?

The process of asking these questions is often part of a needs analysis. During the needs analysis instructional designers (IDs) will determine constraints and resources in order to fine tune their plan of action. [6]

## Design phase

The design phase is concerned with various elements, including learning objectives, assessment instruments, exercises, content, subject matter analysis, lesson planning, and media selection. This phase should be characterized by systematic and specific approaches. "Systematic" implies employing a methodical and organized process for identifying, developing, and evaluating a set of strategies aimed at achieving project goals. Meanwhile, "specific" emphasizes the need for the instructional design team to diligently execute each component of the instructional design plan, paying careful attention to detail. In the design phase, it is common to create documents such as design proposals or concept and structure notes to assist in the final development stage.

## Development phase

During the development phase, instructional designers and developers work on creating and assembling the content assets that were defined in the earlier design phase. In cases where e-learning is part of the project, programmers are responsible for developing or integrating the necessary technologies. Designers are involved in crafting storyboards, while testers focus on debugging both the materials and procedures. The team collaboratively reviews and revises the project based on feedback. A crucial step in this phase involves conducting a pilot test, which is imperative for ensuring the effectiveness of the course material. This pilot test typically involves key stakeholders and a rehearsal of the course material. [7]

## Implementation phase

The implementation phase is focused on the development of procedures designed to facilitate training for both instructors and learners. Training facilitators are responsible for covering various aspects, including the course curriculum, learning objectives, delivery methods, and assessment procedures. For the learners, preparation involves training on any new tools, whether software or hardware, and ensuring smooth student registration. Additionally, this phase encompasses the critical process of evaluating the design's effectiveness in practice.

## Evaluation phase

The evaluation phase consists of two aspects: formative and summative. Formative evaluation is present in each stage of the ADDIE process, while summative evaluation is conducted on finished instructional programs or products. Donald Kirkpatrick's Four Levels of Learning Evaluation are often utilized during this phase of the ADDIE process.

**Copyright to IJARSCT**
**www.ijarsct.co.in**

ISSN
2581-9429
IJARSCT

414

**Stage 1. Analysis:**

**Goals:** To develop understanding of Mensuration.

**Task Analysis:**

**Content analysis:** Concept of Perimeter and Area, Perimeter and Area of Square,Perimeter and Area of Rectangle, Perimeter and Area of Triangle,Perimeter and Area of Circle

**Task Analysis: (Basic skills required):** knowledge of plane figures and their dimensions and units, Basic knowledge computer operating skills on PowerPoint, YouTube, Google form etc.

**Analysis of the learner:**7th class students, independent thinkers, moderate maturity level, Basic knowledge of 2-dimensional shapes, curious and eager to explore, technosavy.


**Stage 2. Design:**

**Designing Learning Outcomes (for Assessment):**

After watching this presentation the learner will be able to…..

Define the term Perimeter and Area

Calculate Perimeter and Area of Square objects

Calculate Perimeter and Area of  Rectangular objects

Calculate Perimeter and Area of Triangular objects

Calculate Perimeter and Area of Circular objects

Solve word problem base on mensuration


**Choosing the Course format:** It will be a blend of computers (offline and online) and classroom setting.

**Creating an instructional strategy**

**Pre instructional activities:** Quiz through ICT in the form of Google form, S Examples to calculate Perimeter and Area.

**Learner's participation:** group discussion, question-answer session, co-operative learning.

**Follow through activity:** Students will be able to solve numeric and word problem base on Perimeter and Area.

**Designing Evaluation Strategies:**

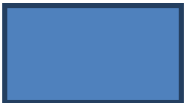**Formative evaluation:** exploratory question through-out the process of learning.

**Summative evaluation:** students will discuss the application of mensuration in real life example. They should understand how to  find out perimeter and area of  plane surfaces.


