Conference: 7th INTERNATIONAL CONGRESS
Crowdsourcing Scientific-Technological and Innovative
Booklets

RENIECYT - LATINDEX - Research Gate - DULCINEA - CLASE - Sudoc - HISPANA - SHERPA UNIVERSIA - E-Revistas - Google Scholar DOI - REBID - Mendeley - DIALNET - ROAD - ORCID

Title: Importance of instructional design for the implementation of Flipped Learning Model in the modality of distance education

Authors: Mayra GONZÁLEZ-MOSQUEDA, Karla MARTÍNEZ-TAPIA, Arturo GONZÁLEZ-CERÓN Josefina BERNAL-VELÁZQUEZ

Editorial label ECORFAN: 607-8324
BCIE Control Number: 2016-01
BCIE Classification (2016): 221116-0101

Pages: *16*
RNA: 03-2010-032610115700-14

Index

1. Introduction
2. Methodology
3. Results
4. Conclusions
5. References

1. Introduction

Knowledge Society

New scenarios

Higher education institutions

Greater coverage

Various alternatives

National Technological Institute of Mexico (TecNM)

Model of Distance Education

Curriculum Flexibility Strategy

Learning Environments

Didactic strategies

Technopedagogical tools

Information and Communication Technologies (ICT)

Generic competences

1. Introduction

2011
Modality of Distance Education

Technological Institute of Pachuca

Traditional teaching model

Student-centered model

Responsible for the process and pace of learning

Competence

Autonomy

Techno-pedagogical materials

ADDIE Model

Teacher

Guide

Flipped Learning Model

e-learning

b-learning

2. Methodology

Stages

1 Implementation

ADDIE Model
Instructional design

2 Aplicación

Flipped learning
Pedagogical model

Analysis Groups

Academic Unit

Group 1
Jacala de Ledezma

Online

Group 2
Cd. Sahagún

Virtual

28 Teachers
57 Students

Researc

- Quantitative Type
- Descriptive cut

Data collection

Instruments
Checklist 1: Monitoring implementation processes of ADDIE model Checklist 2: Monitoring the teaching regarding the implementation of the flipped classroom strategy.
Questionnaire 1: Student satisfaction regarding the quality of instructional design and experience with the flipped classroom strategy.
Interview: Teaching experience regarding the implementation of the ADDIE model for instructional design and their perception of the dynamics of learning and student autonomy with the flipped classroom.

Table 1. *Data collection tools*

2. Methodology

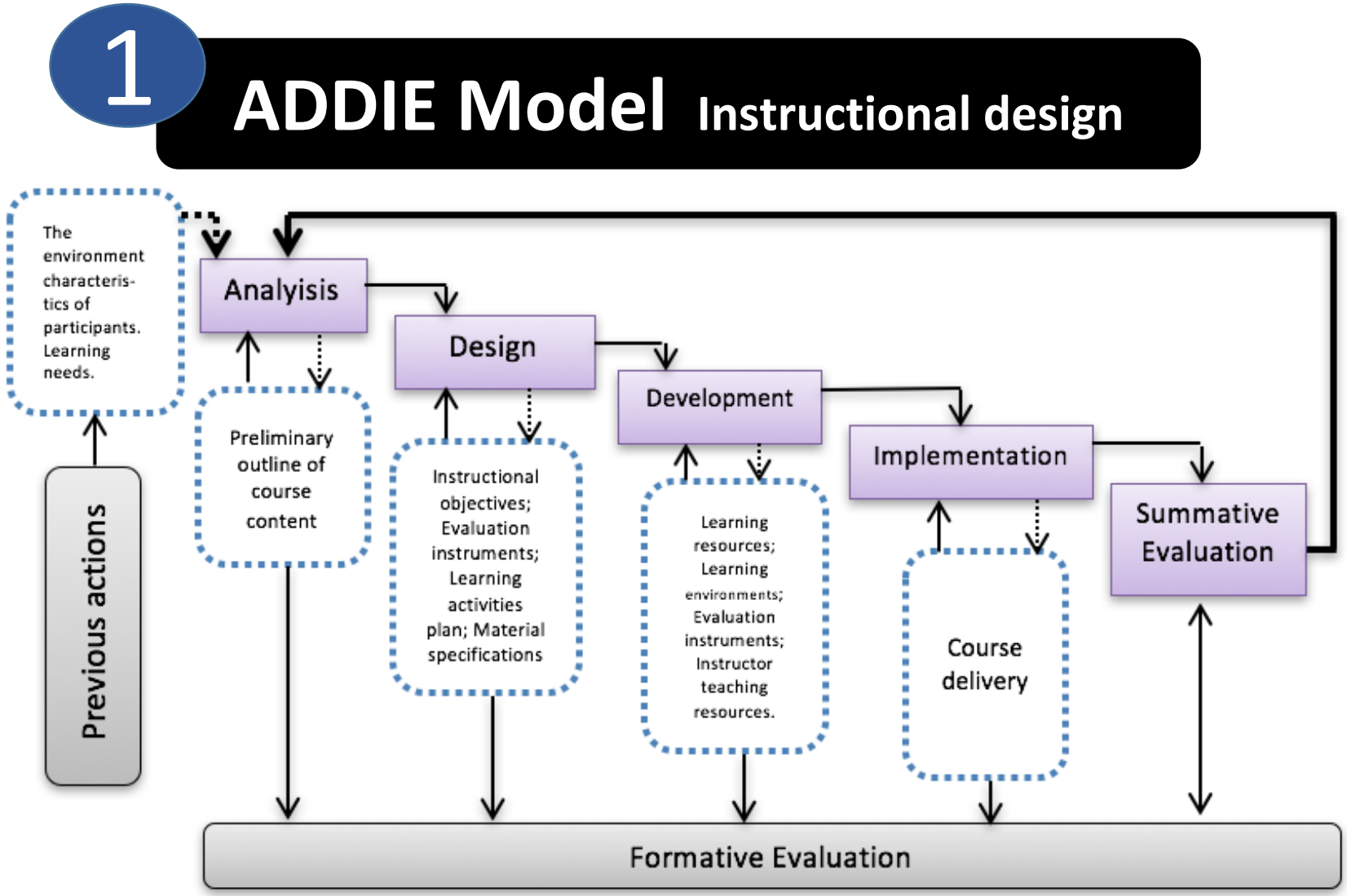

Figure 1 *Outline of each phase of the ADDIE model.* Taken from Gonzales, S., & Mauricio, D. [2006, p.7)]

2. Methodology

1 ADDIE Model Instructional design

Analysis Phase

Characteristics of the population

Academic Units

Jacala and Cd. Sahagún

Careers

Bachelor in Administration
Computer Systems Engineering
Industrial engineering

Online Sessions

Virtual course

31 Number of students **26**

Age

19 to 55 years old

19 to 41 years old

Technological resources

Didactic materials

Tests

Tasks and activities

Moodle platform

Communication tools

Skype Zoom

Video calls

2. Methodology

1 ADDIE Model Instructional design

Design Phase

Sequence and organization of the contents of each course

Num.	Elements in the structure	Num.	Elements in the structure
1	Name of the subject	12	Official program of the course
2	Image or animation allusive to the subject	13	Teaching instrumentation of the subject (tutorial)
3	Subject data (two - column table)		**For each unit of learning:**
4	Name of the teacher who teaches the subject	14	Abstract title
5	Teacher photography	15	Study period
6	Presentation of the subject (according to current program)	16	Specific topic competency
7	Assessment and Accreditation of the subject	17	Description Table to evaluate activities: activity, weighting, delivery date, evidence and generated competency
8	Specific competencies of the subject	18	Learning activities design
9	Previous competencies	19	Design or use of techno-pedagogical resources
10	Scheduling dates of beginning and end of each learning unit and evaluation periods.	20	Self - Assessment Test / Evaluation
11	Diagnostic evaluation		