**Stage 3. Development**

**Story board:**

| ANIMATION/ VISUALS/ VIDEO | CONTENT (TEXT) | AUDIO AND SOUND EFFECTS |
|---|---|---|
| **SLIDE NO: 1** | **SLIDE TITLE:** Details about Me | |
| Text with custom animation | **Name of Students:-** Harikesh R Yadav **Roll no.:-** B-28 **Class :-** F.Y.B.Ed **SEM:-** 1 **Year:-** 2020-2021 **Guided By :-** Vikas Sir **Project Based Course:-** ICT Activity no. 2 | No audio |
| **SLIDE NO: 2** | **SLIDE TITLE:** Topic name and Content | |

**Copyright to IJARSCT**
**www.ijarsct.co.in**

ISSN
2581-9429
IJARSCT

415

# IJARSCT

**ISSN (Online) 2581-9429**

**International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)**

**International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal**

**Impact Factor: 7.301**

**Volume 3, Issue 7, January 2023**

| | | |
|---|---|---|
| Text and pictures with custom animation | Mensuration<br>Perimeter and Area of plane figures<br>Square<br>Rectangle<br>Triangle<br>Circle | No audio |
| **SLIDE NO: 3** | **SLIDE TITLE: Discussion between boy and girl** | |
| Cartoon Pictures of boy and girl showing discussion between them | Girl : What we are going to learn today ?<br>Boy : Today we are going tolearn how to calculate perimeter and area of plane figuresl ike square, rectangle, triangleand circle etc. | No audio |
| **SLIDE NO: 4** | **SLIDE TITLE: Discussion between boy and girl** | |
| Cartoon Pictures of boy and girl showing discussion between them with animation | Boy: Do you know what is what is the perimeter and area of plane figures and how we can calculate it?<br>Girl : I also don't know but we will learn today | No audio |
| **SLIDE NO: 5** | **SLIDE TITLE:** Definition of Perimeter and Area | |
| Text and picture showing Perimeter and Area with animation | What is the perimeter?<br>Perimeter of a shape is defined as the total distance around the shape.<br>What is the Area?<br>Area is the region bounded by the shape of an object. | Voice over for the points written |
| **SLIDE NO: 6** | **SLIDE TITLE:** Girl thinking | |
| Picture of girl and chess board with animation | Girl thinking about how to calculate perimeter and area of chess board. | No audio |
| **SLIDE NO: 7** | **SLIDE TITLE:** Perimeter and Area of Square | |
| Text and picture with animation | Perimeter and Area of Square<br><br>Perimeter of Square=4 × side<br>            =4 × a<br>Area of Square = side × side<br> = a × a | No audio |
| **SLIDE NO: 8** | **SLIDE TITLE:** Example | |

| Text and picture with animation | Find the perimeter and area of the chess board whose length of each side is 20 m.<br>**Solution :**<br>Here l = 20 cm ,<br>Perimeter of Square=4 × side<br> =4 × a<br> = 4 × 20<br>= 80cm.<br><br>Area of Square = side × side<br> = a × a<br>= 20 × 20                                          = 400 cm$^2$<br>Therefore Perimeter and area of chess board are 80 cm and 400 cm2 respectively. | No voice |
|---|---|---|
| **SLIDE NO: 9** | **SLIDE TITLE:** Girl thinking | |
| Picture of boy and door with animation | Boy thinking about how to calculate perimeter and area of door. | No voice |
| **SLIDE NO: 10** | **SLIDE TITLE: :** Perimeter and Area of Rectangle | |
| No pictures<br>Custom animation-appear | Perimeter and Area of Rectangle<br><br>Perimeter of Square= 2 × ( length + breadth)<br>                = 2 × ( l + b)<br>Area of Square = length × breadth<br>   = l × b | No sound |
| **SLIDE NO: 11** | **SLIDE TITLE:** Example | |
| Text and picture with animation | Find the perimeter and area of the chess board whose length is 2 m and height is 5 m.<br>**Solution :**<br>Here l = 2 m and h=5 ,<br>Perimeter of Rectangle=2 ×( length+height )<br>=2 ×( 2+5 )<br>=2 ×10<br> =20 m.<br>Area of Rectangle =length × height<br> =2 × 5<br> =2 ×5                                          =10 m$^2$<br>Therefore Perimeter and area of door are 20 m and 10 m$^2$ respectively. | No voice |
| **SLIDE NO: 12** | **SLIDE TITLE:** Girl thinking | |
| Picture of girl and triangular sign board with animation | Girl thinking about how to calculate perimeter and area of triangular sign board. | No audio |