Table 2 *Elements of format for subject review in platform.* Developed by Gonzalez, M. [2016] with reference information of TecNM [2015]

2. Methodology

1 ADDIE Model Instructional design

Techno-pedagogical materials	Used	Designed	Teacher	Student
Videos	X		X	X
Podcast		X	X	X
Documents	X	X	X	X
Electronic presentations in PowerPoint	X	X	X	X
Electronic presentations in Prezi		X		X
Cognitive maps		X		X
Digital books	X		X	X
Web page	X	X	X	X
Blog		X		X
Infographic		X	X	X
Digital billboards		X		X
Google Forms		X	X	X
Interactive activities		X		X
Skype	X		X	X
Zoom	X		X	X
Messaging platform	X		X	X
Email	X		X	X
Google Drive	X		X	X

Table 3 *Techno-pedagogical materials and mass media.* Developed by Martínez, K. [2016]

Development and Implementation Phase

Learning activities

- **WHAT?**
- **FOR WHAT?**
- **WITH WHAT?**
- **HOW AND HOW MUCH?**
- **WHEN?**
- **WHO?**

Elements of instructions design

2. Methodology

2 Flipped Learning Pedagogical model

Implementing "*Flipped Classroom*"	
Group 1: **Jacala of Ledezma Unit**	**Group 2:** **Sahagún City Unit**
Participants: A group of 31 students. **Modality**: Distance Education **Teacher participation**: He served as guide and facilitator in the process, using their academic load (hours - assigned class) to develop each of the issues addressed in the curriculum through collaborative activities with the student; under the three stages of a training session: openness, development and closing. **Student participation**: Review, analyzes and studies the techno-pedagogical materials prior to class. Develops learning activities (diagnostic, formative and summative) during and after the learning sessions.	**Participants**: A group of 26 students. **Modality**: Virtual Education **Teacher participation**: He served as guide and facilitator in the process, using their academic load (hours - assigned class) to advise or discuss specific derivatives points of the study and preliminary analysis of techno-pedagogical materials and / or those arising during the development of learning activities by the student. **Student participation**: Review, analyzes and studies the techno-pedagogical materials prior to the counseling session. Develops learning activities (diagnostic, formative and summative) outside learning sessions.

Table 4 *Characteristics of the study groups.* Prepared by Gonzalez, M. [2016]

Teaching and learning strategies

- Project learning,
- Collaborative learning,
- Electronic evidence portfolios,
- Documentary and field research,
- Production of educational materials,
- Study of cases,
- Solution of practical exercises,
- Analysis of social environments,
- Infographics

3. Results

Follow-up to the implementation of the ADDIE model

Elements in the structure	Number of teachers who omitted elements		
	First checking	Second checking	Third checking
Teacher photography	13	8	8
Assessment and Accreditation of the subject	10	3	2
Scheduling table of beginning and end dates of each learning unit and evaluation periods.	22	8	5
Diagnostic evaluation	4	2	0
Teaching instrumentation of the subject (tutorial)	16	7	5
For each unit of learning:			
Study period	11	5	3
Description table of activities to evaluate: activity, weighing, delivery date, evidence and generated competency	15	8	3
Learning Activities Designing	18	8	5
Design or use of techno-pedagogical resources	8	4	2

Table 5 *Items adjusted more frequently during the review of structures*

3. Results

Monitoring the implementation of the flipped learning strategy

- **68%** of teachers ***met the scheduled dates*** for the beginning and end of their learning units during the course of the semester.

- The **28 teachers** who participated in the project ***used various teaching and learning strategies*** under the flipped classroom dynamics.

- **73.2%** of teachers ***designs instructions clearly and precisely*** specifying what, how, when, with what and how to deliver the learning activities.