ISSN
2581-9429
IJARSCT

417

| **SLIDE NO: 13** | **SLIDE TITLE:** Perimeter and Area of  Triangle | |
|---|---|---|
| Text and picture with animation | Perimeter and Area of Triangle <br><br> Perimeter of Triangle =sum of all three sides <br>  =  a+b+c <br> Area of Triangle= ½ ×base ×height <br> = ½ ×b ×h | No audio |
| **SLIDE NO: 14** | **SLIDE TITLE:** Example | |
| Text and picture with animation | Find the perimeter and area of triangularsign board whose height is 24 cm and base is20 cm and length of remaining two sides is same which 18 cm. <br> **Solution :** <br> Here h =24 cm, b=20 cm, a = b = 18 cm, <br> Perimeter of Triangle =sum of all three sides <br>  =a+b+c <br> =18 + 20 + 18 <br>               = 56 cm. <br> Area of Triangle= ½ ×base ×height <br> = ½ ×b ×h <br> = ½ ×20×24 <br>  = 240 cm$^2$ <br> Therefore Perimeter and area of triangular board are 20 m and 10 m$^2$ respectively. | No voice |
| **SLIDE NO: 15** | **SLIDE TITLE:** Girl thinking | |
| Picture of boy and clock with animation | Boy thinking about how to calculate perimeter and area of clock. | No voice |
| **SLIDE NO: 16** | **SLIDE TITLE: :** Perimeter and Area of Circle | |
| No pictures <br> Custom animation- appear | Perimeter and Area of Circle <br><br> Perimeter of Circle= 2πr <br> Area of  Square = $\pi r^2$ | No sound |
| **SLIDE NO: 17** | **SLIDE TITLE:** Example | |

Copyright to IJARSCT

www.ijarsct.co.in

ISSN
2581-9429
IJARSCT

418

| Text and picture with animation | Find the perimeter and area of the circular clock of radius is 14 cm. Solution : Here r =14 cm , Perimeter of Circle=2πr <br><br> $=2\times 22/7 \times 14$ <br> $=2 \times 22 \times 2$ <br> $=88$ cm. <br> Area of Circle $= \pi r^2$ <br> $=22/7 \times 14^2$ <br> $= 22 \times 14 \times 2$                     $=616$ cm$^2$ . <br> Therefore Perimeter and area of circular clock are 80 cm and 400 cm2 respectively | No voice |
|---|---|---|
| **SLIDE NO: 18** | **SLIDE TITLE:** Assignment and Exercise | |
| Text and picture with animation | **Assignment** : Watch the following video which will help to solve the exercise. Link of video : https://youtu.be/K_aR9B4tKFk <br> **Exercise :** Try to solve the following Quiz. Quiz link : https://forms.gle/DmW1HyKzQ3PhFeL38 | No voice |

**Stage4. Implementation**:

Students will be tested for basic skills of ICT. If required, they will be trained in these skills. Teacher will give necessary instructions.

The CAI will be presented. In case of the presence of the teacher, He/She will insure that the instruction on the screen will be followed sincerely by students.

**Stage5. Evaluations:**

In the process of learning, students will respond to the instruction and questions throughout the presentation.

The task will be given to test the application of the learnt knowledge.

Students will be given a quiz at the end of learning to give views on the effectiveness of the CAI.

## II. CONCLUSION

The ADDIE learning model is highly appealing due to its straightforward and intuitive nature. It offers a strategic approach that relies on measurable learning objectives, acting as a catalyst for achieving high-quality instructional design. If you're seeking to develop and execute an efficient training program using a well-established and proven process, the ADDIE model is a valuable choice. It provides a systematic framework that guides instructional designers in crafting effective and impactful learning experiences.

## REFLECTION

[1]. Through this activity I learnt how to use ADDIE model and what is ADDIE model.

[2]. I also learnt how to teach student by virtually.

[3]. CAI package is a self-learning study material for students they can learn in the absence of teacher.