- **45%** of teachers, ***properly designed evaluation rubrics***, specifying the criteria, elements and features to value learning activities.

3. Results

Monitoring the implementation of the flipped learning strategy

- **91%** of teachers at the start of the course, ***published the schedule of activities***, dates of assessments first and second chance; **87%** released ***didactic instrumentation.***
- **61%** of teachers ***used pertinently information and communication technologies*** (WebEx, videoconferencing, chat, zoom, others) to provide advice and feedback.
- **70%** of teachers make ***frequent use of didactic resources*** (anthologies, software, electronic presentations, notes, guides of practices, books, guides of study, among others).
- **62%** of teachers, ***feedback the activities*** in a precise and timely manner.

3. Results

Monitoring the implementation of the flipped learning strategy

- **93%** of teachers seek to ***achieve significant learning in their students***, adequately relating the themes of each learning unit with a real social and professional context.
- **66%** of teachers generally encouraged ***participatory, dynamic and motivating collaborative work.***
- **34% of students consider that autonomous competition is the one with the greatest development, followed by creativity with 29%.**
- Students evaluate **75%** of teachers with a **grade higher than 8 points**, on a scale of 1 to 10.

4. Conclusions

The study highlights the importance of efficiently implementing an ***Instructional Design***, as a guide to achieve that the student autonomously develop with the minimum of conflicts the learning activities entrusted.

The use of different didactic strategies, such as the **flipped classroom**, and the use of ***techno-pedagogical resources***, have a greater impact in the achievement of the learning objectives that contribute to the generation of the **competences** required by each study program.

5. References

- Lage, M. J., Platt, G. J., & Treglia, M. (2000). Inverting the classroom: A gateway to creating an inclusive learning environment. *The Journal of Economic Education*, *31*(1), 30-43.
- Morales, B., Edel, R., & Aguirre, G. (2014). *Modelo ADDIE (análisis, diseño, desarrollo, implementación y evaluación): Su aplicación en ambientes educativos.* Obtenido de Los Modelos Tecno-Educativos, revolucionando el aprendizaje del Siglo
- Schuman, L. (1996). Perspectives on instruction. [On-line]. Available: http://edweb.sdsu.edu/courses/edtec540/Perspectives/Perspectives.html
- Stone, B. B. (2012). Flip your classroom to increase active learning and student engagement. In Proceedings from 28th Annual Conference on Distance Teaching & Learning, Madison, Wisconsin, USA.

Acknowledgements

© 2016 Rights Reserved | ECORFAN,S.C. (ECORFAN®-Mexico-Bolivia-Spain-Ecuador-Cameroon-Colombia-Cuba-Salvador-Guatemala-Nicaragua-Peru-Paraguay-Democratic Republic of Congo)

ECORFAN®

© ECORFAN-Mexico, S.C.

No part of this document covered by the Federal Copyright Law may be reproduced, transmitted or used in any form or medium, whether graphic, electronic or mechanical, including but not limited to the following: Citations in articles and comments Bibliographical, compilation of radio or electronic journalistic data. For the effects of articles 13, 162,163 fraction I, 164 fraction I, 168, 169,209 fraction III and other relative of the Federal Law of Copyright. Violations: Be forced to prosecute under Mexican copyright law. The use of general descriptive names, registered names, trademarks, in this publication do not imply, uniformly in the absence of a specific statement, that such names are exempt from the relevant protector in laws and regulations of Mexico and therefore free for General use of the international scientific community. BCIE is part of the media of ECORFAN-Mexico, S.C., E: 94-443.F: 008- (www.ecorfan.org/ booklets)

© 2016 Rights Reserved | ECORFAN,S.C. (ECORFAN®-Mexico-Bolivia-Spain-Ecuador-Cameroon-Colombia-Cuba-Salvador-Guatemala-Nicaragua-Peru-Paraguay-Democratic Republic of Congo)